

Geoeconomics and the Australian university sector: A ‘geoeducation’ analysis

Jane Golley, Amanda Barry, Paul Harris
and Darren J. Lim
The Australian National University

Abstract

The logic of geoeconomics is that economic policy instruments are increasingly wielded as instruments of national power and perceived as vectors of national security vulnerability. This article analyses the shifting geoeconomic dynamics that are shaping interactions between Australia, China and the United States in the university sector. It describes how both Beijing and Washington have come to view higher education and research through a geoeconomic lens, providing context for a subsequent analysis of “geoeducation” dynamics from an Australian perspective. The university sector simultaneously poses growing concerns for national security, while remaining a major contributor to national prosperity. The article concludes by framing the policy challenges facing the Australian government in terms of the trade-offs required for risk mitigation strategies that seek to maximise the potential for reducing vulnerabilities while minimising the economic costs.

NOTE: This article has received grant funding support from the Department of Defence Strategic Policy Grants Program. The views expressed in this publication are those of the authors and do not necessarily reflect the views of the Department of Defence.

1. Introduction

For over a decade Australia’s political leaders and policymakers have grappled with the trade-offs inherent in having China as the country’s largest trading partner and a national security policy anchored around the alliance with the United States. As Beeson and Wilson wrote in this journal in 2015, China’s rise generates “integrated...economic and geopolitical consequences”.¹ More recently, the breadth and complexity of these consequences is being framed through the lens of geoeconomics, which integrates economic and security frameworks to illuminate the trade-offs faced by policymakers in an increasingly wide array of policy and sectoral domains.

The logic of geoeconomics is based upon two clear empirical trends embedded within an inherent policy trade-off. The first trend is that governments now use economic instruments to promote and defend national interests extending well beyond narrow

1 Mark Beeson and Jeffrey Wilson, ‘Coming to terms with China’, *Security Challenges* 11(2): 21, 2015.

economic goals, to encompass national security, geopolitics and grand strategy.² This means that economic policy, or economic statecraft, is more explicitly and intentionally being wielded as an instrument of national power, through which governments seek strategic advantage.³ As a result, the domains being affected by the logic of geoeconomics are rapidly expanding. Traditionally, the use of economic policies for strategic ends centred mostly around the use of economic sanctions, which were typically formal, legal, and multilateral instruments publicly issued to achieve well-defined geopolitical objectives. Now, China is demonstrating the scope of potential geoeconomic activity in managing its bilateral relations—including with Australia—while the Trump administration significantly expanded the scope and depth of geoeconomic actions specifically targeted at China.

The second trend is that regardless of the intention or objectives of any government's economic policies, these actions are increasingly affecting the capacity of other states to achieve their own economic, national security or geopolitical goals. This trend is the flipside of the first—just as economic policy tools can intentionally be wielded as instruments of national power, they can equally generate vectors of perceived vulnerability and insecurity, regardless of the underlying intent.⁴ Geoeconomic vulnerability was historically focused on the need for states to access stable and secure supplies of a narrow range of commodities, under the rubric of resource and energy security, and controlling the export of dual-use technologies that potentially offered a battlefield advantage. The domains for these vulnerabilities have now expanded in scope, in large part because of the dominance of technology in modern economies.⁵ Emerging vulnerabilities relate to the robustness and resilience of supply chains, the prospect of national governments controlling the behaviour of their own companies and citizens, and the expanding breadth of export categories that are potentially consequential for national security dynamics.

Accompanying these trends is an inherent trade-off for national governments: geoeconomic policy is costly. The strategic impulse either to wield geoeconomic power, or to mitigate geoeconomic vulnerability, will usually require the use of taxpayer dollars or regulatory intervention in markets to constrain or artificially direct economic activity, both of which distort economic incentives in ways that impose economy-wide costs. Formulating optimal policy responses is thus more complex than finding the best ways to spend within a given fiscal envelope. Rather, it requires an understanding of the structure and economic incentives of the sector in question, to map how interventions generate second-order effects that generate additional economic (or security) costs for the nation. Effective geoeconomic policymaking thus requires expertise that draws upon a range of different scholarly and policy disciplines, to illuminate the complex trade-offs inherent in attempts to 'maximise' national interests by both minimising vulnerability and risk (or 'maximising national security') and 'maximising national prosperity'.

