

Policy WATCH

Volume XI, Issue 5
May 2022, New Delhi

India's Place in the World

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Songok Han Thornton*





RAJIV GANDHI
INSTITUTE FOR CONTEMPORARY STUDIES

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Editorial

The Rajiv Gandhi Institute for Contemporary Studies (RGICS) works on five themes:

1. Constitutional Values and Democratic Institutions
2. Growth with Employment
3. Governance and Development
4. Environment, Natural Resources and Sustainability
5. India's Place in the World.

This issue of Policy Watch begins with an overview article on India's relations with the major powers – the United States, China and Russia- not as much in the bilateral context as in the context of multilateral groupings such as the G-20, BRICS and the QUAD. This perspective is important in the time of the ongoing war in Ukraine, the tensions on the India-China border and the upcoming Presidency of India in the G-20. This issue is a Digest of articles, all published elsewhere. The thematic digest has been put together by **RGICS Senior Visiting Fellow, Prof Somnath Ghosh**, who did his doctoral work at the Jawaharlal Nehru University's School of international Studies.

The first article by Prof Chaulia of OP Jindal Global University asked the intriguing question – how come the foreign ministers of the Russia, India and China (RIC) trilateral held a virtual meeting just one week after the armies of China and India engaged in a fierce hand-to-hand combat in the Galwan Valley in which twenty Indian troops and an unspecified number of Chinese troops were killed. “Talk of a limited war was in vogue. Yet, amid darkening clouds and manoeuvring for tit-for-tat escalation in the high Himalayas, neither China nor India boycotted the trilateral, whose agenda was to focus on broad themes like global trends following the COVID-19 pandemic.” His answer is “BRICS will continue to have both China and India inside the tent. For China, BRICS is one of many multilateral institutions with which to challenge and push back the United States and the Western-crafted liberal international system. For India, BRICS is less of an anti-Western formation and increasingly a soft balancing instrument through which China can be bound to rules and moderate its assertive behaviour as a great power. The conclusion is that BRICS will survive China-India confrontations even amid the worsening geostrategic environment in Asia.”

The second and third articles examine the power relationship among the G-20 nations, particularly China's rising role vis-à-vis the US. The position of Russia and India is also examined. Interestingly, Prof Ghosh has selected these two articles written respectively by Chinese and Russian authors and thus the same issue is examined from different perspectives.

The second article Russian authors Artyushkin, Kazantzev, and Sergeev, have used a multi-dimensional scaling model which demonstrates that “China’s position sharply increased by 2009, and subsequently China began to claim absolute leadership. Nevertheless, an analysis of the nature of leadership shows that the United States still has leading positions in most of the selected indicators, while China has a fairly clearly limited profile of global leadership associated with accelerated (largely catching up) economic and technological development. Also, the PRC is still quite far from global leadership in terms of the development of social structures and even from a military point of view. In many quantitative terms, it has already become difficult for the United States to effectively exercise its hegemony in the world, but China is not yet able to replace them (primarily in terms of quality).”

The third article, by Chinese authors, Xianbai Ji and Guanlie Lim, focuses on the Chinese way of reforming global economic governance, while analysing China’s rising role in G-20. They surmise that “China aspires to transform the G-20 from an ad hoc crisis management platform to one promoting proactive long- term global policy cooperation, partly in support of ‘a community with shared future for humanity’ and the Belt and Road Initiative.” This article analyzes China’s participation and increasingly critical role in the G-20. China’s main priorities in relation to the G-20 evolved over time. The initial focus was on containing financial contagion and reforming Bretton Woods institutions and this was followed by attempts to resolve bilateral trade issues with the US. It however identifies several roadblocks to Chinese leadership in G-20 including public distrust of international economic interdependence, populist backlash against neoliberal globalization, as well as geopolitical, ideological and technological tussles between China and the West.

The fourth article, by Thornton and Thronton, examines the rationale for India’s presence in the Quadrilateral Security Dialogue (or Quad), along with the US, Japan and Australia, as a containment strategy for China. India has no choice but to seek security through Sino-resistant channels. But it raises the point that the other three are liberal democracies. “This puts Modi in stupendous ideological bind. The Davos globalism he has courted in the past was so economic that his domestic repression was all but ignored. Now, however, he is playing in a liberal international league where his style of Bharatiya Janata Party (BJP) autocracy will not be condoned. His fate as well as India’s hinges on how he navigates a post-globalist geopolitics that is presently defined by the moral realism of the Biden Doctrine.”

We also wish to acknowledge our gratitude to the authors and the journals where these articles were originally published. As all but one article are available only through subscription, we have only published the abstracts. The weblinks for full articles are given below so that readers may use their own access to read those pay-walled articles. The Russian article was downloadable in Russian and we have attached a Google Translated version of it. We hope the readers find this digest of articles useful and interesting. We welcome your feedback.

