

Swedish research collaborations with China still increasing, but politically more difficult

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Summary

- China's importance in international research cooperation has increased dramatically in recent decades. China has become Sweden's fourth largest research partner, measured by the number of co-publications by Swedish and Chinese authors. Recent bibliometric data shows that the number of such co-publications has increased in the past five years.
- The increase in Sino-Swedish research collaboration is showing signs of slowing down but the data does not suggest a similar trajectory to that of the United States, where research collaboration with China has decreased in recent years. While formal collaborations, such as agreements with the China Scholarship Council (CSC), have reduced and even been cancelled, many collaborations are proceeding as usual.
- Researchers who collaborate with China regard it as important in their respective fields and have a generally positive view of such collaboration. An online survey of Swedish researchers, mostly in STEM-related fields, conducted for this study reveals that almost all (89 percent) felt that their collaboration with Chinese partners had worked well. In addition, 88 percent of respondents either fully or partly agreed that collaboration between the two countries was valuable in their field.
- The study reveals frustration among scholars that research collaboration with China is becoming increasingly politicized. More than half (57 percent) of participants thought that political obstacles had led to a downsizing of research collaboration with China, even though no decrease in the number of co-publications was found. The survey revealed frustration with how security policies were being implemented at the researchers' universities, which was described by one respondent as a "witch hunt".

- Examples of poor implementation of security policies, as perceived by Swedish researchers, include potentially discriminatory recruitment practices and the indiscriminate cancellation of research collaborations with universities known to have close military ties – commonly referred to as the “Seven Sons of National Defence” – on security grounds, with no consideration for the specific research area. Several respondents expressed regret that Swedish universities were no longer able to accept students from the China Scholarship Council (CSC).
- Although most concerns identified in the study were related to the perceived over-politicization of collaboration with China in Sweden, the study also revealed smaller but not insignificant concerns about political problems that stemmed from the Chinese side. In fact, 34 percent either partly or fully agreed that scholars involved in cooperation between Sweden and China faced the risk of unjust surveillance by the Chinese authorities while 16 percent worried that their safety might be negatively affected when they travel to China. In addition, 39 percent believed that expressing political views might harm cooperation with their Chinese partners. Concerns about an increasingly repressive political climate in China and the politicization of the country’s universities were also raised.

Introduction

China's rise as a global scientific superpower has been unprecedented in terms of both speed and scale.² By 2017, China had surpassed the United States in the annual number of published research articles.³ In recent years, various indicators have suggested that China is closing the gap—or even surpassing the United States—in terms of research quality in multiple fields.⁴

As China's scientific capacity has expanded, so has its significance as a partner in international research. China was the largest research collaborator with the United States in 2022.⁵ It was also the second most important partner after the United States for the United Kingdom between 2018 and 2023.⁶ However, geopolitical tensions between an authoritarian China and western democracies have led to persistent problems when developing sound research collaborations. Escalating trade disputes between the United States and China—which began during the first Trump administration—alongside Russia's full-scale invasion of Ukraine in 2022 have made research collaboration between China and western countries increasingly complex. For instance, while China remains the United States' largest research partner, collaboration between the United States and China has significantly declined since 2018.⁷

As a small but innovation-driven liberal democracy with a strong and internationalized research sector, Sweden provides a particularly useful case for examining these dynamics. A large proportion of Sweden's research publications are international co-publications.⁸ In 2019, 71 percent of all Swedish research articles were co-publications with international partners.⁹

This Brief is part of a larger research project exploring political challenges in Sino-Swedish research collaboration in the light of increasing geopolitical tensions. The study investigates recent developments in Sino-Swedish co-publication, how Swedish scholars perceive the current trajectory of Sino-Swedish research and how political challenges have affected such collaborations. China's authoritarian influence on Sino-Swedish research relations will be discussed in a forthcoming report.

The study used two main methods. First, data from the Web of Science database was used to measure the volume and evolution of Sino-Swedish research collaborations. Second, a survey conducted in the spring of 2025 provides insights into researchers' experiences of and perspectives on the political dimensions of working with China. The survey comprised a number of multiple choice questions and an opportunity to provide more detail at the end.¹⁰ The respondents were selected by identifying Sweden-based researchers who had co-published at least one scientific article with China-based researchers between 2021 and 2024. We estimate that this survey sample of 473 scholars represents a very high proportion of the researchers cooperating with China. In total, 96 researchers completed the survey, which corresponds to a 20 percent response rate.

With regard to the background of the survey respondents, 35 (37 percent) were born in Sweden, 29 (30 percent) were born in China,¹ and 32 (33 percent) were born in other countries, primarily in Europe. In addition, 82 of the survey respondents (85 percent) were men and 14 (15 percent) were women. 53 survey respondents (55 percent) were professors. A large majority of the respondents work in fields related to science, technology, engineering and mathematics (STEM): 86 respondents (90 percent) worked in STEM and 10 (10 percent) worked in the social sciences or humanities.

