2024	World	Russia	World share	Int coll	% int coll
January	232753	3282	1,4 %	1210	37 %
February	174315	2768	1,6 %	942	34 %
March	168852	2128	1,3 %	901	42 %
April	152238	2274	1,5 %	770	34 %
May	156371	2036	1,3 %	774	38 %
June	141463	2045	1,4 %	756	37 %

2022	World	Russia	World share	Int coll	% int coll
January	307808	6265	2,0 %	2302	37 %
February	186007	4142	2,2 %	1762	43 %
March	196883	3497	1,8 %	1651	47 %
April	177201	3486	2,0 %	1450	42 %
May	183482	3187	1,7 %	1362	43 %
June	171297	3489	2,0 %	1305	37 %

Gunnar Sivertsen, with Lin Zhang, Zhe Cao, & Dmitry Kochetkov:

The influence of geopolitics on research activity and international collaboration in science

NIFU

Overview

- Two different media stories
- What happened to Russian science?
- The value of global collaboration in science
- Fifty years of globalization of science
- RIC: a bibliometric indicator of the Relative Intensity of Collaboration in science

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- **Two different media stories**
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Times Higher Education, July 31, 2024

Russian research ‘increasingly isolated’ amid Ukraine war

More scientists only producing domestic work after collapse in collaborations with US and Europe and Chinese links remaining static

July 31, 2024

Patrick Jack

Twitter: @paddywjack

Russia’s war in Ukraine has triggered a collapse in its international research collaborations, as data shows that China has become the main partner of the country’s increasingly isolated scientific community.

Source: ALEXANDER NEMENOV/AFP/Getty Images

In 2021, 10.1 per cent of Russia’s total research output was conducted in collaboration with the US, and 10 per cent with Germany – its two largest partners at the time.

But this had fallen to just 6.7 per cent and 5.4 per cent, respectively, by 2023, while it also saw a decrease in output produced alongside the UK, Italy, France and many others, figures from Clarivate’s annual G20 scorecard show.

In contrast, the figures, compiled by analysts and data scientists at the Institute for Scientific Information (ISI), show that Russian collaborations with China rose from 7.1 per cent in 2021 to 7.7 per cent in 2022.

Although this dipped to 7.4 per cent in 2023, it means that China has overtaken the US and Germany to become Russia’s leading research partner.

The journalist contacted us two weeks earlier

Hello,

I came across some recent figures from Clarivate which suggest that Russian research collaborations were declining across 2022 a

I saw that you all recently published some data on this issue – do you have any more data/ insight you could send over now?

Thanks,
Patrick

Patrick Jack (he/him)
Data Reporter
THE (Times Higher Education)

Mob +44 (0) 7510080752
W: www.timeshighereducation.com

26 Red Lion Square
London
WC1R 4HQ

He had seen our LSE Blog

Lin Zhang

Zhe Cao

Gunnar Sivertsen

Dmitry Kochetkov

May 29th, 2024

Has war in Ukraine isolated Russian science?

0 comments | 11 shares

Estimated reading time: 6 minutes

11 Shares

Drawing on new data, **Lin Zhang, Zhe Cao, Gunnar Sivertsen,** *and* **Dmitry Kochetkov** *explore how the conflict in Ukraine has changed Russian science and how international sanctions have played a minor role compared to domestic politics in isolating Russian scientists.*

Does geopolitics influence science? Following the outbreak of war in Ukraine, many international scientific agreements between Russia and Western countries were terminated, including those related to the use of scientific infrastructure. However, most Western countries and universities have not limited partnerships at the individual level. Editors and publishers of scientific journals, with a few notable exceptions, also largely refused to follow the call to boycott the publications of Russian scientists.

This raises the question of the extent to which geopolitics has influenced international scientific cooperation with Russia. Contrary to popular perception, we found that the Russia-Ukraine war has not significantly affected long-term trends in international scientific collaboration with Russia. To test this we used a refined measurement of collaboration intensity and an indicator that measures the balance in the collaboration profile of a country over time.

We also expanded the general collaborative analysis by examining long-term trends and recent monthly changes in four different research fields using data from the Web of Science Core

Our bibliometric evidence

The share of the world's articles has clearly decreased

The degree of international collaboration only slightly decreased

2024	World	Russia	World share	Int coll	% int coll
January	232753	3282	1,4 %	1210	37 %
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The story was written against our evidence and based on Clarivate's annual *G20 Scorecard*

Russian research 'increasingly isolated' amid Ukraine war

More scientists only producing domestic work after collapse in collaborations with US and Europe and Chinese links remaining static

July 31, 2024

Patrick Jack

Twitter: @paddywjack

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Although this dipped to 7.4 per cent in 2023, it means that China has overtaken the US and Germany to become Russia's leading research partner.

THE published our different story in September

Is collaboration with Russia really declining? Our analysis suggests not

Recent figures suggesting growing Russian isolation doesn't tell the full story, say Lin Zhang, Zhe Cao, Gunnar Sivertsen and Dmitrii Kochetkov

September 15, 2024

Lin Zhang, Zhe Cao, Gunnar Sivertsen Dmitrii Kochetkov

Recent reports that Russia's war in Ukraine has "triggered a collapse in its international research collaborations" suggest that Russia's scientific community is increasingly isolated in the global space.

As a team of scientists who have studied research collaboration between Russia, Asia and Europe – regions from which we come – we suggest the statistics produced by Clarivate and reported by *Times Higher Education* tell a slightly different story.

Source: Mihrzn/iStock

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Our paper in *Scientometrics* in April 2024

Scientometrics
https://doi.org/10.1007/s11192-024-04984-7

The influence of geopolitics on research activity and international collaboration in science: the case of Russia

Lin Zhang[1,2,3] · Zhe Cao[1,2] · Gunnar Sivertsen[4] · Dmitry Kochetkov[5,6,7]

Received: 28 October 2023 / Accepted: 28 February 2024

Abstract
We study the possible influences of the Russia-Ukraine War on Russia's research productivity and international collaboration in science. For this purpose, we introduce and apply two recently developed indicators of relative intensity and balance in international collaboration. To see whether longitudinal trends have changed recently, we combine a long-term perspective based on annual updates since the year 2000 with a short-term perspective based on monthly updates since the beginning of 2022. The clearest change is that the productivity of Russian science, as measured within Web of Science, has dramatically decreased after several years of growth. There is also a clear decline in the degree of international collaboration in fields of research that heavily rely on large multinational infrastructures established through state agreements. In other fields, however, the degree of international collaboration is more stable. The general decline in Russian science seems to be more driven by internal factors than by loss of partnerships abroad.

Keywords Geopolitics · Russia-Ukraine war · Research activity · International collaboration

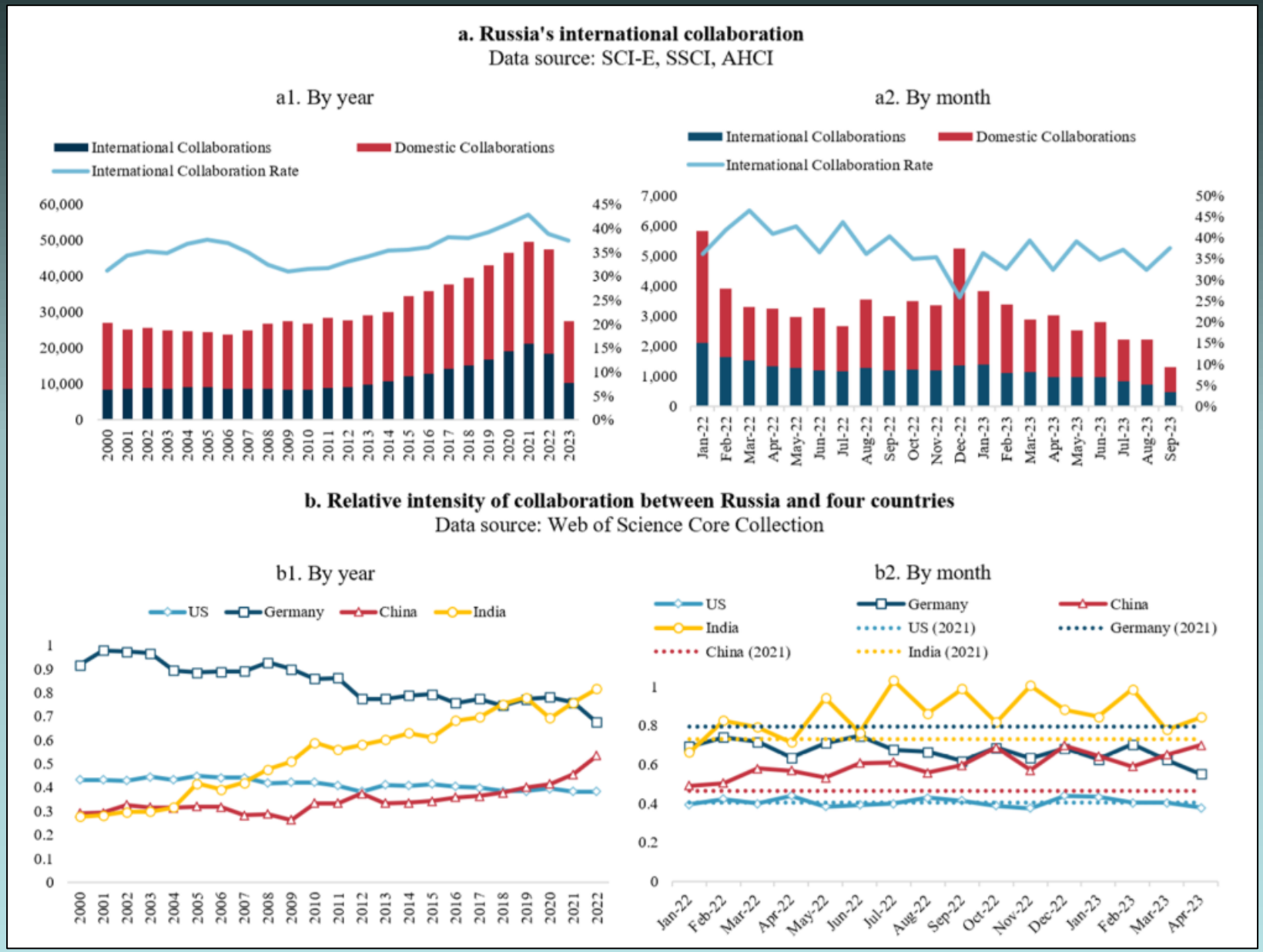
We study the possible influence of the Russia-Ukraine War on Russia's research productivity and international collaboration in science.