Vijay Mahajan

Director, Rajiv Gandhi Institute for Contemporary Studies



BRICS stands for Brazil, Russia, India, China and South Africa



https://upload.wikimedia.org/wikipedia/commons/thumb/1/16/Informal_meeting_of_the_BRICS_during_the_2019_G20_Osaka_summit.jpg/368px-Informal_meeting_of_the_BRICS_during_the_2019_G20_Osaka_summit.jpg

In Spite of the Spite: An Indian view of China and India in BRICS

Global Policy | Volume 12, Issue 4

Prof. Sreeram Chaulia

Subscription download available at <https://doi.org/10.1111/1758-5899.13009>
<https://onlinelibrary.wiley.com/doi/10.1111/1758-5899.13009>

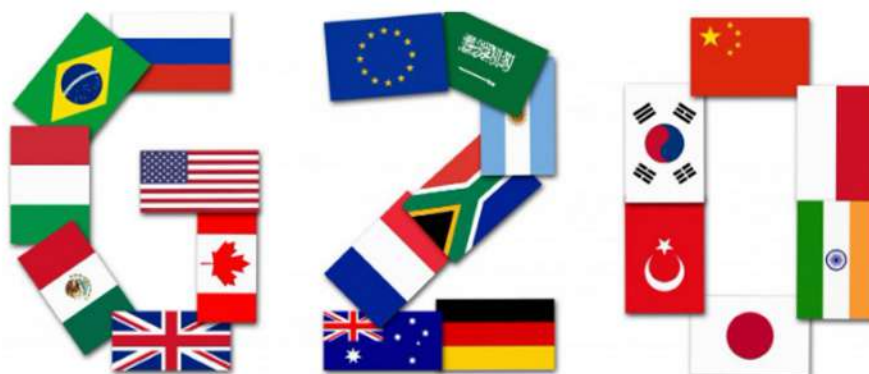
Abstract

Based on expectations drawn from rationalist understanding of international institutions, this article argues that China and India persist with membership and participation in BRICS despite their growing bilateral conflicts because the grouping serves their respective strategic interests.

Contrary to accounts portraying BRICS as a model for South–South cooperation or as a forum for socialization of member countries to develop a new shared collective identity, the article highlights the nationalistic power politics angle and explains why BRICS will continue to have both China and India inside the tent.

For China, BRICS is one of many multilateral institutions with which to challenge and push back the United States and the Western-crafted liberal international system. For India, BRICS is less of an anti-Western formation and increasingly a soft balancing instrument through which China can be bound to rules and moderate its assertive behaviour as a great power.

The article also highlights the constructive role Russia plays in the internal soft balancing of China via BRICS and offers examples of Russia acting as a behind-the-scenes intermediary to message Sino-Indian tensions during military standoffs. The conclusion is that BRICS will survive China-India confrontations even amid the worsening geostrategic environment in Asia.



<https://www.loc.gov/rr/business/images/brics-logo.png>

The members of the G20 are: Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States, and the European Union.



Balance of power between the G-20 States: Analysis with Multidimensional Scaling Method

– Polis. Political Studies. 2021. No. 2. P. 125-138. (In Russ.)

Artyushkin V.F., Kazantzev A.A., Sergeev V.M.

Free download in Russian from <https://doi.org/10.17976/jpps/2021.02.09>

English translation is attached at the end of the issue.

Abstract

This article applies a method of multidimensional scaling (visualization of multi-dimensional structures) to studying different dimensions of power competition between the great states. On the basis of analysis of the Neo-Realist, Neo-Liberal, and World-systems theory literature on global hegemony, 8 criteria of global leadership were defined: GDP per capita (PPP), military expenditure (% of GDP), amount of currency reserves (including gold), export of goods and services, direct foreign investments, population size in urban agglomerations with more than one million people (% of total population), articles in peer-reviewed scholarly journals, and patent applications.

A group of 19 states of the G-20 (excluding the EU) was selected for comparative analysis. Four models visualizing positions of 19 countries according to 8 dimensions were created: for 2004, 2009, 2013, and 2016. These results were compared to the results of calculation including 14 countries: Argentine, Brazil, China, Germany, Spain, France, Great Britain, India, Italy, Japan, Mexico, Russia, Turkey, and the USA. Using mathematical methods of analysis, as traditionally applied in IR literature, turns the making of such models into a very complicated task. Therefore, the mathematical method of the visualization of multi-dimensional structures developed by Russian scholars was applied to this task.

The models demonstrate that China's positions sharply increased in 2009 and since that time China has started to slowly replace USA as an absolute leader. However, if we analyze leadership within specific categories included into our model, the USA still hold leading (or close to leading) positions according to the majority of parameters, while China has a strictly defined profile of leadership connected to its accelerated economic and technical development. However, China is still far from leadership, from the point of view of the development of social structures and even regarding the military dimension.



<https://theconversation.com/the-g20-a-necessary-evil-that-can-deliver-some-benefits-74575>



The Chinese way of reforming global economic governance: An analysis of China's rising role in the Group of Twenty (G-20)

The Chinese Economy | 55:4, 282-292, DOI

Xianbai Ji, Guanle Lim

Subscription download available at [10.1080/10971475.2021.1972546](https://doi.org/10.1080/10971475.2021.1972546)

Abstract

Since the Global Financial Crisis engulfed much of the world in 2008, the Group of Twenty (G-20) has emerged as the self-acclaimed “premium forum” for international economic cooperation and policy coordination. The ascendancy of G-20, of which China is a part, indicates the world’s preference for a more inclusive and informal economic governance model, moving away from the relatively restrictive Group of Seven (G-7) and the legalized Bretton Woods settings.

This article analyzes China’s participation and increasingly critical role in the G-20. China’s main priorities in relation to the G-20 evolved over time. The initial focuses on containing financial contagion and reforming Bretton Woods institutions were followed by attempts to resolve bilateral trade issues with the US and to fight the Coronavirus Disease 2019 (COVID-19) pandemic.