Sino-Swedish research collaboration

Sweden cooperates with China on research and higher education at the national, institutional and individual levels through collaborations initiated by individual researchers. At the national level, Sweden has had a bilateral agreement with China since 2004.¹¹ This agreement is managed through joint bilateral meetings, the most recent of which took place with representatives from Sweden's Ministry of Education and China's Ministry of Science and Technology in November 2024.¹² The Swedish Research Council has a collaboration with the National Natural Science Foundation of China (NSFC), which has resulted in joint calls for network grants and project grants between Sweden and China.¹³ China also sends a relatively large number of postgraduate students to Sweden. In 2023, around 15 percent of all doctoral students in engineering were from China.¹⁴

Collaboration in the form of co-publications

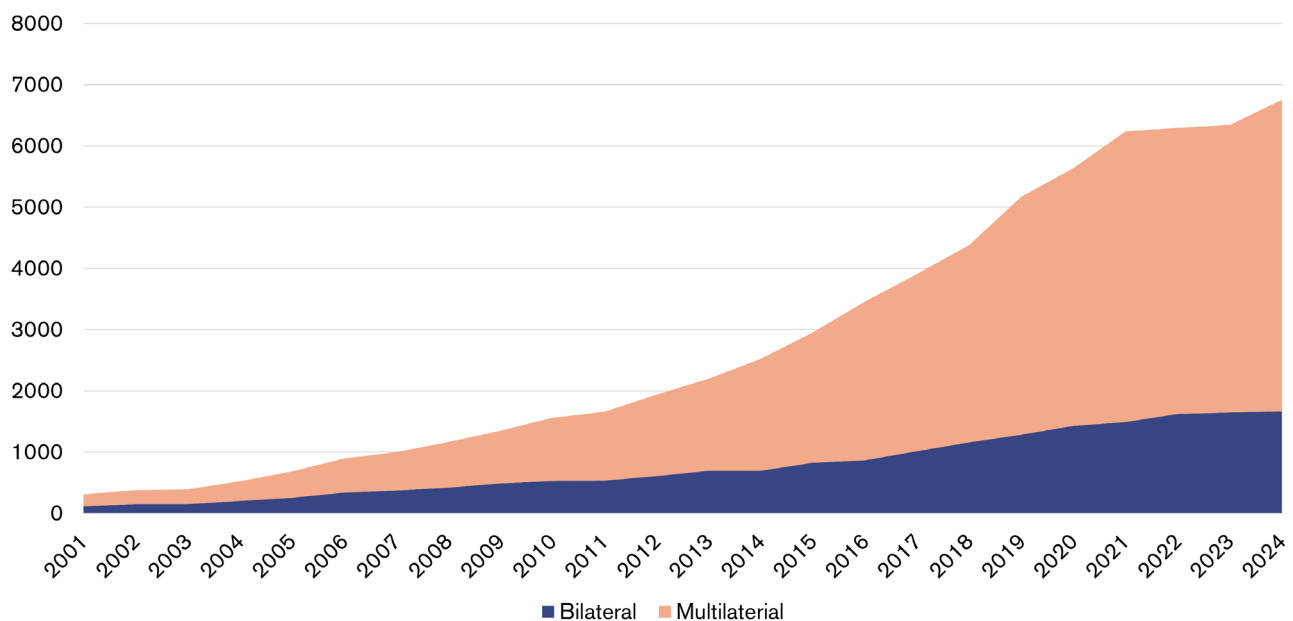
The number of co-publications involving Sweden and China has increased sharply in recent decades. After the United States, the United Kingdom and Germany, China is now Sweden's fourth largest research partner,¹⁵ and by far the largest partner in Asia.¹⁶

¹ A simple analysis of the names of the people in the sample group shows that 174 of the 473 (37 percent) had Chinese-sounding names. Although the latter group also includes many people who were born outside China, the results indicate that survey respondents with a Chinese background are neither particularly under- nor over-represented in relation to the sample group.

According to data taken from the scientific database Web of Science, which mostly covers research in STEM-related fields, the total number of co-publications involving a researcher with an affiliation in Sweden and a researcher with an affiliation in China increased from just 194 in 2001 to around 5088 in 2024 (see Figure 1). If the search is restricted to bilateral collaborations (collaborations involving only researchers with affiliations in Sweden and China), which gives a better view of the extent of collaborations where researchers from both countries play a central part, there was also a sharp increase in co-publications from 119 in 2001 to 1663 in 2024. Swedish-Chinese cooperation mainly takes place in the natural sciences, medicine and technology. Social sciences and humanities (a total of 72 categories in the Web of Science) accounted for only about 5 percent of all collaborations in 2024.

Co-publications between Sweden and China more than tripled in the period 2012–2024. On bilateral cooperation alone, there was an almost threefold increase in cooperation. As mentioned above, there has been a decrease in cooperation between China and the United States in recent years. In contrast, although there are indications that the increase in cooperation is slowing down, there are no signs of a decrease in cooperation between Sweden and China in the available data.