The clearest change is that the productivity of Russian science, as measured within Web of Science, has dramatically decreased after several years of growth.

The general decline in Russian science seems to be more driven by internal factors than by loss of partnerships abroad.

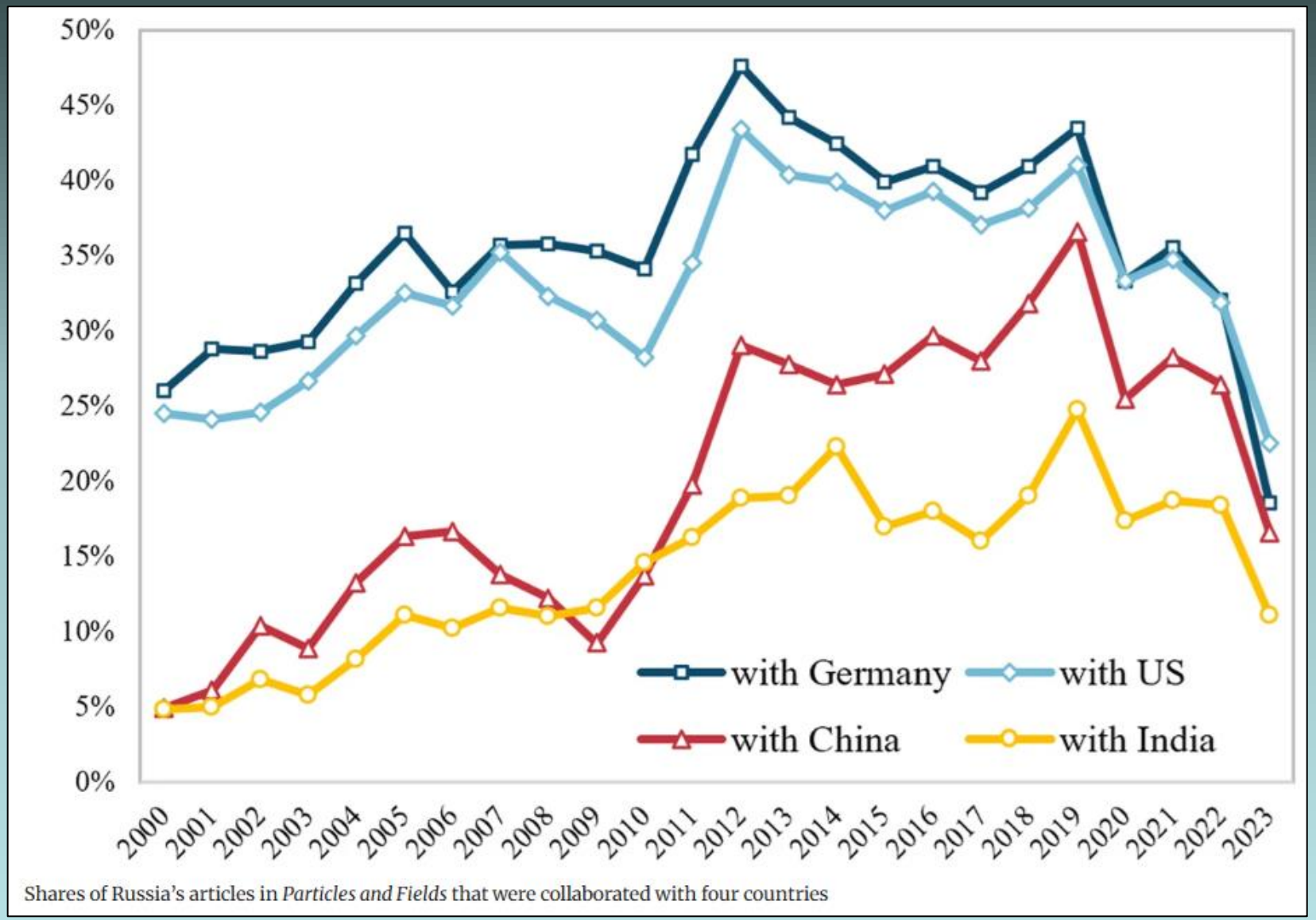
We needed relative indicators to detect this:

Degree of international collaboration and Relative Intensity of Collaboration



Exceptions in some areas of research:

Shares of Russia's articles with international collaboration in Particle and Nuclear Science



Shares of Russia's articles in *Particles and Fields* that were collaborated with four countries

Continued co-authorships with Russia could be explained by the wish to "leave no one behind" in global scientific communities

The resistance of the global scientific communities towards being steered by geopolitical conflicts seems to prevail even under high pressure.

The scientific communities themselves, however, have been more hesitant to stop collaboration, and most countries have decided not to intervene in contacts and collaboration between scientists on an individual basis, thereby reflecting the long-standing consensus in scientific communities worldwide that science should have no borders. This combination of political condemnation and continued support of scientific collaboration have occurred in the *Nature* and *Science* magazines. An editorial published on March 4, 2022 (Nature, 2022) expressed a strong condemnation of Russia and an explicit sympathy with Ukraine while at the same time supporting the plea of the InterAcademy Partnership (IAP, the main global alliance of academies of science) to "leave no one behind" in global science collaboration. *Nature* would "continue to consider manuscripts from researchers anywhere in the world". According to an article in *Science* a few days later on March 10, 2022, editors and publishers of scientific journals had largely refused the call of Ukrainian scientists to decline publishing manuscripts from Russian scientists (Brainard, 2022). The resistance of the global scientific communities towards being steered by geopolitical conflicts seems to prevail even under high pressure.

We also needed inside information to explain Russia's own decline

While our general hypothesis about continuing international collaboration is confirmed, we find an almost dramatic recent decrease in Russia's contributions to international scientific journals. This change may instead be explained by internal factors such as repression of academic freedom and academic diaspora, which have become a cause for concern in Russia (see, e.g., Yudkevich, 2023). A recent example that may illustrate this problem, is the Institute of the USA and Canada of the Russian Academy of Sciences (ISCRAN). On August 29, 2023, the director of the institute, Valery Garbuzov, published an article about the "imperial complexes" of Russia (Garbuzov, 2023). Already on September 1, the Ministry issued an order on his dismissal with the wording "at the initiative of the founder" (Plamenev, 2023). This case is not unique: the dismissal of a director without taking into account the opinions of employees also occurred at the Scientific and Technological Centre for Unique Instrumentation (STC UI RAS), Institute for Information Transmission Problems, and most recently at the Institute of Ethnology and Anthropology of the Russian Academy of Sciences. However, it is a topic for a separate study.

Explanations for the dramatic decline in Russia's scientific production:

- Departmental cutbacks
- Repression of academic freedom
- Brain drain of leading researchers.

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The term "research security" was recently introduced to policies for public science

ANALYSIS

Last update: October 21, 2024

Science: Why NATO is interested in research security

NATO is working on a new science strategy to better protect against the outflow of knowledge to China.

NATO spends millions on research and science and is increasingly concerned about information outflow to China. A new science strategy is intended to tackle the problem.

- Security policy has traditionally influenced science and science policy with systems for **export control** and **counterintelligence** in the **commercial R&D sector.**
- **Public science** is now affected as well after policies for ***research security*** (a new term in history) were introduced to science policy recently:
- In the USA in 2021 (*National Security Presidential Memorandum-33*, January 14th)
- In the European Union in 2024 (*COUNCIL RECOMMENDATION of 23 May 2024 on enhancing research security*)

But public knowledge is not created within a country. How can exhanges in publications and collaborations be controlled?

- *The phenomenon of scientific protectionism stems from the belief that new knowledge is generated within a country or region, and that it is important to control the knowledge exchange between countries and regions. … We understand scientific protectionism as the control of international scientific collaboration in order to prioritize national science (which could be a single country or a group of countries) and implement geopolitical strategies, often through restrictive measures.*

Lin Zhang, Zhe Cao, Gunnar Sivertsen, and myself. The advent of the era of scientific protectionism. (in Russ)

We collaborated across defence alliances …

Scientometrics
https://doi.org/10.1007/s11192-024-04984-7

Check for updates

The influence of geopolitics on research activity and international collaboration in science: the case of Russia

Lin Zhang[1,2,3] · Zhe Cao[1,2] · Gunnar Sivertsen[4] · Dmitry Kochetkov[5,6,7]

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Keywords Geopolitics · Russia-Ukraine war · Research activity · International collaboration

… and could publish the same evidence in Russia …

Наступление эры научного протекционизма

Геополитический кризис приведет к тому, что новые поколения ученых будут расти в атмосфере конфронтации

Лин Чжан, Чжэ Чао, Гуннар Сивертсен, Дмитрий Кочетков

31 июля 2024 года издание *Times Higher Education* опубликовало статью под названием «Российские исследования становятся все более изолированными на фоне конфликта в Украине» (*Russian research «increasingly isolated» amid Ukraine war*). Эта статья привлекла наше внимание, поскольку ее тематика совпадает с нашим собственным исследованием «Влияние геополитики на исследовательскую деятельность и международное сотрудничество в науке: на примере России» (*The Influence of Geopolitics on Research Activity and International Collaboration in Science: The Case of Russia*), которое 12 апреля 2024 года было опубликовано в журнале *Scientometrics*. Об этом исследовании мы писали ранее в статье в «НГ-науке»: Дмитрий Кочетков, «Как геополитика влияет на международное сотрудничество в научной сфере» (см. «НГ» от 22.11.23).

Учитывая, что наши выводы частично противоречат выводам, изложенным в статье в *Times Higher Education*, мы считаем важным поделиться нашей точкой зрения. Более того, проблема представляется нам более сложной, чем кажется на первый взгляд.

Наши данные показывают, что доля публикаций, выполненных в рамках международного сотрудничества, остается относительно стабильной с февраля 2022 года. Обновленные данные указывают на то, что тенденция сохранится и в 2024 году (таблицы 1 и 2). Тем не менее мы наблюдаем значительное снижение доли России в общем количестве публикаций в мире, что явно отличается от тенденций в других крупных странах.