China aspires to transform the G-20 from an ad hoc crisis management platform to one promoting proactive long-term global policy cooperation, partly in support of “a community with shared future for humanity” and the Belt and Road Initiative. However, public distrust of international economic interdependence, populist backlash against neoliberal globalization, as well as geopolitical, ideological, technological tussles between China and the West collectively present significant challenges to the G-20.



https://striveindia.in/wp-content/uploads/2021/07/inCollage_20210707_140212451-1-scaled.jpg



Commentary – The making of Quad Realism: The “Idea of India” meets the Biden Doctrine

William H. Thornton, Songok Han Thornton

Subscription download available at

<https://journals.sagepub.com/doi/abs/10.1177/00438200221081110>

Abstract

Once again, the world is polarizing along ideological lines and this time India can neither stand aside nor stand alone. In the face of China's mounting provocations and patent military superiority, Narendra Modi knows that India has no choice but to seek security through Sino-resistant channels like the Quadrilateral Security Dialogue (or Quad), in league with America, Japan, and Australia. It is no accident that India's most dependable allies are liberal democracies.

This puts Modi in a stupendous ideological bind. The Davos globalism he has courted in the past was so economic that his domestic repression was all but ignored. Now, however, he is playing in a liberal international league where his style of Bharatiya Janata Party (BJP) autocracy will not be condoned. His fate as well as India's hinges on how he navigates a post-globalist geopolitics that is presently defined by the moral realism of the Biden Doctrine.



The relation of powers between the great powers in the “Group of 20”: An analysis using the method of Multi-dimensional Scaling

V.F. Artyushkin, A.A. Kazantsev, V.M. Sergeev

ARTYUSHKIN Viktor Fedorovich, Candidate of Political Sciences, Lecturer at the Department of Mathematics, Econometrics and Information Technology, MGIMO MFA of Russia, Moscow, email: ururur1@bk.ru;

KAZANTSEV Andrey Anatolyevich, Doctor of Political Sciences, Chief Researcher, IMI MGIMO, MFA of Russia; Professor of the Department of International Relations, Leading Researcher, Research and Educational Laboratory of Political Geography and Modern Geopolitics, National Research University Higher School of Economics, Moscow, email: andrka@mail.ru;

SERGEEV Viktor Mikhailovich, Doctor of Historical Sciences, Candidate of Physical and Mathematical Sciences, Director of the Center for Global Problems IMI, MGIMO MFA of Russia, Moscow, email: victor04076831@mail.ru

Artyushkin V.F., Kazantsev A.A., Sergeev V.M. The balance of power among the great powers in the "Group of 20": analysis using the method of multidimensional scaling. - *Polis. Political studies*. 2021. No. 2. S. 125-138. <https://doi.org/10.17976/jpps/2021.02.09>

The article was prepared with the financial support of the Moscow State Institute of International Relations of the Russian Ministry of Foreign Affairs within the framework of project No. 1921-01-02 “Chinese 'Belt and Road' project: the formation

Annotation

The purpose of the article is to analyze the balance of power between the great powers within the G20 by applying one of the variants of the multidimensional scaling method. Based on the analysis of the related concepts of “hegemony” and “strength” in international relations, within the framework of neorealist, neoliberal and world-system theories of global hegemony, eight criteria for global leadership were identified: GDP per capita, PPP; military spending (% of GDP); total reserves (including gold); export of goods and services (in US dollars); foreign direct investment, net inflow (% of GDP); population in urban agglomerations with more than 1 million people (% of the total population); articles in scientific and technical journals; patent applications made by residents of countries. The study tested the robustness of the global leadership configuration calculations as the number of states considered changed (from 19, including all G20 members except the non-state EU, to 14 states, and by excluding certain states from the calculations “twenty”). The resulting model demonstrates that China's position sharply increased by 2009, and subsequently China began to claim absolute leadership. Nevertheless, an analysis of the nature (profile) of leadership shows that the United States still has leading positions in most of the selected indicators, while China has a fairly clearly limited profile of global leadership associated with accelerated (largely catching up) economic and technological development. Also, the PRC is still quite far from global leadership in terms of the development of social structures and even from a military point of view. In many quantitative terms, it has already become difficult for the United States to effectively exercise its hegemony in the world, but China is not yet able to replace them (primarily in terms of quality).

This article aims to analyze the balance of power among the great powers within the G20 by applying a variant of the Multidimensional Scaling Method (MMS).

The development of various options for the use of MMS is one of the leading areas of quantitative and qualitative research in the social sciences. MMS is used in the present work as a variant of the multidimensional structure visualization technique (MDS). The technique was developed back in the 1990s by a number of Russian specialists and was used to solve problems in the field of political science and international relations.

Particularly valuable in MMS is its focus on using it in system research, since the indicators describing the objects of research can be not only independent, but also heterogeneous. Where it is useful to solve the problem of structuring a set of objects, on a set of parameters, multidimensional scaling methods turn out to be useful. It is this situation that we encounter when assessing the balance of power between the great powers (there are many states and many different types of resources, one way or another quantified).