Figure 1. Number of co-publications between Sweden and China, 2001–2024



In line with an earlier report by Forsberg et al. (2023),¹⁷ the Swedish higher education institutions (HEIs) with the most co-publications with Chinese counterparts in the period 2021–2025 are still the Karolinska Institute (KI), Uppsala University, the Royal Institute of Technology (KTH) and Lund University.

However, the proportion of each HEI's publications that are co-authored with China (Figure 2) reveals a somewhat different picture. Here, technology-focused HEIs dominate, with KTH, Luleå University of Technology and Chalmers University of Technology at the top of the list. The list also includes several medium-sized and smaller institutions, such as, Mälardalen University and Borås University. It is worth noting that the Swedish HEI with most co-publications with China (KI) is not included among the top ten with the highest proportion

of co-publications with China. This indicates that China is a more important collaboration partner in technology-focused fields than in medicine and health.

Figure 2. The ten Swedish HEIs with the highest proportion of co-publications with China, 2021–2025

University or research institute	Total number of publications	Co-publications with China	Proportion (percent)
Royal Institute of Technology (KTH)	17148	3138	18.3
Luleå University of Technology (LTU)	5039	695	13.8
Chalmers University of Technology (CTU)	11966	1600	13.4
Mälardalen University (MDU)	2158	270	12.5
Uppsala University (UU)	29549	3549	12.0
Stockholm University (SU)	17741	2046	11.5
University of Borås (UB)	993	95	9.6
Lund University (LU)	33090	2988	9.0
University of Gothenburg (GU)	24393	2197	9.0
Swedish University of Agricultural Sciences (SLU)	9517	825	8.7

Survey results

The online survey found that a large majority of researchers who participated in the study had a positive experience of collaborating with their Chinese counterparts: 89 percent either fully agreed or partly agreed that their collaboration with China had worked well (Figure 3). Only five respondents (5 percent) either partly or fully disagreed. Responses to the open-ended question in the survey reveal that these positive experiences manifest themselves in various ways. Most notably, survey respondents felt that they had been welcomed and well-treated by Chinese partners when visiting China. Chinese PhD students and postdoc researchers were seen as highly capable. One senior researcher was particularly positive about their collaboration with Chinese researchers, highlighting the capacity of Chinese students and “outstanding” research outcomes with Chinese partners, including over 150 co-publications and several shared patents. Several respondents said that they worked in fields that were not politically sensitive and had therefore never encountered any political problems.

Figure 3. “My personal experience of cooperating with China has worked well”

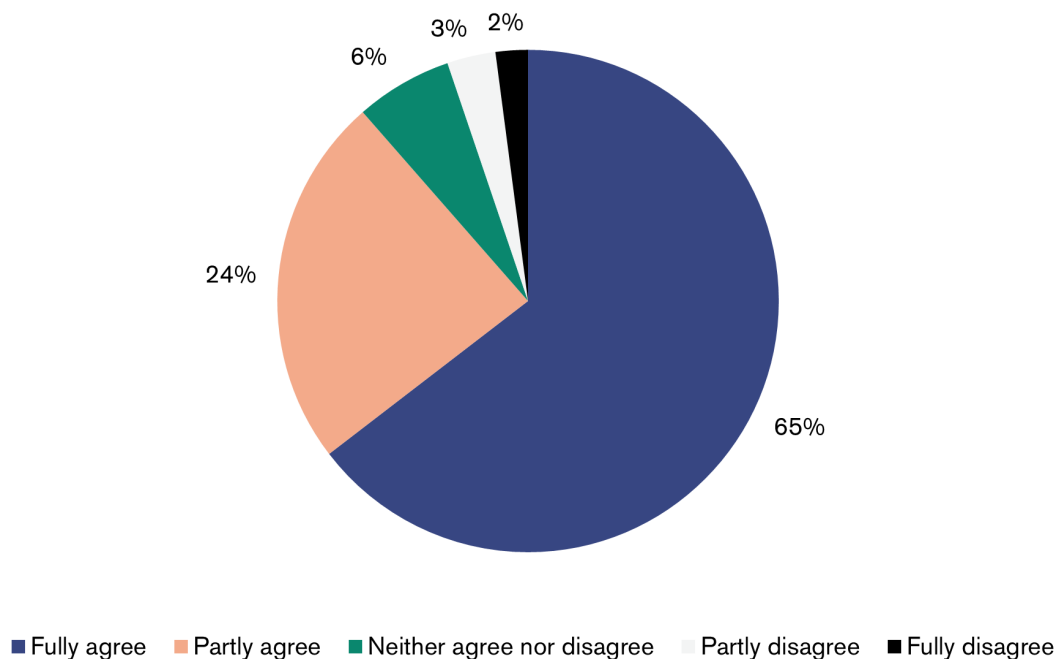
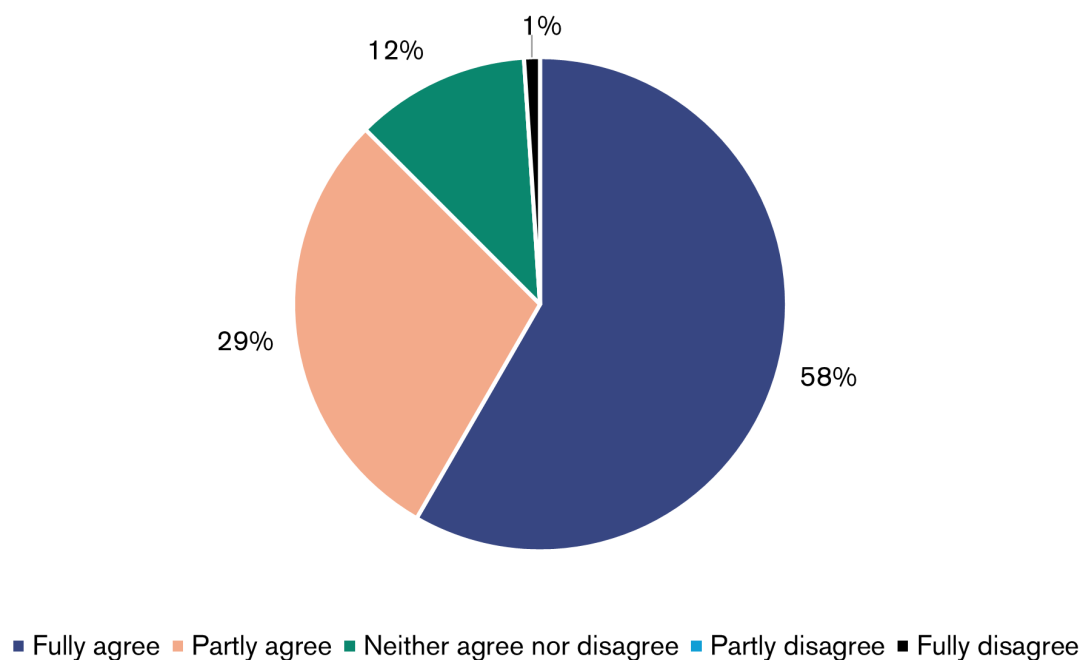