Парадоксально – количество публикаций упало, но доля публикаций, выполненных в рамках международных коллабораций, осталась практически без изменений. Возможно, это свидетельствует о некотором адаптационном потенциале международного научного сотрудничества: научные сообщества лишь частично прекращают сотрудничество во времена санкций и геополитической напряженности. Это мнение выражено в нескольких официальных заявлениях, которые цитируются во введении к нашей статье в *Scientometrics*.

2022	Мир	Россия	Доля от общего количества статей в мире	Количество статей с международной коллаборацией	Доля статей с международной коллаборацией
Январь	307 796	6265	2,0%	2304	37%
Февраль	186 007	4142	2,2%	1762	43%
Март	196 882	3497	1,8%	1651	47%
Апрель	177 201	3486	2,0%w	1450	42%
Май	183 481	3187	1,7%	1363	43%
Июнь	171 297	3489	2,0%	1304	37%

2024	Мир	Россия	Доля от общего количества статей в мире	Количество статей с международной коллаборацией	Доля статей с международной коллаборацией
Январь	233386	3282	1,4%	1214	37%
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Апрель	154758	2274	1,5%	791	34%
Май	158105	2036	1,3%	775	38%
Июнь	140238	2045	1,5%	755	37%

Дата сбора статистики: 22.07.2024. Источник данных: Science Citation Index Expanded (SCI-E) – индекс цитирования по точным, естественным, медицинским и техническим наукам; Social Sciences Citation Index (SSCI) – индекс цитирования по социальным наукам; Arts & Humanities Citation Index (AHCI) – индекс цитирования по гуманитарным дисциплинам. Все эти индексы – составные части Web of Science Core Collection

Однако, как показано в нашем исследовании, есть существенные различия между научными областями. В социальных и гуманитарных дисциплинах сотрудничество может осуществляться без государственного финансирования, на основе личных отношений и индивидуальной инициативы (наш исследовательский проект является хорошим примером такого рода взаимодействия). И наоборот, естественные науки в большей степени зависят от крупной научной инфраструктуры и государственной поддержки, поэтому влияние геополитической напряженности в этой области может быть более выраженным.

Ниже мы попытались ответить на два вопроса, касающихся влияния текущего геополитического кризиса на развитие науки с национальной и глобальной точек зрения.

Как изоляция повлияет на исследовательскую экосистему страны?

Научная экосистема глобальна, но ресурсы и организации, проводящие исследования, в основном являются национальными. Наши результаты показывают уязвимость национальной системы. Научные знания до сих пор создавались совместно, несмотря на границы и оборонные альянсы, но есть признаки того, что ситуация меняется. Отметим, что помимо России наиболее очевидным изменением в научном сотрудничестве за последние годы стало ухудшение отношений в научной сфере между двумя крупнейшими научными державами – Китаем и США.

Какой ущерб текущая ситуация нанесет глобальной исследовательской системе?

Наука – это глобальное предприятие. **Нобелевский лауреат Константин Новоселов** утверждает, что «знания принадлежат человечеству так же, как воздух, которым мы дышим, океаны, по которым мы плаваем, и солнечный свет, которым мы наслаждаемся» (2003). Однако реальностью становится все большее число ограничений в международном научном сотрудничестве. Там, где совсем недавно мы наблюдали политику открытой науки, теперь политика безопасности и идея о том, что научное партнерство должно осуществляться в рамках оборонных альянсов.

Если это произойдет, то сильно изменит глобальную модель сотрудничества. Недавно, 19 июля 2024 года, в Джорджтаунском журнале международных отношений вышла статья «Использование научной дипломатии во время конфликтов» (*Leveraging Science Diplomacy in Times of Conflict*). Авторы высказывают опасения, что научный протекционизм угрожает инновациям, решению международных проблем и потенциалу научной дипломатии.

Феномен научного протекционизма основывается на вере в то, что новые знания создаются внутри страны или региона и что необходимо контролировать научный обмен между странами или регионами. «Научный протекционизм» – относительно новый термин, и какого-то устоявшегося определения на сегодняшний день нет. Мы понимаем его как государственный контроль над международным научным сотрудничеством с целью обеспечения приоритета национальной науки (это может быть как отдельная страна, так и объединение стран) и реализации геополитических стратегий, чаще всего с помощью ограничительных мер. В то же время научная дипломатия признает тот факт, что новые знания создаются учеными в разных странах и регионах, которые зависят от вклада друг друга. Благодаря научной дипломатии мы можем использовать международное научное сотрудничество для решения глобальных проблем человечества.

Возможный ущерб от нынешнего геополитического кризиса связан не только и не столько с количеством публикаций, сколько с тем фактом, что новые поколения ученых будут расти в атмосфере конфронтации. Мы уже видим изменения в международной мобильности и моделях сотрудничества среди студентов и молодых ученых. Мы хотели бы подчеркнуть, что такого уровня изоляции не было даже во времена холодной войны. Наука всегда выполняла миротворческую функцию, но в настоящее время возможности для научной дипломатии и обмена опытом стремительно сокращаются. ■

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… but we had to take care:
Two journalists edited our paper in *THE*. We asked for a few important amendments which they accepted

Recent reports that Russia's war in Ukraine has "triggered a collapse in its international research collaborations" suggests global science has **swiftly united in horror at Vladimir Putin's attack on a neighbour sovereign state.**

As a team of scientists who have studied research collaboration between Russia, Asia and Europe – regions from which we come - we suggest the statistics cited by *Times Higher Education* tell a slightly different story.

While it is true that the number of internationally-authored papers featuring a Russia-based researcher published in the first half of 2024 was roughly half of what is was two years earlier – 1,214 in January 2024 compared to 1,204 in January 2022, or 791 vs 1,451 in April 2022 and 2024 respectively – it is worth noting this likely relates to a massive drop in research outputs from Russia over the past two years.

For instance, while Russian researchers published 6,265 papers in Web of Science-indexed journals in January 2022, that number fell to 3,282 papers two years on.

As we reported in a *Scientometrics* paper published in April, the share of Russian-authored papers with an international author – which varied 37 per cent and 47 per cent in 2022 - has dipped only slightly **since the invasion took place**.

We wrote to the journalists: "Invasion" and "attack" should be replaced by "war" in three places. This is for the personal security of our Russian colleague. We chose the same solution for the paper that we published in April. We regard our message and evidence as strong enough.

The value of international collaboration was also our main point in the article

Fifty years ago, international scientific collaboration was mainly between member nations of NATO, but scientists nonetheless collaborated with colleagues in the Soviet Union despite the Cold War. Since then, science has grown and globalised tremendously. To expect science to realign current relationships with defence alliances would require a similarly enormous reset.

Many scientists will continue to resist such demands given their commitments to academic values of openness and co-creation of knowledge. However, a new generation of scientists growing up in a climate of confrontation may be less able to ignore political pressure to turn their back on potentially fruitful research partnerships that ultimately may benefit global science.

Lin Zhang is a full professor in the School of Information Management at Wuhan University, where Zhe Cao is a graduate student. Gunnar Sivertsen is a research professor at the Nordic Institute for Studies in Innovation, Research and Education in Oslo. Dmitry Kochetkov works at the Russian Academy of Sciences and RUDN University in Moscow while also being affiliated with Leiden University.

Now, let us turn to the long-term perspective

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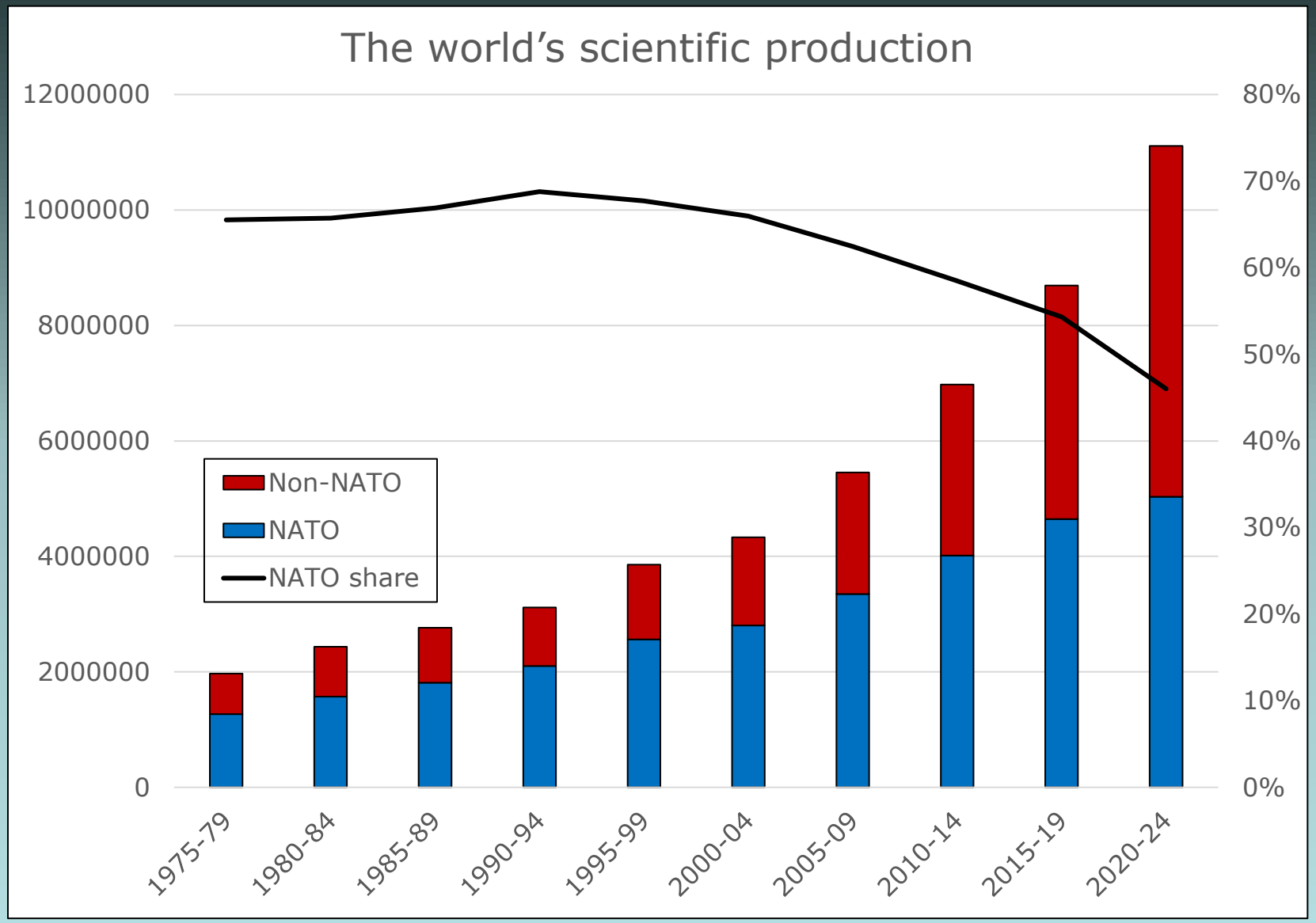
Overview