The method of multidimensional scaling has practically no methodological boundaries, which determines the breadth of possibilities for its use (psychology, economics, politics). The main limitation of the method is the difficulty of interpreting the results, which are presented not in terms of observed indicators, but in conditional generalized characteristics. For the correct application of the MMS to the study of the balance of power between the great powers, it is necessary, first of all, to analyze examples of the application of the method to one way or another similar plots.

I. Adelman and S.T. Morris [Adelman, Morris 1974]. The qualitatively quantitative nature of the results of using MMS is both a strength and a weakness of the approach implemented through them, so the task of modernizing methods is being solved throughout all the years of their application. Thus, in the work of P. Groenen and W. Heiser, a method is proposed to compensate for the consequence of the use of the WMS – the appearance of several minima in the objective function, which significantly complicates the choice of the optimal structure [Groenen, Heiser 1996]. W.J. Jacoby and D.A. Armstrong [Jacoby, Armstrong 2014].

The use of MMS in the systemic analysis of world development logically stimulated the appearance of works on identifying signs of a failure in this development, i.e. crises. An example is the study by J.Tenreiro Machado “Identification of economic periods and crises using multidimensional scaling”. However, the crisis is a complex phenomenon, and in the work the analysis is based only on stock indices, which, although they integrate many aspects of life, still narrow the context of influence to the economy. Scientific [Machado 2010]. Despite the obvious shortcomings of closed economic models, the use of MMS also gives useful results in them. As an example, let us refer to the work of J.T. Machado and M.-E. Mata “Multivariate scale analysis of the dynamics of the country's economy”. It uses extraordinary statistics 150 years in depth to study the features of the structure on economic variables that make it possible to predict the dynamics of business cycles in a single country (Portugal) [Machado, Mata 2013].

At present, multidimensional scaling methods are implemented as standard procedures in several statistical packages, due to which they have become part of the scientific toolkit, and their use has become commonplace. Therefore, research interest has shifted to the analysis of a set of initial data. This is evidenced by several recent works demonstrating the use of MMS.

For example, E. Sanidas in the study “Proof of a close connection between indicators of economic, social, entrepreneurial and political development of the countries of the world” [Sanidas 2017], based on statistics for 53 countries and 89 parameters, solves the problem of assessing the relationship between groups of parameters (describing the state of the economy, business, culture, political system, social sphere). Since the task does not imply the establishment of cause-and-effect relationships between parameters, instead of regression analysis methods, the author used a combination of hierarchical clustering and MMS methods. The paper shows that the two dimensional structures obtained by the MMS are in good agreement with the a priori classification of countries and do not change qualitatively if the constructions are performed separately for each group of parameters. A valuable element of the analysis is the consideration of the possibility of reducing the number of parameters by highlighting the most informative representatives of the groups. The result of a voluminous and thorough work was recommendations on the choice of informative parameters. The study was focused on the analysis of the properties of a set of parameters that describe a large number of various aspects of the functioning of the state. Therefore, two-dimensional maps reflected the structure of objects of a very broad generalization.

The solution of more specific problems makes it possible to drastically reduce the number of parameters while maintaining the main properties of the structure of the location of objects. An example of such a weighted simplification is the study by J. T. Machado and M.-E. Machado “Analysis of world economic variables using multivariate scaling” [Machado, Mata 2015].

The work also focuses on the analysis of a set of initial data, namely, the information content of the selected representatives, the parameters of the spheres of public life, is determined. The dynamics of each is analyzed on data for 36 years (1977-2012), which is then used to assess the plausibility of the structures obtained by the MMS. Four parameters are claimed to be: 1) GDP per capita (a measure of economic growth); 2) exports as a percentage of GDP (involvement in globalization); 3) life expectancy (well-being); 4) the percentage of enrollment in higher educational institutions (human potential), allow us to obtain a socio-economic structure of 14 developed countries that is consistent with a priori ideas.

In addition, the paper proposes an approach designed to take into account the dynamics of structures over time. To do this, the images of the country at different time intervals are considered as independent objects and are included in one study lots of. It seems to us that such a union is incorrect, since it introduces distortions into the structure. In addition, new knowledge about the trajectory of the movement of objects in time turned into a heap of displacements, complicating the understanding of the dynamics of processes. It should also be noted that the search for a small informative set of parameters is not a completely isolated task, since it is always solved in the process of data selection and analysis of the results obtained. But the search for the most informative, and, at the same time, the minimum set of parameters is a separate voluminous task that was not performed in the work.

In terms of content, this paper applies the MMS (in the variant of the Navy) to a quantitative analysis of the problem of the decline of American hegemony and the redistribution of power between the great powers. Let us briefly characterize the problem field. Many experts interpret the current stage of world politics as a process of growing conflicts at all levels, including between great powers, in particular the United States and China [Barabanov et al. 2018]. The growing uncertainty in relations between the great powers makes it relevant to assess the resources they have in dynamics. A number of classic works by neorealists, neoliberals, and proponents of the world-system approach connect the issue of conflict in world politics from different angles with the issue of the role of the hegemon supporting the world order.

[Keohane 1984, 1982; Gilpin 1996, 1988; Arrighi 1994, 2007; Modelski 1987, 1996].

The decline of American hegemony under the administration of D. Trump and its connection with the growth of instability in key regions of the world have become the subject of extensive discussion from theoretical and ideological positions (for example, see below).

[Shapiro 2018; Barabanov et al. 2018]).