-
- 2 Darren Lim and Victor Ferguson, 'In beef over barley, Chinese economic coercion cuts against the grain', *The Interpreter*, 13 May 2020, <https://www.lowyinstitute.org/the-interpreter/barney-over-beef-chinese-economic-coercion-cuts-against-grain> [Accessed 14 May 2020].
 - 3 Robert Blackwill and Jennifer Harris, *War by Other Means: Geoeconomics and Statecraft* (Cambridge MA: Belknap Press, 2016), pp. 19-23.
 - 4 Anthea Roberts, Henrique Choer Moraes and Victor Fergus, 'Geoeconomics: the variable relationship between economics and security', *Lawfare*, 27 November 2018, <https://www.lawfareblog.com/geoeconomics-variable-relationship-between-economics-and-security> [Accessed 20 June 2019].
 - 5 Andrew Kennedy and Darren Lim, 'The Innovation Imperative: Technology and US–China Rivalry in the Twenty-First Century', *International Affairs* 94(3) (2018): 553-572.

Geoeconomics represents a new and vitally important frontier of both scholarly research and public policy precisely because it traverses mainstream disciplines such as national security and economics that have traditionally been siloed. The purpose of this article is to use a single case study, the university sector, a domain that historically would largely (though not entirely) have been peripheral to security policy—to illustrate the centrality and complexity of the geoeconomic issues facing national governments. In both their teaching and research functions, universities are fast becoming “both terrain and instruments of strategic competition”,⁶ especially in the geopolitical rivalry between the United States and China. This competition is complicated by the rapid internationalisation of both education and research in recent decades, and the synergies that have materialised as a result. Universities are therefore a useful case for illuminating the logic and complexities of geoeconomics.

This article analyses the shifting geoeconomic dynamics that are shaping interactions between Australia, China and the United States in the spheres of higher education and research. It begins with a descriptive overview of how higher education and research have evolved to become geoeconomic issues from the perspectives of Beijing and Washington. This provides the context for a subsequent analysis of “geoeducation” dynamics from an Australian perspective, which identifies four specific risks pertaining to the sector: the university sector’s high dependence on Chinese students as a source of revenue; the end-use of collaborative research; foreign interference; and pressure from Washington to align with US policies, regardless of the costs. We conclude by framing the policy challenges facing the Australian government in terms of the trade-offs required for risk mitigation strategies that seek to maximise the potential for reducing vulnerabilities while minimising the economic costs.

2. The Chinese Context: Expansion, Soft Power and Coercion

Advances in education and research have been cornerstones of China’s economic development strategy since the late 1970s, and remain central to President Xi Jinping’s current ambitions to ‘rejuvenate’ the Chinese nation. This is evident in the ambitious Made in China 2025 strategy, which aimed to make China one of the world’s most innovative countries by 2020, and a leading global science and technology superpower by 2049.⁷ In pursuit of this goal, significant investments in expanding its domestic capacity for R&D have been coupled with strategies to develop a highly-internationalised university sector. More recently, this domestic expansion has been coupled with both “soft power” initiatives to expand China’s global influence, and the use of explicit coercion and more subtle influence to stifle criticism of China abroad.

Emerging from the chaos of the Cultural Revolution, during which schools and universities across the country were closed down, China’s university sector expanded rapidly, with approximately one university opening a week in the four decades since 1978. In recent years, the focus domestically has been on ensuring quality and excellence, evident in the

6 Rory Medcalf, *Contest for the Indo-Pacific: Why China won’t map the Pacific* (Melbourne: LaTrobe University Press, 2020), p. 49.