Figure 4 illustrates that a large majority of the survey respondents regarded collaboration with Chinese universities as important to their field of research: 88 percent of respondents either fully agreed or partly agreed that collaboration between the two countries was valuable in their field. A previous study by STINT found that access to research infrastructure and access to personnel were among the most common motivations for Swedish researchers engaging in collaboration with Chinese partners.¹⁸

There was concern that Sweden might lose its competitive edge in research if collaborations with China reduced. One respondent wrote that any downsizing of research collaboration with China would “undermine the research leadership of Sweden”.

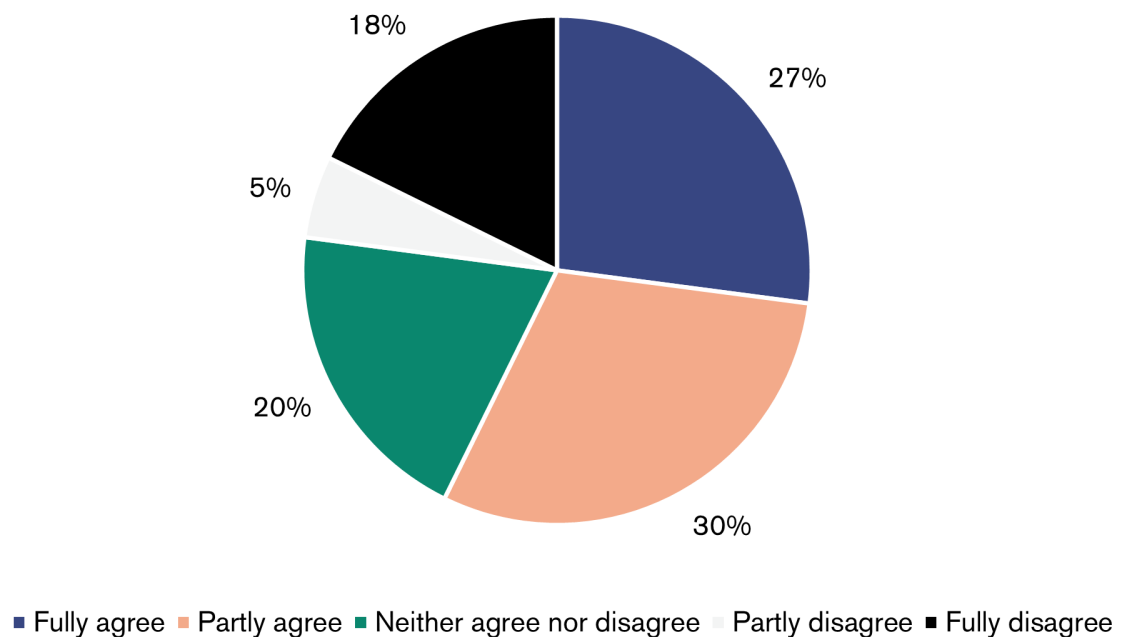
Figure 4. “In my field of research, it is valuable to cooperate with Chinese universities”



Whereas most respondents considered research collaboration with China to be important, there was a high awareness that problems might arise linked to political issues. A majority of survey respondents (57 percent) thought that political obstacles had led to a downsizing of cooperation between the two countries. Several survey respondents shared personal experience of such obstacles. One survey respondent wrote: “The only issue I’ve had is that my university in Sweden bans many of my collaborations in China. I have never had a problem with working in China”. Another survey respondent described how a planned project was cancelled for security reasons: “I had an approved [research funding agency] grant for collaboration with a Chinese university [year of incident] not implemented because a newly employed [head of security] suggested stopping the collaboration project”.