To build models, it is necessary to answer the question: what are the criteria for world leadership? In the literature on the theory of international relations, it is understood, first of all, as “hegemony”. We can conditionally distinguish three directions, each of which sets a set of criteria for hegemony and/or leadership: neoliberalism, neorealism, “world-system theory”.

The neoliberal theory of international relations highlights the ability of the hegemonic state to maintain stability in the world and thereby realize not only its own interests, but also the interests of small and medium-sized states [Kindleberger 1986]. From this point of view, as R. Kohane has shown, the hegemon offers stability in a certain conditional “market” of demand for international regimes [Keohane 1982, 1984]. Therefore, the hegemon should dominate, first of all, in the socio-economic and monetary and financial spheres and in world trade. Neorealists [Gilpin 1996, 1988; Webb, Krasner 1989] include an indicator of the hegemon's military strength in the analysis. The world system interpretation of hegemony connects it with a complex of processes caused by the cycles of world economic growth, social and scientific and technological development [Wallerstein 2001; Braudel 1967; Arrighi 1994, 2007; Modelski 1987, 1996], i.e. indicators of the development of society, science and technology play an important role in its maintenance.

In this article, we include in the concept of the power of states indicators that allow us to assess their positions in the socio-economic, monetary and financial spheres, in world trade, in the military sphere, as well as in the areas of science and technology development. This problem is extremely complex, and MMS is optimal for its solution.

Within the framework of mathematical models traditionally used in the study of international relations, the analysis of the structure is easily carried out only for simple variants, when the set is described by two indicators, and its element can be placed on the XOY plane. The visibility of the location of the elements ensures the convenience of analysis, so this approach is used quite often. However, all advantages are lost when the desire for a more diverse description makes it necessary to increase the number of indicators.

The use of the mathematical method of visualization of multidimensional structures (VMS) by V.M. helps to approach the solution of this problem. Sergeev [Sergeyev et al. 1995] - one of the first variants of MMS, which began to be used in domestic social sciences. The essence of the method is to arrange elements on the plane that are actually related to each other in a multidimensional space, so that the forced distortion of distances is minimal in total. Such a transition from multidimensionality to a plane correlates multidimensional and two-dimensional structures. In this case, the real distances will certainly be changed, but the main thing that can be conveyed in the configuration is symmetry and equidistance from the imaginary center. This is what makes it possible to make an assessment of the grouping of the elements under consideration.

The problem of choosing from the interval 2002-2017. years, for which it was necessary to build flat models of multidimensional structures, was solved as follows. In previous works, we have described and tested a predictive analytical method for constructing scenarios for the development of the global economic and political situation [Artyushkin 2007, 2010]. The method is based on a mathematical model that describes the dynamics of demand growth in the world oil market. This indicator gives good retrospective and predictive results of the dynamics of the world economy: its use made it possible to clarify and explain the dynamics of the world economy in the interval of 2002-2017. In this interval in 2004 and 2013. local maxima were reached, and in 2009 and 2016 local minima. Moreover, in 2016, the crisis, which manifested itself in a slowdown in global economic growth, was mild, so most experts perceived it as a protracted stagnation. For these four extremes, structural models were built (see Fig. I-4 in Appendix I I).

For the convenience of comparing schemes from different years, the scales along the X and Y axes were chosen to be the same, and the resulting structures were rotated so that the link of the most remote countries coincided with the horizontal direction.

Data sources: The problem of choice

In the proposed work, the state of the world system in the interval 2002-2017 analyzed using statistics provided on the World Bank website²

Within the framework of mathematical models traditionally used in the study of international relations, the analysis of the structure is easily carried out only for simple variants, when the set is described by two indicators, and its element can be placed on the X0Y plane. The visibility of the location of the elements ensures the convenience of analysis, so this approach is used quite often. However, all advantages are lost when the desire for a more diverse description makes it necessary to increase the number of indicators. The choice of the statistical site was due to the fact that the statistics collected by the World Bank meet the requirements for completeness and accuracy. As a result of the selection based on the analysis of literature on hegemony, the following eight indicators were selected for analysis:

- GDP per capita, PPP (constant 2011 international dollars)³ ;
- military expenditures (% of GDP) ⁴ . This indicator can be called "military effort", and it is completely independent of the value of GDP;
- total reserves (including gold, in USD) ⁵ ;
- exports of goods and services (in USD) ⁶ ;
- foreign direct investment, net inflow (in % of GDP)⁷ ;
- population in urban agglomerations where more than 1 million people (% of the total population)⁸
- articles in scientific and technical journals⁹ ;
- Patent applications, residents¹⁰.

The choice of countries is also an important task. Obviously, the group of leading countries cannot be narrowed down to the size of the "Group of 7", since this group includes only key US allies and, with the exception of Japan, is Western-centric. However, it makes no sense to consider the entire set of states as leaders. Therefore, the "Group of 20" (twenty largest economies of the world) was chosen, which, along with the countries of the "Group of 7", includes key developing states, leading countries of the non-Western world, such as China, Russia and India, etc. The G20 represents 85% of world GDP, 75% of world trade and two-thirds of the world's population.