- Two different media stories
- What happened to Russian science?
- The value of global collaboration in science
- **Fifty years of globalization of science**
- RIC: a bibliometric indicator of the Relative Intensity of Collaboration in science

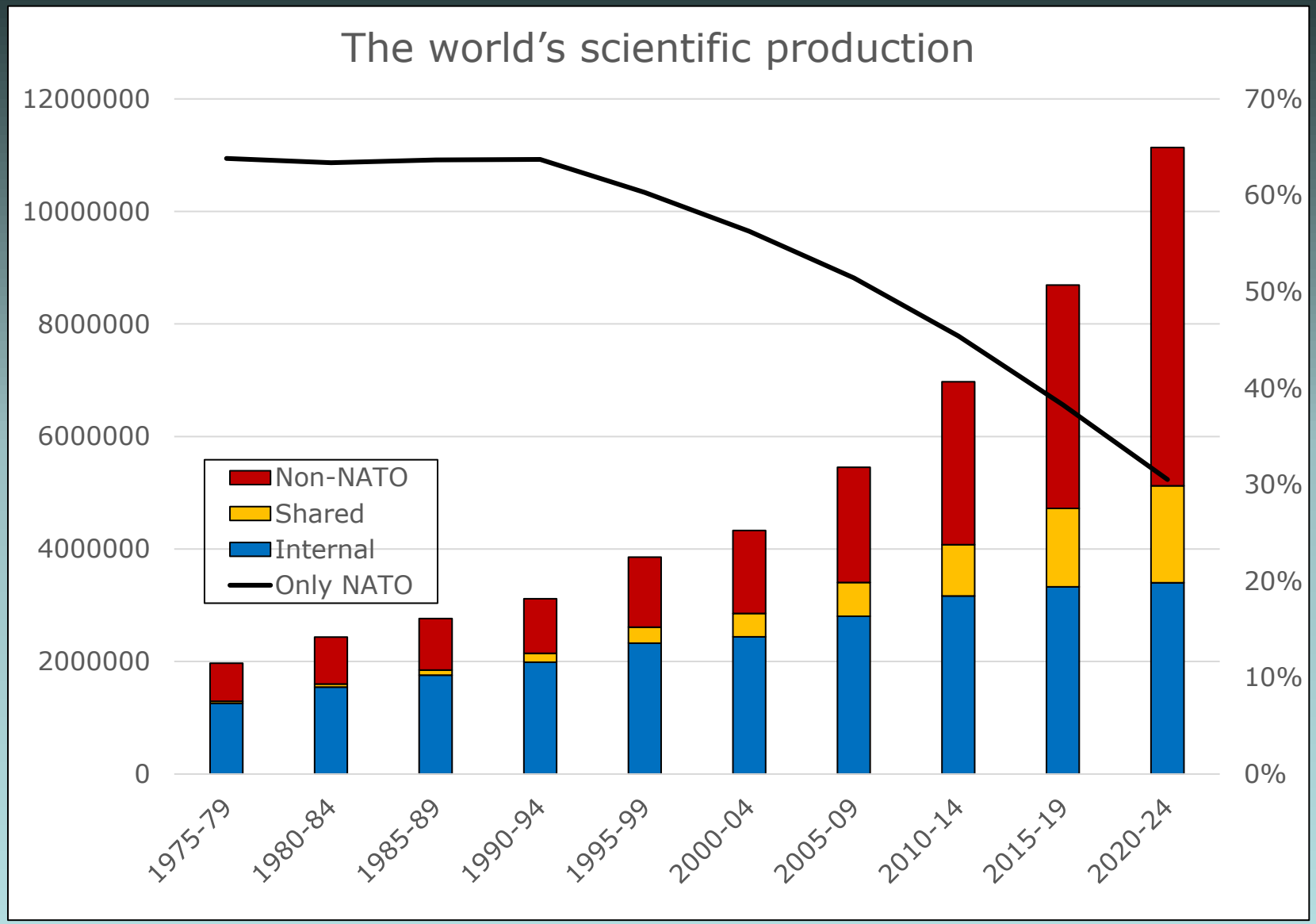
Globalization

NATO's share has decreased from 69 percent to 46 percent

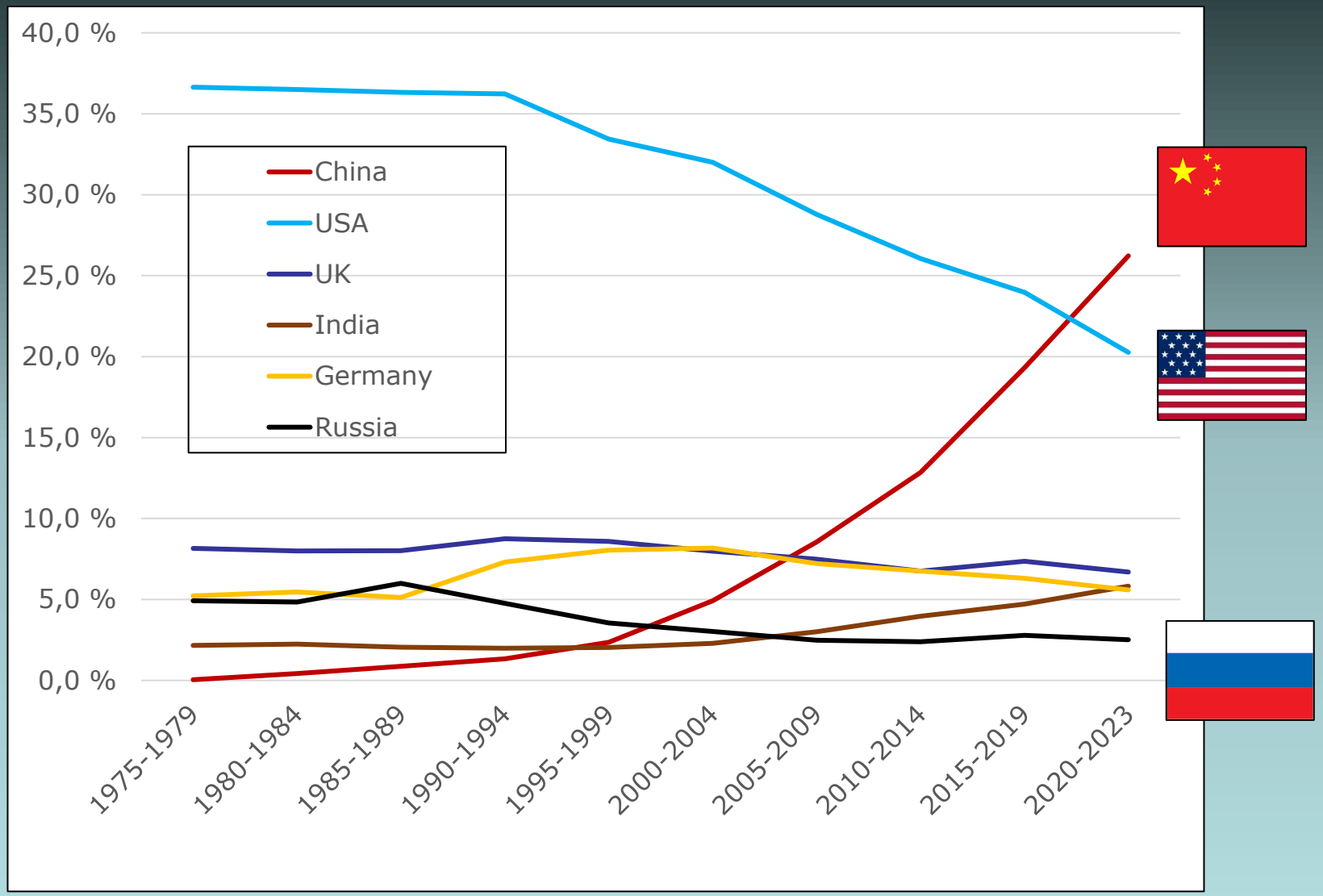


Globalization

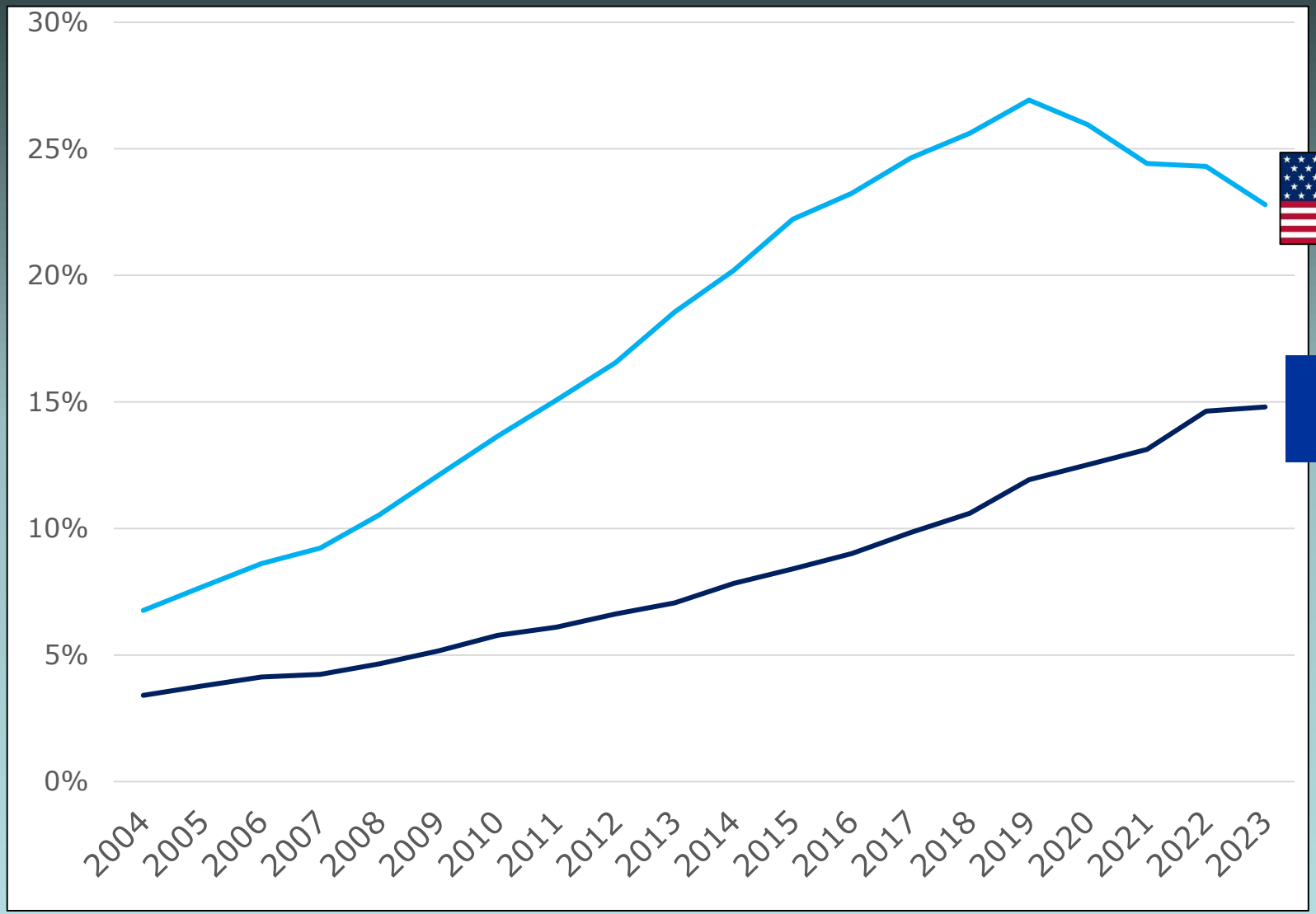
NATO's share has decreased from 65 percent to 31 percent if we only consider internal articles from within NATO



Shares in the world's production of articles



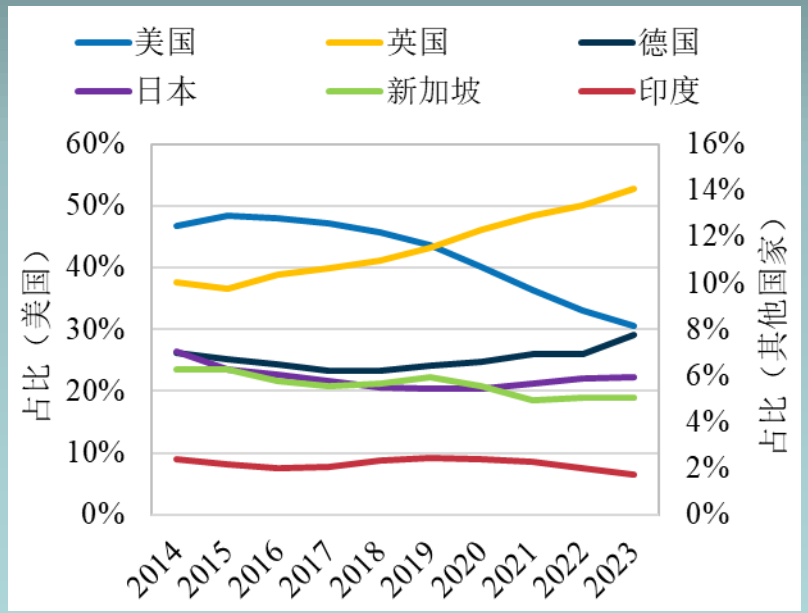
China’s share in the countries’ articles with international collaboration



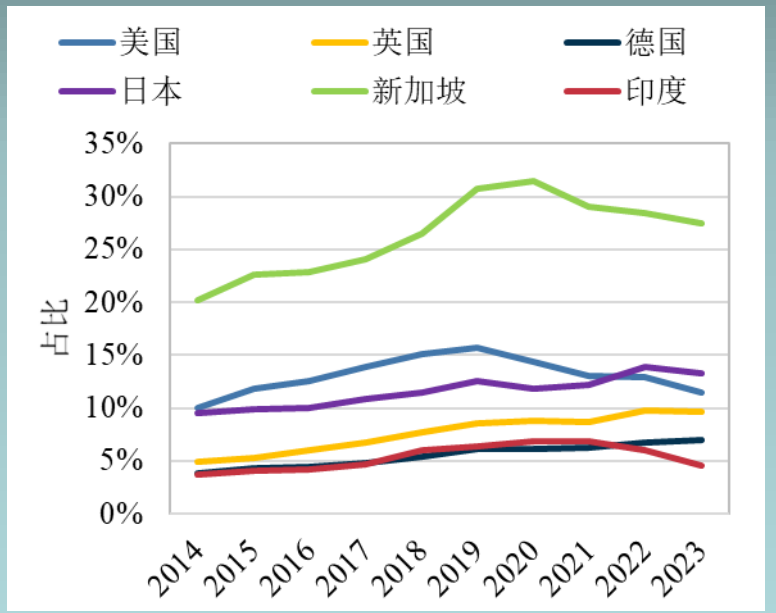
中国国家自然科学基金委员会资助成果的国际合作态势

基金委资助在代表性国家（**尤其是新**兴国家）**国**际合作产出方面贡献日益突出；**近年来，基金委**资助在推动中美合作方面作用有所减弱，**但中国同英国的合作持**续增强。

(a) 代表性国家在NSFC资助的中国国际合作论文中的占比



(b) 代表性国家国际合作论文中NSFC资助的论文占比

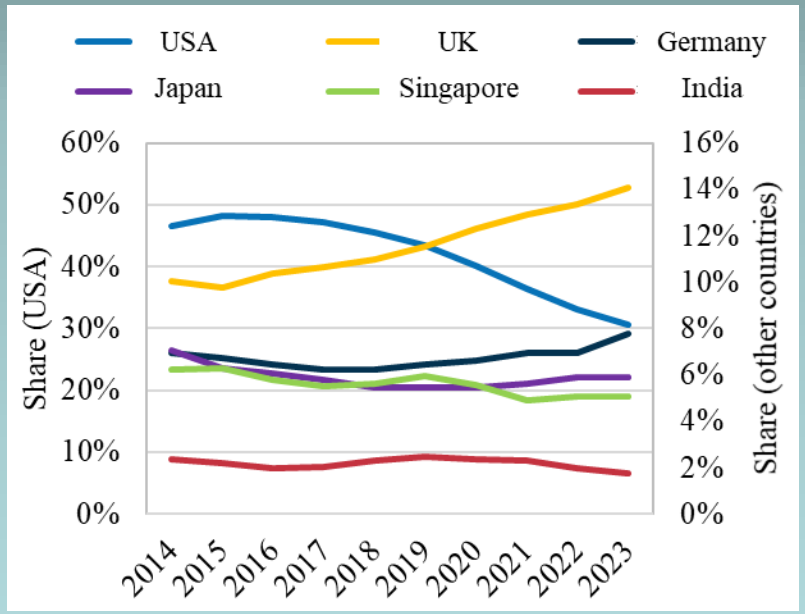


- 在NSFC资助的中国国际合作论文中，与美国的合作最为突出，但2018年以来下降趋势显著；与英国的合作持续增强。
- 在代表性国家的国际合作论文中，NSFC资助在新加坡的国际合作论文中占比尤为突出；近年来，NSFC资助在美国、新加坡、印度等国家的国际合作论文中占比出现不同程度的下降。