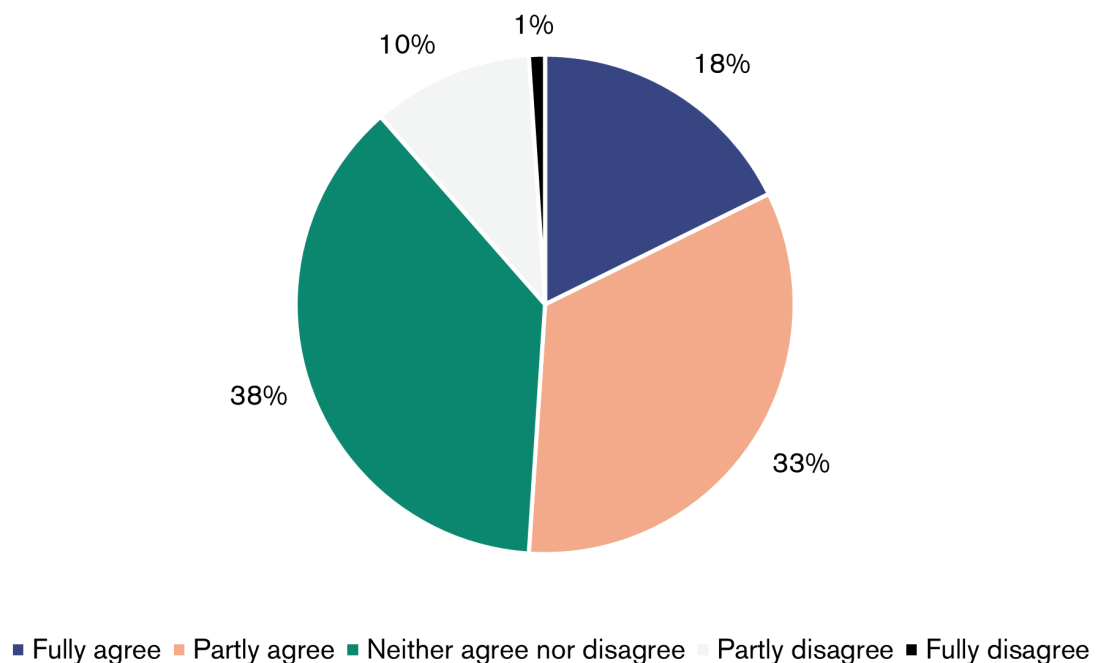
Other survey respondents went so far as to accuse Swedish HEIs of unjust practices in relation to Chinese research collaboration. One researcher described how their institution maintained a list of high-risk universities in China and had declined candidates who had previously studied at these institutions, suggesting that Chinese applicants were discriminated against in the recruitment process: “It happened four times in the past year that good candidates did not pass the ‘security check’ and lost job opportunities, although our positions do not require a security check by law or regulations. When recruiting, only Chinese applicants need to be checked for security. In my opinion, ‘security considerations’ have been used to discriminate [against] Chinese scholars and sabotage collaborations between Swedish and Chinese universities”. Another respondent described how all collaborations with the so-called Seven Sons of National Defence, which refers to seven civilian universities with close ties to the Chinese military, had been cancelled at the central level by the individual’s university, with no regard for the specific research areas – a process the respondent described as akin to a “witch hunt” that had been caused by political pressure.

Figure 5. “Political obstacles have led to a downsizing of cooperation between Sweden and China”



A majority of respondents also either fully agreed or partly agreed that prejudice was prevalent in how Swedish society views scientific cooperation between the two countries. This indicates that a significant part of the Swedish research community believes that collaboration with China is viewed in an overly negative light. One survey respondent wrote: “Sweden exhibits a notable political bias in its academic cooperation, even if on natural science, with China. I have faced significant obstacles from Swedish institutions throughout this collaboration process”. Another researcher working in the field of engineering expressed concerns that it was important to be aware of the political climate in Sweden when seeking to secure funding, and that overly critical views of China could be an obstacle when applying for research funding: “It is also the Swedish political climate that regulates what I can or cannot say without consequences to my future funding opportunities. One clear example is that there are people within the Swedish academic community that have very negative opinions on China and collaborations with Chinese researchers”. This is despite the fact that this researcher claimed not to be working on politically sensitive topics.