The EU is excluded from consideration within the framework of the “Group of 20”, since otherwise there will be a duplication of the data of the states that are currently members of the EU – Germany, France, Italy, Spain (and for the considered time frame, the UK). Also, the EU (despite having a common defense and security policy and a common foreign policy) still cannot be considered as a “great power”. So, 19 states are considered, ranked below in the Latin alphabet: Argentina (marking in the figures - *ARG*), Australia (*AUS*), Brazil (*BRA*), Canada (*CAN*), China (*CHN*), Germany (*DEU*), Spain (*ESP*), France (*FRA*), United Kingdom (*GBR*), India (*IND*), Indonesia (*IDN*), Italy (*ITA*), Japan (*JPN*), South Korea (*KOR*), Mexico (*MEX*), Russia (*RUS*), South Africa (*ZAF*), Saudi Arabia (*SAU*), Turkey (*TUR*), USA (*USA*).

Methodologically, it is interesting to note that initially the calculations were made for a group of 14 countries: Argentina, Brazil, China, Germany, Spain, France, Great Britain, India, Italy, Japan, Mexico, Russia, Turkey, and the USA. At the same time, the configuration of global leadership obtained in the calculations of 14 and 19 states has not changed! Thus, adding or subtracting the number of states does not change the resulting configuration, which indicates a rather high rigor of the method. It should be noted that the corresponding configuration does not change even with the exclusion or addition of a number of states. This is logical given that the share of states such as South Africa, Indonesia, etc. is small in terms of the considered indicators in comparison with those countries that are at the top of the list. The configuration of global leadership changes only when obvious leaders, such as the United States and China, are eliminated. However, the configuration of “second order” leaders is somewhat more sensitive to changes in the list of states, which is logical given that the gap between “second order” leaders and the bulk of states is, as a rule, small. In particular, when calculating for 14 states, Russia acts as one of the possible leaders of the "second order", but when Saudi Arabia is included in the calculations (list of 19), this place is occupied by the last one. This is quite logical, given that this state is similar in economic specialization, but has a slightly better position in the raw materials market, large foreign exchange reserves, as well as a higher indicator of military spending relative to GDP (in 2016).

To work correctly with indicators that have a significantly different scale, it is necessary to recalculate them into index values. We did it in the following way. The values of the indicator were divided by its largest value in our statistical series, and all recalculated values were in the range from 0 to 1. Then, for convenience, we multiplied them by 1,000 and rounded up to a whole number. As a result, the values of the indicators were normalized on a scale from 0 to 1,000, i.e. all were shown at the same scale.

See Appendix I on the journal's website <https://www.politstudies.ru/> in the "Journal Archive" section – one 2021 – No. 2. Artyushkin V.F., Kazantsev A.A., Sergeev V.M. The balance of power among the great powers in the "Group of 20": analysis using the method of multidimensional scaling.

2 See the methodology for defining categories and collecting statistical material on the World Bank website. URL: <https://data.worldbank.org/indicator> (accessed 09/15/2019).

3 GDP per capita is calculated on the basis of purchasing power parity (PPP). PPP GDP is gross domestic product converted to international dollars using purchasing power parity rates. The international dollar has the same purchasing power relative to GDP as the US dollar has in the US. GDP at purchasers' prices is the sum of the gross value added of all resident producers in the economy, plus any taxes on products, and minus any subsidies not included in the price of products. It is calculated without deductions for the depreciation of fabricated assets or for the depletion and degradation of natural resources. Data are in constant 2011 international dollars.

4 The amount of military spending, according to SIPRI, is calculated according to the NATO methodology. Are summed up all current and capital expenditures on the armed forces, including peacekeeping forces; ministries of defense and other government agencies involved in defense projects; paramilitary forces if they are 130 considered trained and equipped for military operations; and military space activities. Expenses for military and civilian personnel are taken into account, including pensions for military personnel and social services for personnel; operations and maintenance; purchases; military research and development; and military aid (in the military spending of the donor country). Does not include civil defense spending and current spending on previous military activities, such as veterans' benefits, demobilization, conversion, and weapons destruction. However, we emphasize once again that this technique is not applied to all countries.

5 General reserves include monetary gold reserves, special drawing rights, IMF member reserves held by the IMF, and foreign exchange holdings controlled by financial institutions. The gold component of the reserves is valued at annual (December 31) London prices. Data are given in US dollars.

6 Exports of goods and services include all transactions between residents of a country and the rest of the world involving the transfer of ownership from residents to non-residents of general goods, net exports of goods under merchanting, non-monetary gold and services. Data are given in current US dollars.

7 Foreign direct investment is the net inflow of investment to acquire a substantial shareholding (10% or more of voting shares) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvested earnings, other long-term capital, and short-term capital. Net inflow (new investment inflow minus disinvestment) is divided by GDP.

8 The population in metropolitan areas of more than 1 million people is the percentage of the country's eight population living in metropolitan areas with more than one million people in 2018.

9 Science and technology journal articles refer to scientific and engineering articles published in the following disciplines: physics, biology, chemistry, mathematics, clinical medicine, biomedical research, engineering and technology, and earth and space sciences.

10 Patent applications are worldwide patent applications filed under the Patent Cooperation Treaty procedure or with a national patent office to obtain exclusive rights to an invention - a product or process that provides a new way of doing something or proposes a new technical solution to the problem. A patent provides protection for the invention to the patent owner for a limited period of time, typically 20 years.

Interpretation of the obtained visualization model of leadership

The semantic interpretation in the models obtained by the Navy method is subject to the general configuration of the powers; compression or increase in intervals in groups and allocation of leaders (hegemons). Visually, the leaders are seen as the countries furthest from the cluster group.