7 Andrew Kennedy, ‘Technology: Rapid Ascent and Global Backlash’, *China Story Yearbook: Power*, 2019 (Canberra: ANU Press).

earlier “985 and 211 model” and the more recent “Double First Class” policy.⁸ Significant resources are now devoted to elevating a relatively small number of institutions (in the case of Double First Class, around 42) into a ‘Chinese Ivy League’ of elite universities, which excel in both teaching and research and are highly internationalised on both fronts. The Ministry of Education’s Education Modernisation 2035 Plan attests to the long-term vision of a government intent on developing world-class education and research institutions.⁹

Sending China’s top students to study abroad has long been part of the Ministry of Education’s talent cultivation policy. From the handfuls of students sent abroad in the 1970s, the China Scholarship Council now finances the studies of around 65,000 Chinese students abroad each year, mostly for post-graduate degrees. These scholarships are often conditional on the recipient agreeing to return to China for at least two years upon completion of study, although evidence suggests that many students are intent on remaining in the US.¹⁰

Partly in response to this “brain drain”, in the last decade the Chinese government has made a concerted effort to attract talent back to, or into China, to cultivate its R&D capacity in science and technology in particular. In the decade since its inception in 2008, the “Thousand Talents Plan”, under the Ministry of Science and Technology, incentivised over 7,000 high-level and leading foreign and Chinese academics, experts and entrepreneurs working and studying abroad to return to or work in China.¹¹ With a focus on recruits that could “make breakthroughs in key technologies or serve as leaders in newly emerging scientific fields”,¹² expertise has been drawn not only into Chinese universities, but also foreign and private enterprises, high-tech development zones, state-owned research laboratories, and major scientific programs.

The Thousand Talents Plan has been integral to China’s strategy of Civil-Military fusion, which has gained prominence in recent years. Dating back to the 1990s, it was enshrined in China’s 13th Five-year-plan (2016–2020) as a national policy priority, with President Xi himself taking charge of a new Central Commission for Integrated Military and Civilian Development in 2018.¹³ In 2018, China expanded the Ministry of Science and Technology’s powers significantly, incorporating both the State Administration of Foreign Expert Affairs and the National Natural Science Foundation of China into a new “super-Ministry”, with the explicit goal of attracting and retaining foreign experts in China.¹⁴ While the Thousand

8 For more detail on the 985 and 211 models, see China Education Center, University of Nottingham, Project 211 and 985, online at: <https://www.chinaeducenter.com/en/cedu/ceduproject211.php> [Accessed 25 July 2020]

9 Ministry of Education, China, ‘Action Plan on Higher Education AI innovation’, April 2018. http://www.moe.gov.cn/srcsite/A16/s7062/201804/t20180410_332722.html [Mandarin] [Accessed 28 July 2020].

10 Despite this conditionality, up to 90% of Chinese STEM PhDs intend to stay in the US and career outcome research shows that more than 80% do so, even as across the board, return rates of Chinese students from the US continue to rise. See Ryan Fedasiuk, ‘CSET Issue Brief: The China Scholarship Council: An Overview’, Center for Security and Emerging Technology, July 2020: p. 6.

11 Hepeng Jia, ‘China’s plan to recruit talented researchers’, *Nature*, 17 January 2018, <https://www.nature.com/articles/d41586-018-00538-z> [Accessed 29 July 2020].

12 Andrew Kennedy, ‘China’s rise as a science power’, *Asian Survey*, Vol 59, No. 6, December 2019,

13 Brian Lafferty, ‘Civil-Military Integration and PLA Reforms’, in Phillip C. Saunders et al (eds) *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, (Washington: National Defense University Press, 2019).

14 Hepeng Jia, “China’s science ministry gets more power to attract foreign scientists”, *Nature Index*, 23 March 2018, <https://www.natureindex.com/news-blog/chinas-science-ministry-gets-power-to-attract-more-foreign-scientists> [Accessed 15 July 2020].

Talents Plan was abolished that year, the goal of attracting foreign experts through lucrative research contracts and funding continues through the new “High-end Foreign Experts Recruitment Plan”. Inaugurated in 2019, the new Plan lists “strategic technology development’ as its top priority, with the same fundamental objective of “introducing in China a batch of high-level foreign experts in key priority fields, to contribute to the country’s sci-tech innovation development”.¹⁵ In tandem with these developments, China has built up an array of similar programs at national, provincial and local levels, aimed at attracting foreign academics to China.¹⁶

In the last decade, China has also begun to build up its scholarships program to attract foreign students to study in China, awarding an additional 65,000 scholarships annually (worth some US\$469 million in 2018).¹⁷ In 2019, Xi Jinping announced that 50,000 full-ride scholarships would be awarded to African students over the next three years.¹⁸ UNESCO reported in June 2020 that China now offers more scholarships to African students than Western countries combined.¹⁹ Through these state-directed efforts, alongside significant growth in self-funded students in both directions, China is on track to become the only nation apart from the US to be both a major importer and exporter of students and education.