Figure 6. “Prejudice is prevalent in how Swedish society views scientific cooperation between the two countries”

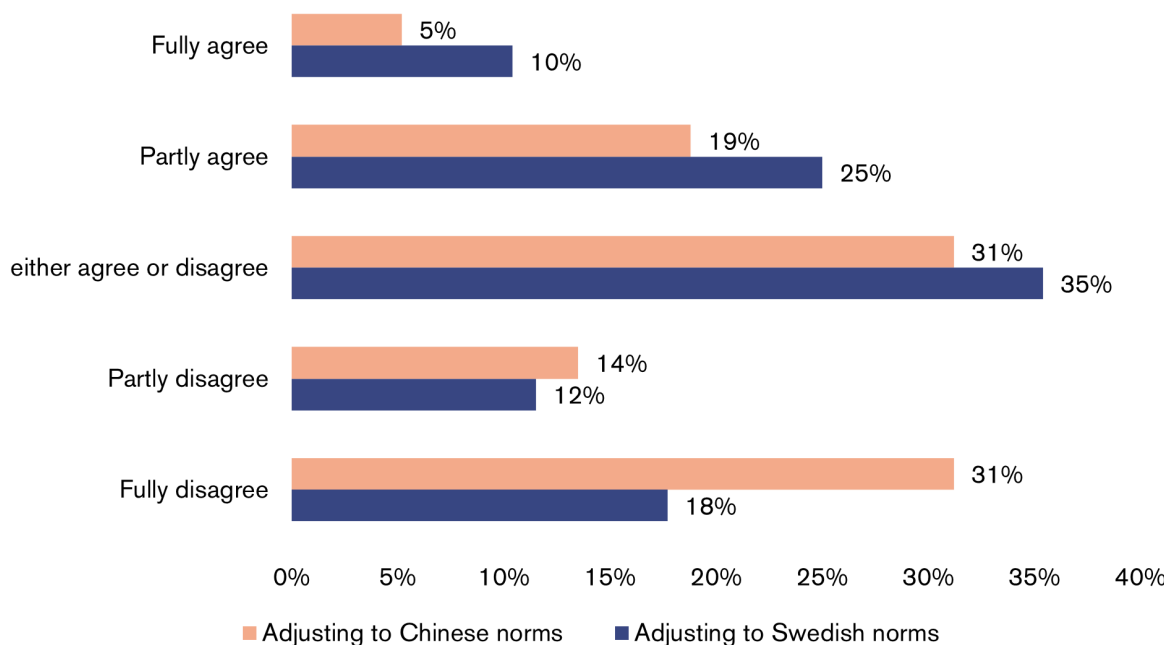


In recent years, cooperation with China Scholarship Council (CSC) has become increasingly controversial in Sweden and in other countries. The main criticism of such cooperation is that students are forced to sign agreements with CSC that contain requirements to declare loyalty to the Chinese Communist Party and abstain from participating in activities that go against the interests of the Chinese state.¹⁹ Several survey respondents were critical of the refusal to allow CSC students in Sweden, highlighting the positive results of such cooperation for both students and supervisors, and that the ending of such cooperation had further limited scientific collaboration between the two countries. One respondent pointed out that although Chinese students do indeed sign a contract with the Chinese state in order to obtain a scholarship, this is often also the case with students from other countries: “Recently, I co-supervised a PhD student from [an African university] within a project funded

by SIDA on developing a faculty of [subject area] in [African country]. The student was 50 percent of his time in Sweden. He too signed a contract with the [African country] state. But we do not make a big fuss about it". The respondent argued that in the debate about research cooperation with China, people tended to mix up concepts such as "democracy" and "freedom of expression" with issues related to economic competitiveness in relation to China. If the reason for not collaborating with the CSC is to protect democratic values and freedom of expression, this respondent reasoned, this "would force us to act on all countries where students are not free to decide on their future, but we are not doing that".

While most concerns regarding research collaboration with China arose from political obstacles on the Swedish side, there were also examples of concern among researchers about political problems arising from the Chinese side. For instance, 34 percent of respondents either partly or fully agreed that Swedish scholars cooperating with China face the risk of unjust surveillance by the Chinese authorities and 16 percent expressed concerns that their safety might be negatively affected when they travel to China. In addition, 24 percent fully or partly agreed that adjusting to Chinese political norms—was critical to developing research cooperation between Sweden and China. Although 35 percent also fully or partly agreed that adjusting to Swedish political norms was critical, adaptation to China's radically different authoritarian political values is arguably significantly more problematic for Swedish researchers. Examples could include researchers feeling pressured to adopt China's views on the one-China policy or China's views on human rights issues in Xinjiang to facilitate research cooperation. Notably, 39 percent also either fully agreed or partly agreed that expressing their political views could harm their cooperation with China.