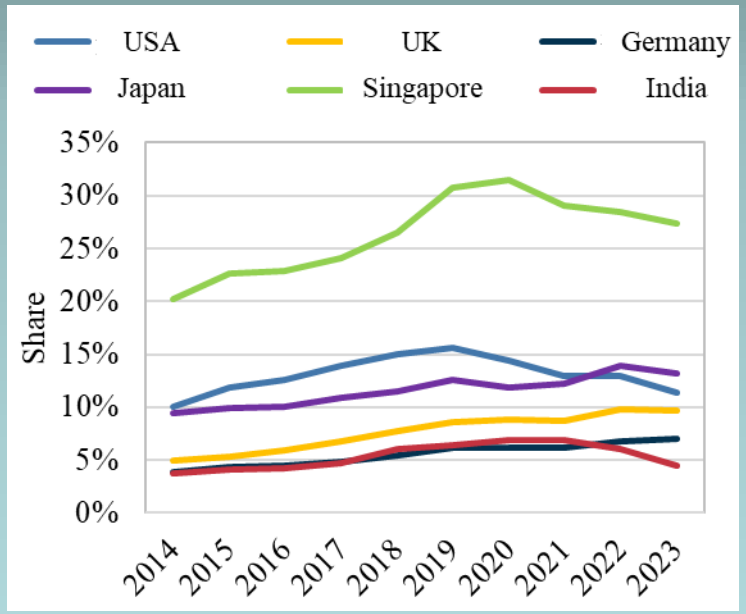
Trends of international collaboration funded by the National Natural Science Foundation of China (NSFC)

NSFC has increasingly contributed to international collaborative papers (ICPs) in selected countries, particularly emerging ones. In recent years, while the role of NSFC funding in promoting China-U.S. collaboration has somewhat diminished, collaboration between China and the UK has consistently strengthened.

(a) Share of ICPs from selected countries in the total of China's ICPs funded by NSFC



(b) Share of ICPs funded by NSFC in the total of ICPs from selected countries



- Among China's ICPs funded by NSFC, collaboration with the USA stands out prominently, albeit with a significant downward trend since 2018. Meanwhile, collaboration with the UK has been continuously strengthening.
- Among ICPs from selected countries, the share of papers funded by NSFC is particularly notable for Singapore. In recent years, the share of NSFC-funded papers in ICPs from countries such as the USA, Singapore and India has declined to varying degrees.