Some of these efforts may be viewed as an attempt by the Chinese government to build up its “soft power”. Soft power is a state’s capability to influence others through the mechanism of attraction rather than coercion or inducements, and arises from the attractiveness of a nation’s culture, political ideals, and foreign and domestic policies.²⁰ Universities are key mechanisms of attraction because they enable visiting international students and researchers to experience a country’s culture and politics personally, cultivating a positive image they take back to their home countries. China’s use of scholarships for foreign students can certainly be viewed as a soft-power initiative in this regard.²¹ Yet these scholarships, alongside the range of talent cultivation policies, may also have broader geopolitical goals that are inconsistent with the objectives of others.²²

15 China Innovation Funding, ‘China’s high end foreign experts recruitment plan (2019 Annual Call)’, 31 December 2019, <http://chinainnovationfunding.eu/project/2019-high-end-foreign-experts-recruitment-plan/> [Accessed 15 July 2020].

16 Some of these programs are listed in the EU China Innovation Funding database, <http://chinainnovationfunding.eu/chinese-funding-database/> [Accessed 29 July 2020].

17 Ryan Fedasiuk, ‘CSET Issue Brief: The China Scholarship Council: An Overview’, Center for Security and Emerging Technology, July 2020, p. 3.

18 Jevans Nyabiage, ‘Scholarship offers driving China’s soft-power play in Africa’, *South China Morning Post*, 28 September 2019, <https://www.scmp.com/news/china/diplomacy/article/3030570/scholarship-offers-driving-chinas-soft-power-play-africa> [Accessed 20 July 2020].

19 UNESCO Global Education Monitoring Report 2020 as referenced in Andrew Jack, ‘China surpasses Western government African university scholarships’, *Financial Times*, 24 June 2020, <https://www.ft.com/content/4b2e6c1c-83cf-448a-9112-477be01d2eee> [Accessed 28 June 2020].

20 Joseph Nye, *Soft Power: The means to success in world politics* (New York: Ingram, 2005), pp. 11-15.

21 David Shambaugh, *China Goes Global: The Partial Power* (Oxford: Oxford University Press, 2013), pp. 241-24 and Chen Jia, ‘Class Act Promotes Global “Soft Power”’, *China Daily*, 11 November 2010.

22 As one example, China’s “soft power” push into the education market in the Pacific is noteworthy. Diplomatic competition between the PRC and the Taiwan in the region—where six of Taiwan’s remaining seventeen allies are located—has intensified since 2016, and the provision of scholarships is a key component of that competition. By 2018, 1,317 students from China’s allies in the region—dominated by Papua New Guinea with 440—had been awarded under the bilateral scholarship scheme, with numbers rising over the past decade. See Denghua Zhang and Jessica Marinaccio, ‘Chinese and Taiwanese Scholarships for Pacific Island Countries’, In Brief 2019/10, *Department of Pacific Affairs* (Canberra: The Australian National University, 2019).

Coupled with the rapid expansion of China's presence in this increasingly globalised domain, the result is that these activities can be viewed through a geoeconomic lens.

The expansion of Confucius Institutes has been another significant development in China's approach to globalised education, which further illustrates this point. Established to promote the teaching of Chinese language and culture internationally, there are now more than 500 Confucius Institutes worldwide, with a US Senate report estimating that China has spent more than US\$2billion on the network since 2008.²³ China's Ministry of Education regularly references "national soft power and influence" as objectives of the Confucius Institutes, following a logic that echoes the objectives of other language and cultural institutes, like Germany's Goethe Institutes and France's Alliance Française.²⁴ But in recent years, the Chinese model has revealed itself to differ from its European counterparts, with some arguing that Confucius Institutes have become an instrument of Chinese "sharp power", through which Beijing has sought to "penetrate and subvert politics, media and academia, surreptitiously promoting a positive image of the country, and misrepresenting and distorting information to suppress dissent and debate".²⁵ Others argue that the institutes provide a channel for Beijing's "sophisticated global censorship regime"²⁶ and "turn universities themselves into agents whose interests lies in enforcing the Chinese government's implicit speech codes".²⁷

Beijing has also shown an explicit willingness to disrupt economic relations directly in the context of bilateral disputes with target governments. For example, Taiwan suffered a drop in Chinese student enrolments in 2017, following a tightening of restrictions on mainland student permits because National Cheung Kung University (in Tainan) was "engaging in pro-Taiwan independence activities".²⁸ In 2020, Australia looked set to become the next target (discussed further below).