The dynamics of the models shows the correctness of the interpretation of the world-system theories that link the issue of the change of hegemon in world politics with the cycles of economic development. The following regularity is clearly fixed in it. During the periods of local maxima of the world economy (2004, 2013), the distances between the powers are “expanded”, which, in particular, can be seen in the analysis of the model structure of 2004 (see Fig. 1). At the local minima of the world economy (2009, 2016), a group of states “compresses” and the positions of the leader(s) stand out more clearly relative to the bulk. At the same time, the situation of a decline, a local minimum, is also the possibility of overtaking the leader (hegemon) by one of the “second order” leaders. Thus, during the crisis of 2009, China jumped ahead sharply (in 2004 it looked rather ordinary against the general background), then in 2013 and 2016 its leadership positions were consolidated.

Let us consider in more detail the models of structures for each of the periods. In 2004 (see Figure 1), the US is still the undisputed hegemon. Japan and Germany are closest to the position of an alternative leader. Against the backdrop of a favorable economic situation, the distances in the group of the middle peasants are relatively large, the countries do not visually “overlap” each other. China occupies a separate position from the “middle peasants” group, but it is not privileged. It is also interesting to note that in the conditions of high prices for raw materials, a special position - from above - is occupied by two resource-based economies characterized by a relatively high standard of living - Saudi Arabia and Australia.

In 2009 (see Fig. 2) the situation is changing. There is a gradual interception of leadership from the United States by China. Under the influence of a serious economic crisis, the group of powers “shrank”, the distances between them decreased. Japan, Germany stand out somewhat from the general mass of powers, but they have lost the status of possible alternative leaders to the United States. Saudi Arabia also retains its special position due to a number of indicators related to raw materials and finance.

In 2013 (see Chart 3), China's position continues to look preferable to that of the United States. The economic situation is favourable: the distances in the group of powers are again relatively large, they cease to “overlap” each other so strongly. The visualization shows that China weathered the crisis better than anyone else and pulled slightly ahead in the race for leadership. Japan, Germany, Great Britain, Saudi Arabia and India stand out from the general mass of “middle peasants”.

In 2016 (see Fig. 4), China's leadership in terms of the parameters chosen for analysis is already obvious. According to the selected quantitative parameters, the United States “slid” into the role of an alternative candidate for leadership. Under the influence of economic stagnation, the group of powers “shrank” again, the distances between them decreased. Germany, Great Britain, Japan and Saudi Arabia now stand out from the group of powers along a small circle.

The most quantitatively obvious in calculations with 14 and 19 states is the global leadership associated with the positions of the US and China. “Second order” leadership is very unstable and changes from year to year, as well as due to the change in the number of states. Strictly speaking, this is an almost equal competition of a large number of powers for the position of possible “alternative leaders” and is a situation of “multipolarity”, when many states can claim the role of leader under certain conditions and taking into account certain parameters. From another theoretical perspective, this situation can be described as “uncertainty,” since with the exclusion of the United States and China, a stable leader does not emerge.

Among the powers that demonstrate the potential for “second order” leadership in the calculation for 19 states, one can single out Japan, Germany, Great Britain, and Saudi Arabia. When calculating for 14 powers, Russia and India are also singled out.

Change of Hegemon or formation of Multipolar world?

How to interpret our model? What will this lead to in terms of global governance? The question of the possibility of the PRC taking the role of a new global hegemon has already been raised in the literature of a world of a systemic nature [Arrighi 2007], and is being studied by sinologists [Denisov 2015; Lukin 2016] and experts in the economic aspects of international relations [Arapova 2018]. What awaits us: a change of hegemon or “multipolarity”? Which of these options seems to be the most realistic? As quantitative analysis has shown, the United States continues to lead, or close to leading, on many key indicators. If we consider the situation wider than the limited set of indicators that was analyzed (i.e., if we take into account the shortcomings of the research compromises we made), then among the “pluses” we must indicate: the dominance in the field of a number of critical new technologies (primarily ICT); the continuing role of the dollar as the main reserve currency; accumulated experience of hegemony; a system of military-political alliances covering key regions of the world; the presence of military bases around the world; technological equipment of the army, etc. The key “minus” is the loss of the status of the largest economy in the world. According to the IMF, the US GDP for 2018 was 15.16% of global GDP at PPP, while China’s was 18.69% of global GDP at PPP¹². Added to this is a significant public debt; the rising cost of maintaining hegemonic stability; problems in domestic politics and the declining willingness of the United States and its closest allies to bear the costs of maintaining hegemonic stability around the world (as demonstrated by Trump's policies and the rise of populism in many NATO countries).

¹¹ See Appendix 2 on the journal's website <https://www.politstudies.ru/> in the “Journal Archive” section – 2021 – No. 2. Artyushkin V.F., Kazantsev A.A., Sergeev V.M. The balance of power among the great powers in the “Group of 20”: analysis using the method of multidimensional scaling.

¹² IMF World Economic and Financial Surveys. World Economic Outlook Database. URL: <https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/weorept.aspx?sy> (accessed 09/15/2019).