Overview

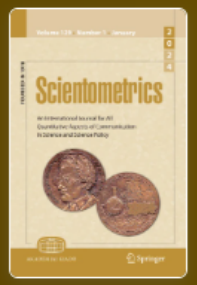
- Two different media stories
- What happened to Russian science?
- The value of global collaboration in science
- Fifty years of globalization of science
- **RIC: a bibliometric indicator of the Relative Intensity of Collaboration in science**

How to measure the relative intensity of collaboration while taking the activities in the whole network into account

Measuring the relative intensity of collaboration within a network

Published: 22 August 2021

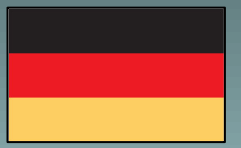
Volume 126, pages 8673–8682, (2021) Cite this article



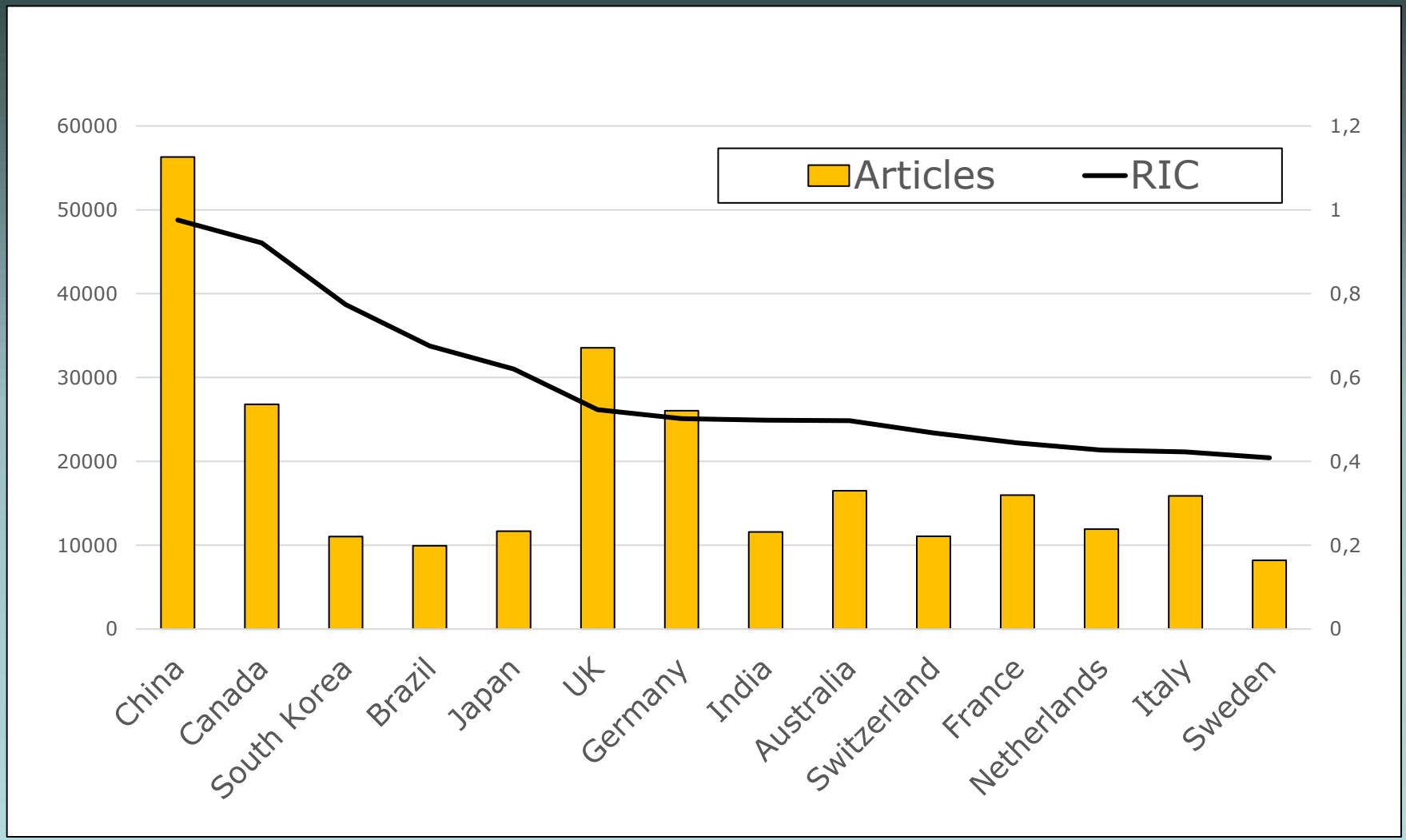
Joel Emanuel Fuchs, Gunnar Sivertsen & Ronald Rousseau

Abstract

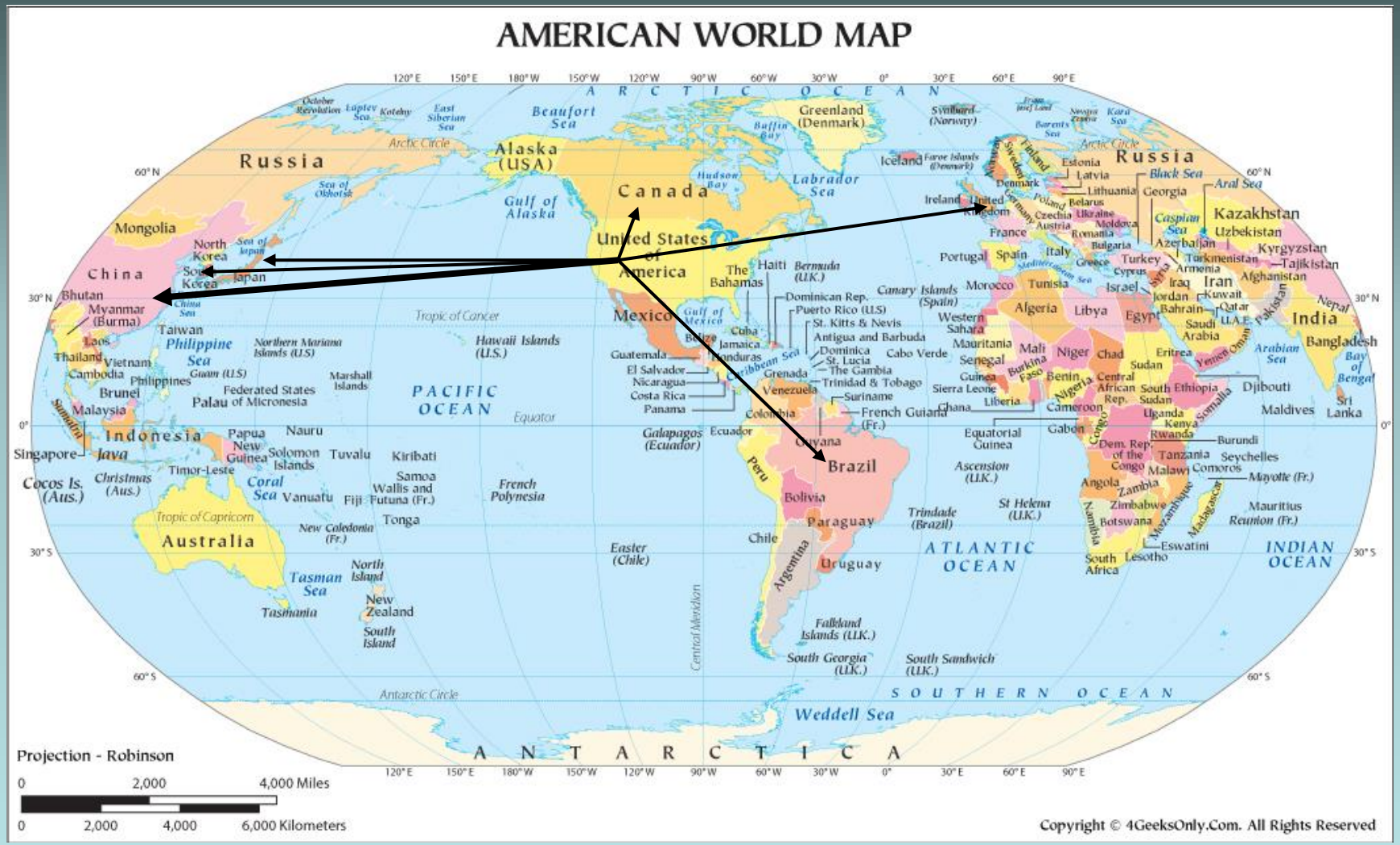
In research fields like informetrics or patent research, international comparisons are part of their core business. One class of measures used in such comparisons consists of affinity indices. Here, relations of shares are calculated to express the relation between two actors X and Y. Even though this group of affinity indices already has many members, we think that based on pure logic, they still miss the point. For this reason, we introduce the *RIC* index. This index compares two shares: the share of actor Y within a given set X to the share of Y within the complement of X. After motivating and introducing this new index, we show some of its basic characteristics, the most interesting one being that increased collaboration between two countries leads to an increase in the value of *RIC*. Moreover, this index is asymmetric. The *RIC* index is illustrated with the examples of China and the USA within the global network of collaboration 2000–2020.