Figure 7. "Adjusting to Swedish/Chinese political norms is critical for developing research cooperation between Sweden and China"²⁰



Concerns about the more repressive political climate in China were also revealed in the more detailed answers in the responses to the open-ended question. One survey respondent wrote: “The first 20 years of my collaboration with China was very positive and open-minded but since Xi Jinping came to power Chin[ese] society feels more closed and insecure when you are in China”. Another researcher with several years of experience working at a university in China wrote that in Chinese universities, political goals are more important than academic goals: “My experience is that [for] the university bureaucracy, serving the needs of the party has higher priority than serving the needs of the university”. Although rare, there were also examples of authoritarian influence by Chinese state actors. One respondent reported having been physically intimidated or detained by the Chinese authorities. The extent and implications of authoritarian influence on Sino-Chinese research relations, including for Sweden-based China scholars, will be discussed in more detail in a forthcoming report.²¹

Until recently, several Swedish HEIs, such as Uppsala University, the Royal Institute of Technology (KTH) and the Karolinska Institute (KI), had an agreement with the China Scholarship Council (CSC). KI received up to 30 doctoral students via the CSC per year,²² and KTH up to 50 doctoral students.²³ In 2024, KTH had 12 doctoral students funded by the CSC.²⁴ However, all Swedish HEIs have now paused their collaborations with the Chinese state funder.²⁵

Figure 8. Responses from open-ended question in online survey

Topic	Example quote	Research field
Criticism of not accepting students from the China Scholarship Council	“The university won't accept visiting PhD students from China that hold CSC scholarships, which largely downsizes our collaboration with Chinese partners”	Physics
	“It is a great pity that we are no longer allowed to accept CSC PhD students in Sweden. It was positive for both the students and the supervisors”	Chemistry
Problems recruiting or inviting Chinese researchers for political reasons	“The only negative experience has been problems with the Swedish Migration Office when it comes to visas for Chinese visitors, PhD students or postdocs”	Engineering
	“I could not invite a former colleague in China due to the political situation”	Mathematics/ computer science

Concerns regarding the political climate in Sweden and and/or bias regarding Sino-Swedish research cooperation	“Chinese-born scholars in Sweden may get concerned that they will be treated in the same way as happened to their counterparts in the USA, such as the heartbreaking “China Initiative”	Engineering
	“Compared to ten years ago, Swedish society has become more conservative and many universities refuse visitors from China. Personally, my current manager discourages me from working with Chinese partners”	Medicine/ biology
Experience of cancelled cooperation or research project for political reasons	“Our collaboration with some universities in China, which belong to the Seven Sons of the Military group, was terminated at the central administration level without any attention to the nature of our specific research area”	Physics
	“Forced to terminate collaborations and to withdraw both submitted and accepted publications by Swedish authorities [for] political reasons”	Engineering
Concerns that policies regarding China collaboration are insufficient or unclear	“The policies in Sweden on collaborations with China are too unclear, so it is hard to know what is accepted/recommended and what is not”	Engineering
	“... rules and guidelines from the university or Swedish government are missing.”	
Positive experiences of working with Chinese students or researchers	“I have been host for several postdocs and visiting PhD students from China and had a good experience in each case”	Environmental sciences
	“My experiences with Chinese students and professors have been overwhelmingly positive. Apart from a couple of them, all my Chinese students (I have had 14 Chinese PhD students) were very clever, innovative and extremely positive. Their respect for teachers is extremely commendable”	Engineering
Concerns regarding the political climate in China and/or at Chinese universities	“The first 20 years of my collaboration with China was very positive and open-minded but since Xi Jinping came to power Chinese society feels more closed and insecure when you are in China”	Medicine/ biology
	“My experience is that [for] the university bureaucracy, serving the needs of the party has higher priority than serving the needs of the university”	Materials science

Conclusion and recommendations

This study has investigated the recent trajectory of Sino-Swedish research collaboration and perceptions of the political challenges among Sweden-based researchers cooperating with China. In the past 20 years, China has gone from being a negligible research partner to one of Sweden's most important sources of international collaboration.

In the past five years, research collaboration in the form of co-publications has continued to increase, although the rate of increase is showing signs of slowing down. Sweden collaborates extensively with China on the natural sciences, medicine and engineering. Chinese universities are especially important research partners for STEM-heavy HEIs. According to the study's empirical data, Sweden-based scholars collaborating with China have a generally positive view of such collaboration: 89 percent of survey respondents claimed that their collaboration worked well.

Nonetheless, the data also reveal concerns with political obstacles arising from research collaboration with China. A majority of survey respondents (57 percent) believe that political obstacles have led to a downsizing of research collaboration between the two countries. Researchers participating in the study describe multiple examples of collaborative projects being prematurely cancelled or not initiated due to what they perceived as security or geopolitical concerns. Several researchers also revealed frustration with what they perceive as an increasing difficulty in recruiting Chinese researchers. Despite the fact that Swedish law prohibits discrimination against applicants from any particular country, respondents reported challenges with hiring qualified Chinese scholars, particularly those affiliated with the Seven Sons of National Defence, due to heightened institutional risk sensitivity. Several respondents also expressed frustration about no longer being able to recruit Chinese PhD students funded by the China Scholarship Council (CSC). Some participants even accused Swedish universities of discrimination or unjust recruitment practices.