In sum, substantial investments in expanding its domestic education and research capacities have long been motivated by China's drive for economic growth and development, and need not be seen as inherently "geoeconomic" in this regard. But the scale of these investments and the resultant growth in China as a major player in the sector, combined with a range of other economic tools and incentives deployed both domestically and abroad, highlight the extent to which the sector is central to China's geopolitical objectives—transforming the country into a global techno-power and delivering President Xi Jinping's goal of rejuvenating the nation. These developments have caused geopolitical consequences for the United States, affecting Washington's

23 United States Senate staff report, 'China's Impact on the U.S. Education System', 2019, <https://www.hsgac.senate.gov/imo/media/doc/PSI%20Report%20China%27s%20Impact%20on%20the%20US%20Education%20System.pdf> [Accessed 4 May 2020].

24 Ministry of Education, China, 'Efforts towards open development of education', December 2017, http://www.moe.gov.cn/s78/A21/A21_ztzt/ztlz_sjdz/sjdz_btft/201712/t20171221_322106.html [Accessed 20 July 2020].

25 See 'How China's sharp power is muting criticism abroad', *The Economist*, 14 December 2017, <https://www.economist.com/briefing/2017/12/14/how-chinas-sharp-power-is-muting-criticism-abroad> [Accessed 20 March 2019].

26 Isaac Stone Fish, 'The other political correctness: why are Americas elite universities censoring themselves on China?', 4 September 2018, *New Republic*, <https://newrepublic.com/article/150476/american-elite-universities-selfcensorship-china> [Accessed 4 May 2019].

27 Cited in Fish (2018), *ibid*.

28 Yojana Sharma and Mimi Leong, 'Geopolitics are hitting Chinese student flows in Asia', *University World News*, 31 August 2017, <https://www.universityworldnews.com/post.php?story=20170831151622921> [Accessed 10 March 2019].

capacity to pursue its own national security and geopolitical goals which, in turn, has led to a drastic recalibration of US geoeconomic strategies in its university sector, as the next section attests.

3. The US Context: From “Soft-power” attraction to strategic rivalry and “decoupling”

Following the normalisation of the US-China relationship in 1972, and the commencement of China’s ‘economic reforms and opening up’ in 1978, the US adopted an approach of actively engaging international students and researchers in its university sector, including those from China. The dominant perception in the US for the subsequent three decades was that efforts to attract inbound foreign students would confer a soft power advantage for the US government and substantial revenue benefits for its university sector. This approach explicitly acknowledged that enhancing the knowledge and skills of the next generation of Chinese entrepreneurs, researchers and policy-makers would improve America’s own prospects for sustained economic growth. As John Pomfret describes the situation in 1978, “the idea was to create bonds of friendship between the two countries and exert what later came to be known as America’s ‘soft power’ on the hearts and minds of the Chinese.”²⁹ Then Secretary of State Colin Powell reiterated this point in his statement on International Education Week in 2001: “I can think of no more valuable asset to our country than the friendship of future world leaders who have been educated here.”³⁰

Universities are key mechanisms of attraction because they enable visiting international students to experience a country’s culture and politics personally, cultivating a positive image they take back to their home countries. Advocating in 2005 for higher education policies focused on soft power, Joseph Nye argued for “less restrictive visa policies and for more expeditious handling of visa requests”.³¹ This kind of thinking characterised the US approach to transnational education and research for decades, with the attraction of foreign talent through US universities powering the US research and innovation system, and the economy more broadly. For example, almost 60% of PhD-qualified computer scientists and engineers in the US workforce in 2017 were born overseas, with the large majority coming from India (#1) and China (#2).³²

In the last decade, however, the bilateral relationship has become increasingly vexed, with US policy shifting (gradually, and then abruptly) away from the logic of openness towards viewing education and research as potential sources of vulnerability in the context of strategic rivalry with China.