Obviously, China will not be able to replace the US as the global economic hegemon in the foreseeable historical future. GDP per capita in China (in 2010 dollars) in 2018 was 14.2% of the corresponding figure in the United States¹³. The capacity of the domestic consumer market in China is not yet sufficient to be one of the main “motors” of global economic growth (namely, this role has been played and continues to be played by the United States). Despite the “catching up” breakthrough in many indicators (for example, Beidou geolocation satellites

Thus, our analysis shows (even taking into account the limitations associated with research compromises) that it is objectively difficult for the United States in many quantitative parameters to effectively exercise its hegemony in the world, but China is not yet able to replace them (primarily in terms of qualitative parameters). [Gilpin 1996, 1988]. In this case, we will return to the situation of the “bipolar world” at a new level.

In this situation, there are two alternatives. The first is the transition to a “multi-polar system” of global governance, for example, based on the “Group of 20”. As a matter of fact, the very changeable configuration of leadership that all the key states of the world, except for the USA and China, demonstrate in our calculations, shows a possible trend towards “multipolarity”, based on the fact that no one (except for the two leaders) has a serious advantage over others. .

The second alternative has to do with relations between the US and China. In the event that the United States attempts to maintain its position, and Beijing is active in terms of challenging it, it is quite likely that a global struggle for hegemony between China and the United States will begin along the lines analyzed by R.G. Gilpin already more than GPS satellites, Kirin processors and Huawei phones are almost as good as their American counterparts) China is not yet the world leader in the creation of new key technologies, moreover, in a number of indicators it is clearly dependent on Western technologies. In the next ten years, China will not be able to become a new military hegemon either. China is rapidly catching up in military technology with the two “old” military superpowers (USA and Russia). However, for the status of a global military hegemon, it is also necessary to be able to project its military power to any part of the world. The Chinese army has never done this in practice, although a shift in this direction is gradually taking place.

Conclusion

The conducted research shows that during periods of local maxima of the world economy (2004, 2013) there is an “expansion” of distances between powers, leaders of the “second level” stand out from the general mass of states, which can challenge the main leader. At the local minima of the world economy (2009, 2016), a group of states “compresses” and the positions of a leader or a pair of competing leaders stand out more clearly relative to the bulk. The situation of an economic downturn also makes it possible for one of the states to overtake the hegemon (as happened in the US-China pair in 2009).

A quantitative analysis of world leadership profiles shows that the United States (compared to China) still has the most comprehensive profile, including all possible indicators. China also has a pronounced leadership profile associated with accelerated (largely catching up) economic and scientific and technological development. At the same time, in terms of the development of the social structure and in military terms, the PRC is clearly lagging behind.

On the basis of the study, it can be concluded that in terms of quantitative indicators, the United States is difficult to effectively exercise hegemony in the world, but China, in terms of qualitative indicators, is not able to replace them for a long time. In this situation, the most desirable scenario from the point of view of global economic stability is the emergence of a “multipolar world” with harmonious interaction between world leaders, and the least desirable scenario is a “hegemonic war” between China and the United States.

From a methodological point of view, it is interesting to note that the configuration of global leadership (i.e., the relationship between the USA and China) does not change when one or another state is excluded or added to the calculations, with the exception of the USA and China themselves. Finally, the analysis made it possible to single out two levels of the race for leadership: the struggle for absolute leadership (leadership of the “first level”) and the struggle for leadership of the “second level”. Japan, Germany, Great Britain and Saudi Arabia are at the second level when calculating from 19 states, and when calculating for 14 states, Russia (instead of Saudi Arabia) and India are added to them. At the same time, the positions of leadership of the “second level” are very variable both over the years, and when calculating with the addition or subtraction of one or another state, which indicates that if the United States and China are excluded from the calculations, then “multipolarity” has developed in the modern world, i.e. .e. approximate proximity in terms of potentials of a large number of states.

Abstract

This article applies a method of multidimensional scaling (visualization of multi-dimensional structures) to studying different dimensions of power competition between the great states. On the basis of analysis of the Neo-Realist, Neo-Liberal, and World-systems theory literature on global hegemony, 8 criteria of global leadership were defined: GDP per capita (PPP), military expenditure (% of GDP), amount of currency reserves (including gold), exports of goods and services, direct foreign investments, population size in urban agglomerations with more than one million people (% of total population), articles in peer-reviewed scholarly journals, and patent applications. A group of 19 states of the G-20 (excluding the EU) was selected for comparative analysis. Four models visualizing positions of 19 countries according to 8 dimensions were created: for 2004, 2009, 2013, and 2016. These results were compared to the results of calculation including 14 countries: Argentine, Brazil, China, Germany, Spain, France, Great Britain, India, Italy, Japan, Mexico, Russia, Turkey, and the USA.

Using mathematical methods of analysis, as traditionally applied in IR literature, turns the making of such models into a very complicated task. Therefore, the mathematical method of the visualization of multi-dimensional structures developed by Russian scholars was applied to this task. The models demonstrate that China's positions sharply increased in 2009 and since that time China has started to slowly replace USA as an absolute leader. However, if we analyze leadership within specific categories included into our model, the USA still hold leading (or close to leading) positions according to the majority of parameters, while China has a strictly defined profile of leadership connected to its accelerated economic and technical development . However, China is still far from leadership, from the point of view of the development of social structures and even regarding the military dimension.

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RAJIV GANDHI
INSTITUTE FOR CONTEMPORARY STUDIES

Rajiv Gandhi Institute for Contemporary Studies

Jawahar Bhawan,
Dr Rajendra Prasad Road,
New Delhi 110 001
India

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