It is notable that the perception among respondents that political obstacles have led to a downsizing of cooperation between the two countries differs from the findings in this study's primary data on the number of co-publications, which shows no clear indication of a decrease in collaboration. One explanation for this discrepancy might be that respondents with personal experience of political obstacles were overrepresented in the survey and therefore had an overly negative view of the scale of downsizing. Another explanation might be that collaboration might have increased even more had political obstacles not been a factor.

It is also possible that the negative effects of an ongoing downsizing of research collaborations are yet to be seen in the rate of co-publications, and that a decrease will become apparent in the coming years. Yet another possibility is that although formal collaborations such as agreements with the China Scholarship Council have been reduced or cancelled, many collaborations, particularly those between individual researchers with established networks in China, are proceeding as usual. That most collaborations are proceeding "below the radar" in this way, while formal agreements are cancelled or reduced because of a sense of political pressure or uncertainty, could also explain the discrepancy between perception and reality. The difference between Sweden and the United States can be explained by the fact that despite a certain sense of politicization of Sino-Swedish research, Sweden has not yet seen any radical political intervention

specifically targeted at collaboration between Sweden and China along the lines of the “China Initiative”.

A certain degree of caution regarding security and geopolitical concerns is legitimate. Concerns about the risks of dual-use and undue technology transfer, for instance, are real and have been documented in previous studies and reports.²⁶ This study also found small but not insignificant risks as perceived by Sweden-based researchers, such as the risk of being subjected to unjust surveillance and the risk of self-censorship to avoid harming cooperation with China. Concerns about a more repressive political climate in China and the politicization of the country's universities were also raised, each reported in a single case. Although not revealed in the present study, possibly due to the sensitive nature of the topic, we also know that the Chinese Communist Party monitors individuals with a Chinese background at foreign universities, and sometimes puts pressure on such individuals to cooperate through transnational repression.²⁷

At the same time, decision makers in Sweden and comparable countries must be aware of the growing importance of China in research cooperation, particularly in fields such as the natural sciences, engineering and medicine. This study reveals a deep frustration among many researchers involved in research collaboration with China concerning how policies related to security are implemented at their respective universities.

We propose the following policy recommendations:

- Higher education institutions, in cooperation with public authorities and other relevant experts, should implement more initiatives to raise awareness and understanding of China among researchers. This study highlights both the significance of China as a key partner in international research collaboration and the presence of certain, albeit limited, risks associated with cooperation linked to China's specific political context. Increasing researchers' knowledge of China's political system and research landscape would support safer and more informed collaboration as China's role in global research continues to expand. Furthermore, such awareness-raising efforts could help clarify the rationale behind security-related measures concerning cooperation with China. This, in turn, could reduce researchers' frustration over what is sometimes perceived as the politicization of research in Sweden.
- HEIs should establish new administrative roles with broader competencies to address the intersection of security and international research collaboration. These geopolitical and security advisors should ideally have an academic background and a nuanced understanding not only of security risks, but also of the complexities and value of international research cooperation. Many researchers express deep frustration with how security measures related to China are currently being implemented by HEIs. This highlights a substantial gap between security-oriented and academic perspectives within institutions. Developing administrative roles with broader expertise could help bridge this divide and foster a more balanced, informed and constructive approach to managing international collaboration risks.

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About the Swedish National China Centre

The Swedish National China Centre was established in 2021 as an independent unit at the Swedish Institute of International Affairs (UI). The Centre conducts policy-relevant research and aims to contribute to a long-term improvement in the state of China-related knowledge in Sweden. UI's publications undergo internal quality control. Any views expressed are those of the authors.

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- 23 KTH Royal Institute of Technology. (2024, November 25). Inga nya doktorander antas inom CSC. Retrieved 2 May, 2025, from <https://intra.kth.se/aktuellt/nyheter/inga-nya-doktorander-antas-inom-csc-1.1372331>
- 24 Skarsgård, K. (2024, 12 september) UKÄ läxar upp lärosäten om stipendier från Kina.

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26 See for instance, Joske, A. (2018). Picking flowers, making honey: The Chinese military's collaboration with foreign universities (Policy Brief No. 10/2018). Australian Strategic Policy Institute. <https://www.aspi.org.au/report/picking-flowers-making-honey>

27 For an example of how China monitors individuals with Chinese backgrounds at foreign universities, see Molloy, G., & Johnson, E. (2025, May 7). INVESTIGATION: Uncovering Chinese academic espionage at Stanford. The Stanford Review. <https://stanfordreview.org/investigation-uncovering-chinese-academic-espionage-at-stanford/>. For examples of how the CCP pressures scholars with transnational repression see Lloyd-Damjanovic, A. (2018). A Preliminary Study of PRC Political Influence and Interference Activities in American Higher Education. Wilson Center. <https://www.wilsoncenter.org/publication/preliminary-study-prc-political-influence-and-interference-activities-american-higher>. See also the upcoming report (in Swedish): Sundqvist, G., & Mo Welin, E. (2025). Forskning med förbehåll? Auktoritär påverkan i svensk-kinesiska forskningsrelationer. Mälardalen University & Swedish National China Centre.