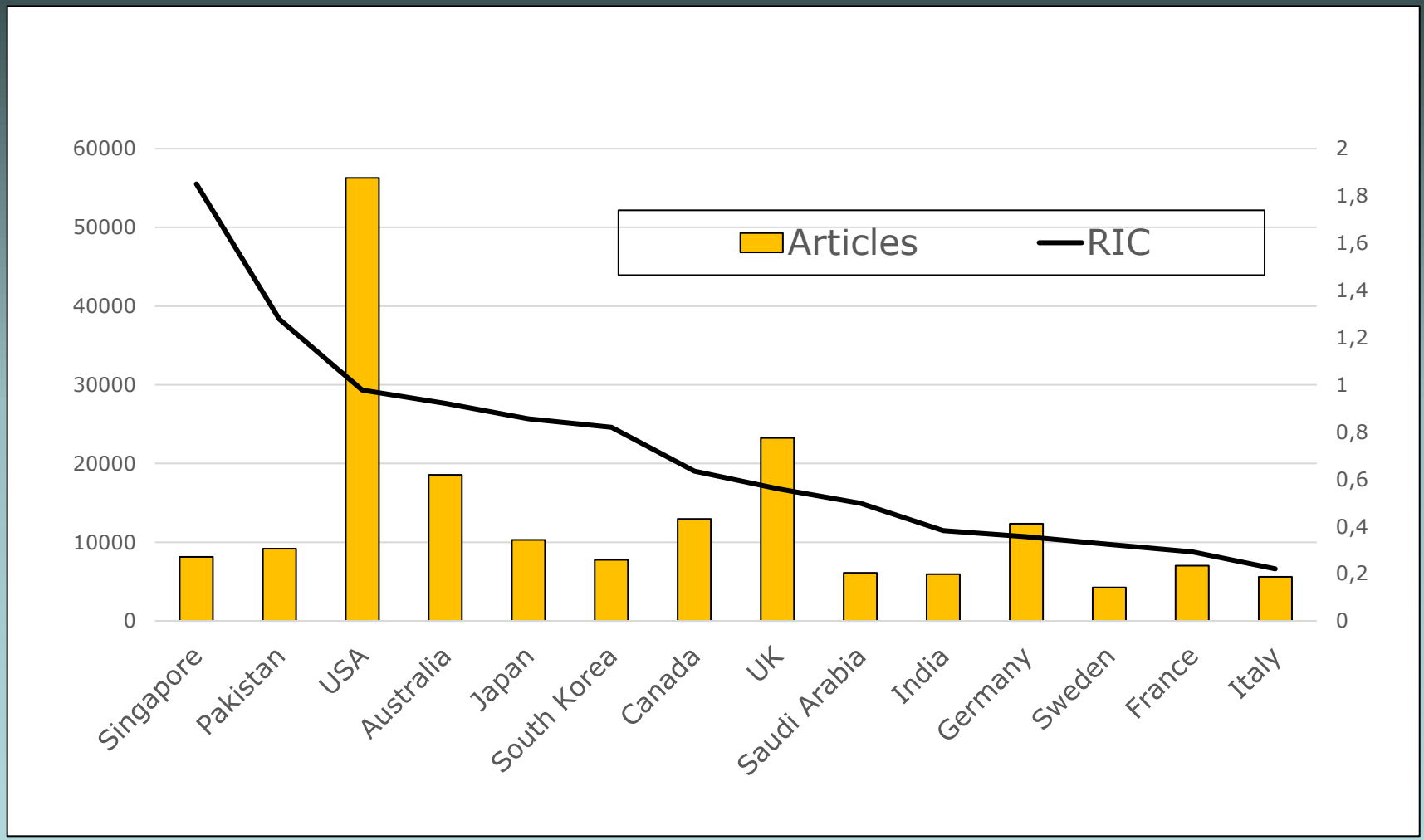
USA’s collaboration profile in 2022



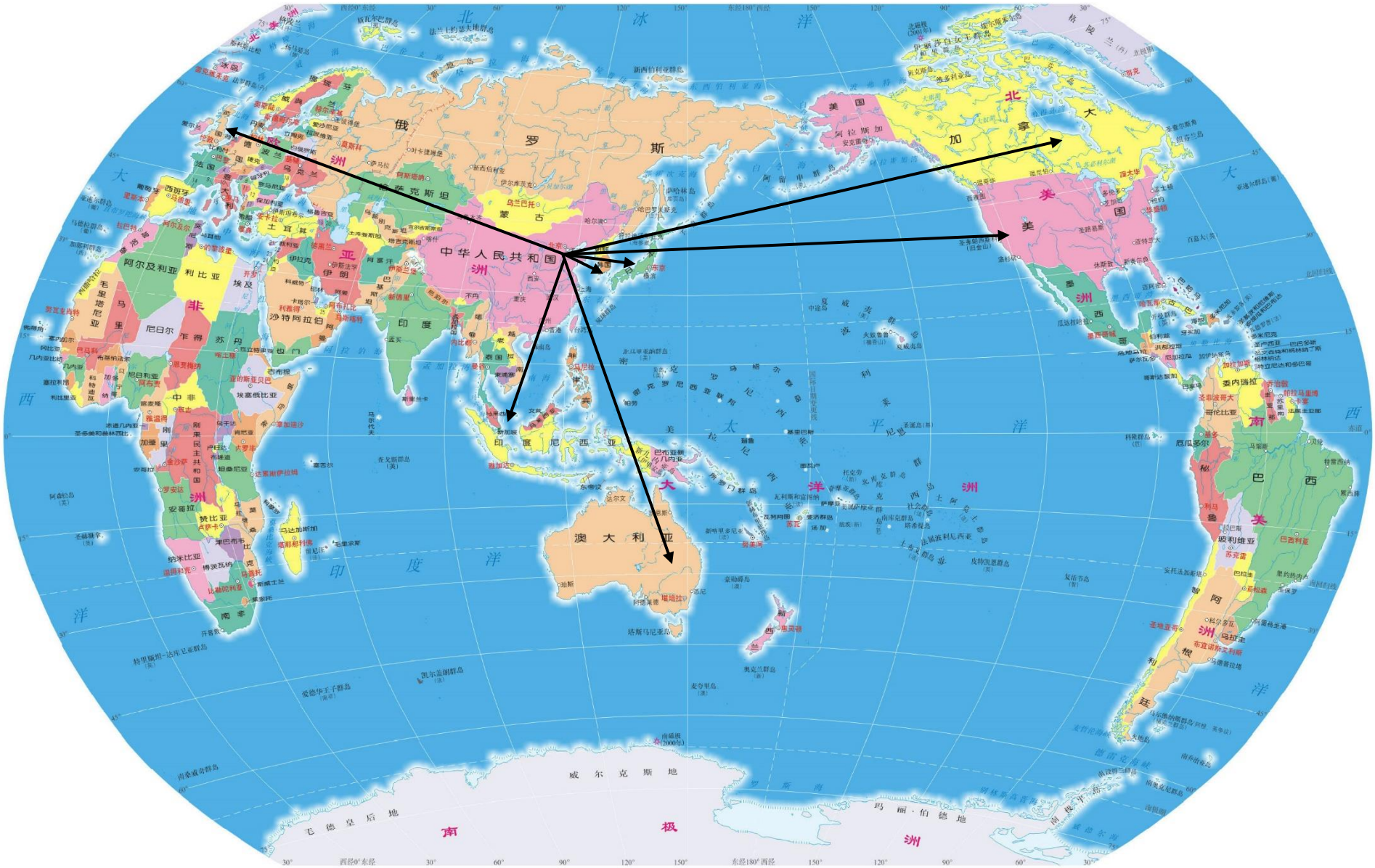
Prioritized relations



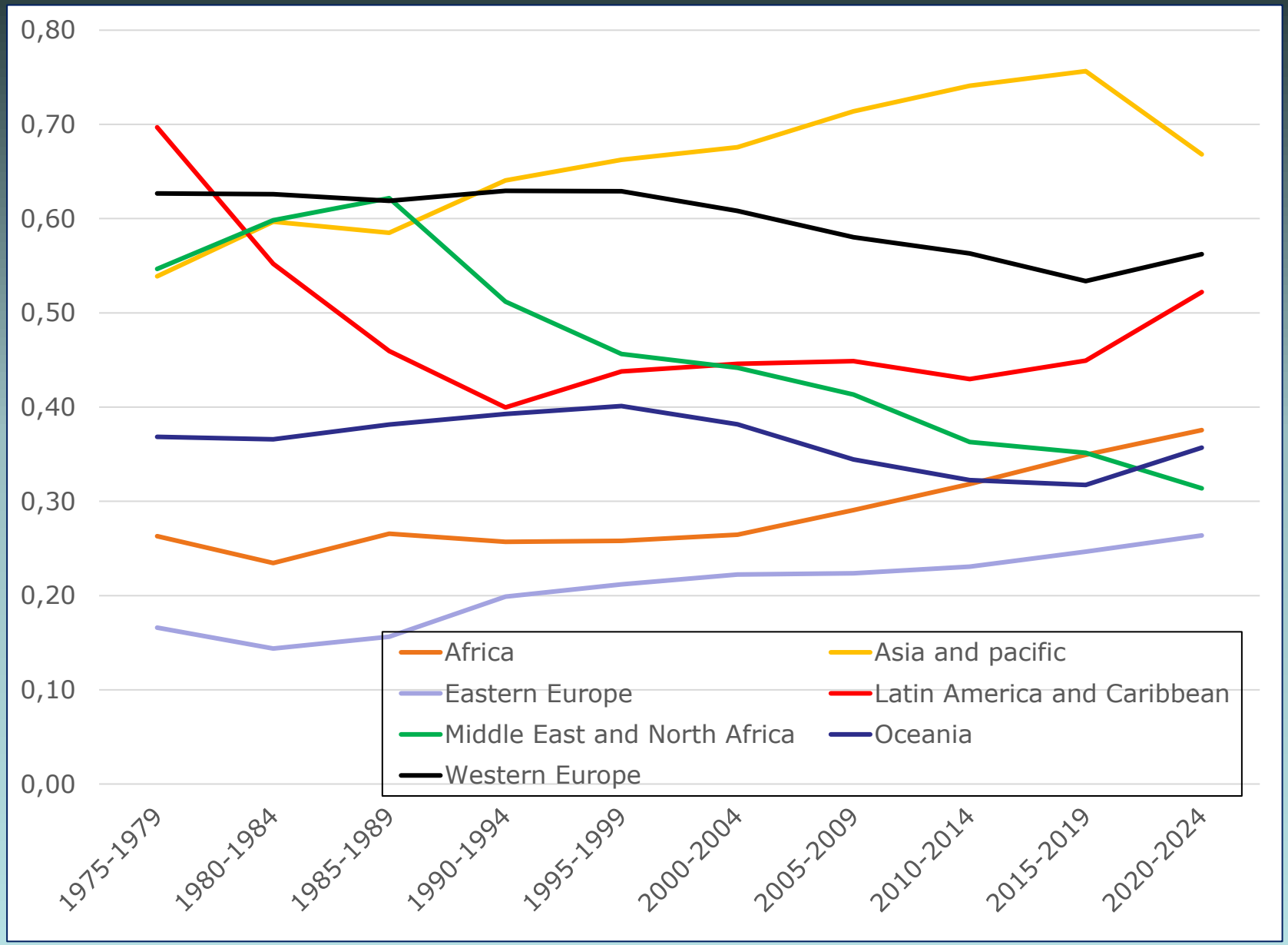
China’s collaboration profile in 2022



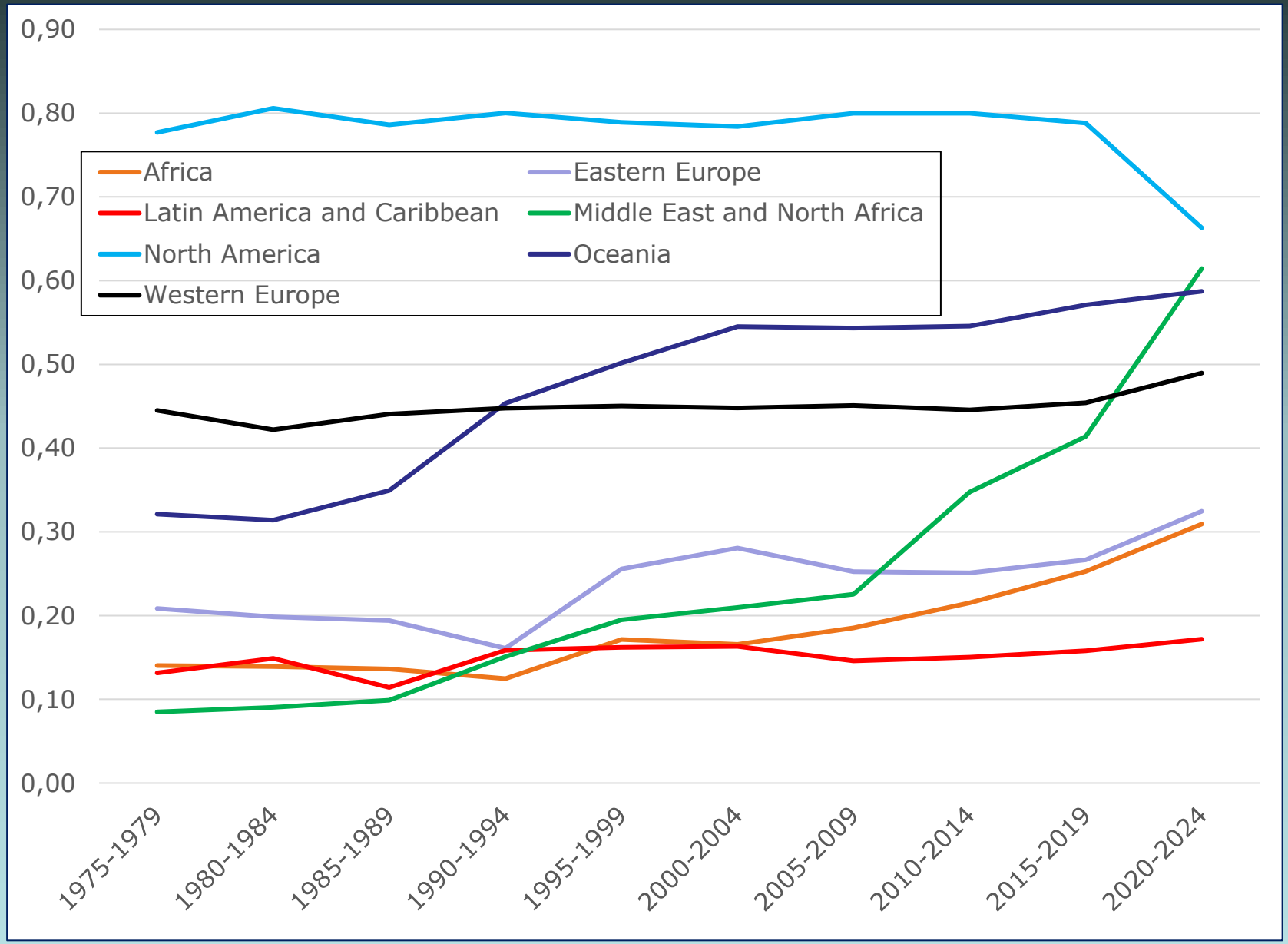
Prioritized relations



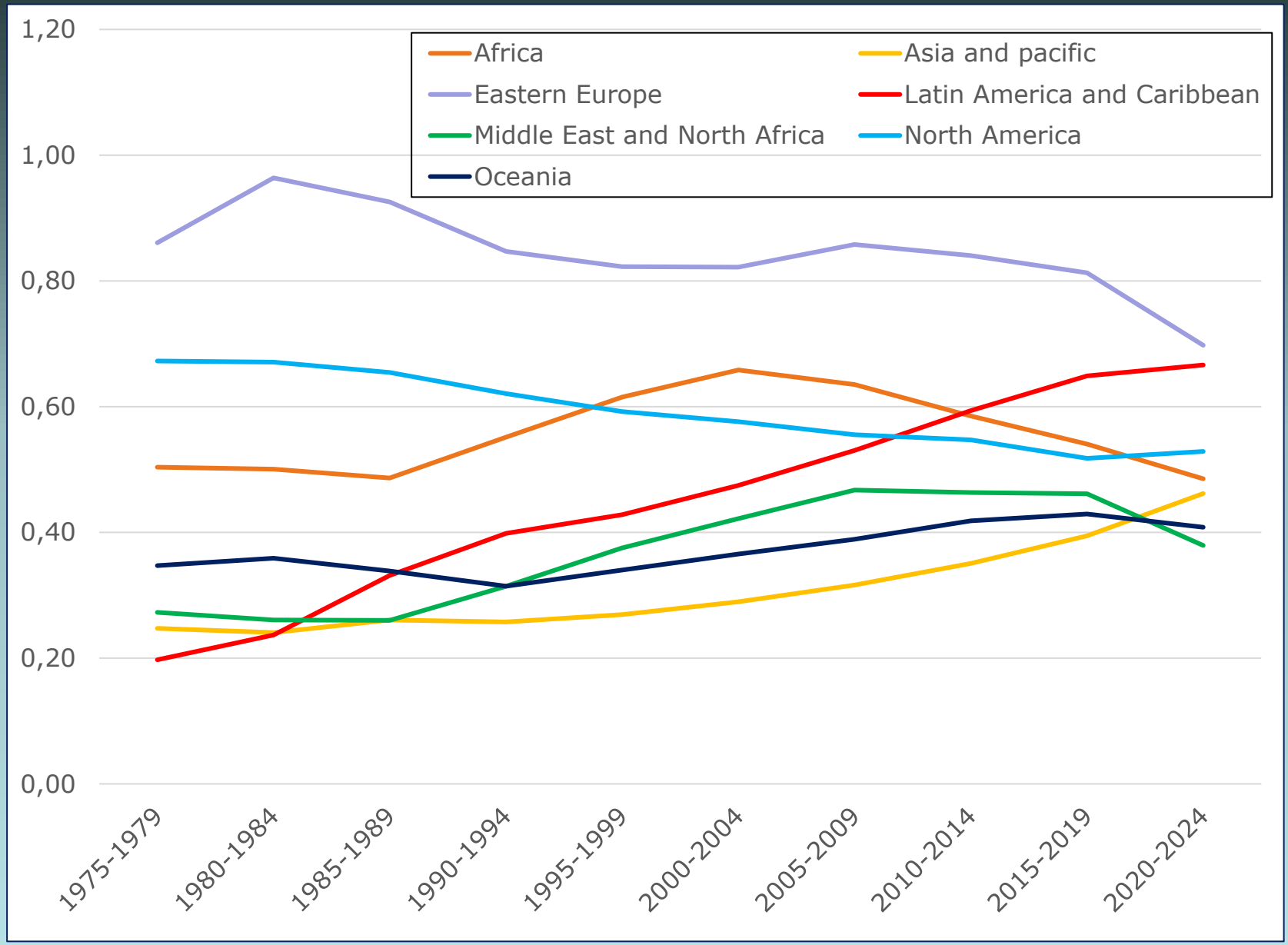
RIC among world regions: The North American perspective



RIC among world regions: The Asian perspective



RIC among world regions: The Western European perspective



The RIC is based on a dataset for coauthorship represented as a matrix of co-occurences and the column and row totals

2020-2024	Africa	Asia and pacific	Eastern Europe	Latin America and Cari	Middle East and North	North America	Oceania	Western Euro	Total
Africa		49479	11527	12122	21861	55248	16341	82121	248699
Asia and pacific	49479		98860	47625	186737	522176	149978	494866	1549721
Eastern Europe	11527	98860		22534	47209	79876	19800	198296	478102
Latin America and Caribbean	12122	47625	22534		19441	111661	20909	158566	392858
Middle East and North Africa	21861	186737	47209	19441		108865	23862	157165	565140
North America	55248	522176	79876	111661	108865		99903	525138	1502867
Oceania	16341	149978	19800	20909	23862	99903		137205	467998
Western Europe	82121	494866	198296	158566	157165	525138	137205		1753357
Total	248699	1549721	478102	392858	565140	1502867	467998	1753357	6958742

$$RIC\,(X,Y) := \left(\frac{C_{XY}}{C_X}\right) / \left(\frac{C_Y - C_{XY}}{T - C_X}\right) = \frac{C_{XY} \cdot (T - C_X)}{C_X \cdot (C_Y - C_{XY})}$$

Thank you for your attention.
Your comments and questions are welcome

Scientometrics
https://doi.org/10.1007/s11192-024-04984-7

Check for updates

The influence of geopolitics on research activity and international collaboration in science: the case of Russia

Lin Zhang[1,2,3] · Zhe Cao[1,2] · Gunnar Sivertsen[4] · Dmitry Kochetkov[5,6,7]

Received: 28 October 2023 / Accepted: 28 February 2024

Abstract

We study the possible influences of the Russia-Ukraine War on Russia's research productivity and international collaboration in science. For this purpose, we introduce and apply two recently developed indicators of relative intensity and balance in international collaboration. To see whether longitudinal trends have changed recently, we combine a long-term perspective based on annual updates since the year 2000 with a short-term perspective based on monthly updates since the beginning of 2022. The clearest change is that the productivity of Russian science, as measured within Web of Science, has dramatically decreased after several years of growth. There is also a clear decline in the degree of international collaboration in fields of research that heavily rely on large multinational infrastructures established through state agreements. In other fields, however, the degree of international collaboration is more stable. The general decline in Russian science seems to be more driven by internal factors than by loss of partnerships abroad.

Keywords Geopolitics · Russia-Ukraine war · Research activity · International collaboration