29 John Pomfret, ‘Chinese cash at American colleges is a massive problem’, 23 August 2018, <https://supchina.com/2017/08/23/john-pomfret-chinese-cash-american-colleges-massive-problem/> [Accessed 10 March 2018]

30 American Association of State Colleges and Universities, ‘Full Statement: National Security and Internationalization’, <http://globaled.us/now/fullstatementaascu.html#15> [Accessed 4 August 2020]

31 Joseph Nye, ‘Soft Power and Higher Education’ 1 January 2005, <https://library.educause.edu/-/media/files/library/2005/1/ffp0502s-pdf.pdf> p.14 [Accessed 10 September 2019]

32 National Science Board, ‘Immigration and the S&E Workforce’, <https://ncses.nsf.gov/pubs/nsb20198/immigration-and-the-s-e-workforce> [Accessed 12 October 2020].

During this period, US universities became increasingly reliant on money brought in by foreign students, and especially those from mainland China. Faced with budget cutbacks as a result of the Global Financial Crisis, many public universities drastically increased their numbers of foreign students.³³ The number of foreign students with F-1 visas newly enrolled in US colleges and universities more than doubled between 2008 and 2016, in contrast with just 3.4% for enrolment growth overall.³⁴

By 2017, roughly 350,000 Chinese students were estimated to be studying in US universities, more than five times the number a decade earlier.³⁵ Yet as financial inflows reached new highs, these deep levels of interdependence began to trigger geoeconomic concerns. To begin, increased financial dependency raised concerns within the sector about its financial vulnerabilities to potential leverage that the PRC government could use against it. This includes fears that Beijing could create pressure for universities or academics to limit their academic freedom in order to maintain funding (alongside growing concern about the presence of Confucius Institutes on US campuses), or that it could discourage Chinese nationals from studying in the US, to an extent that could inflict serious financial damage on targeted states or universities.

These growing concerns within US universities about dependency, leverage and censorship are intertwined with Washington's increasing (and bipartisan) focus on China as a strategic competitor. Viewed through the lens of strategic competition, the university sector is seen as a rising source of security vulnerability, as well as a battleground for technological leadership. Testifying in Congress in February 2018, FBI Director Christopher Wray criticised universities for their "naivete" about risks to US national security from China. While previous administrations took steps to address the theft of intellectual property from universities and companies, the Trump Administration made this a major focus, with Wray saying that countries like China were exploiting the open research and innovation system that America has led for decades and that the threat to the US would require a "whole-of-society" response. These concerns feed into deeper anxieties about a loss of technological leadership, as evidenced by the "Second Place America?" report released in May 2019 by the Task Force on American Innovation.³⁶

Since 2018, a number of significant policy changes reflecting the logic of geoeconomics have been proposed and implemented in the university sector, in three key areas: visas and immigration; foreign funding and conflict of interest in research; and export controls. These have had major impacts on the international education and research activities of US universities.

33 John Pomfret, 'Chinese cash at American colleges is a massive problem', 23 August 2017, <https://supchina.com/2017/08/23/john-pomfret-chinese-cash-american-colleges-massive-problem/> [Accessed 23 August 2018]

34 Neil G. Ruiz and Jynnah Radford, 'New foreign student enrolment at U.S. colleges and universities doubled since Great Recession', Pew Research Center, 20 November 2017, <http://www.pewresearch.org/fact-tank/2017/11/20/new-us-foreign-student-enrollment-doubled-since-great-recession/> [Accessed 6 June 2020]

35 Institute for International Education, 'International Students; All Places of Origin', Open Doors Report, November 2019, <https://opendoorsdata.org/data/international-students/all-places-of-origin/> [Accessed 12 August 2020].

36 Tobin Smith et al, 'Second Place America?: Increasing Challenges to U.S. Scientific Leadership', May 2019, <http://www.innovationtaskforce.org/wp-content/uploads/2019/05/Benchmarks-2019-SPA-Final4.pdf> [Accessed 18 May 2019].

As part of its broader immigration agenda, the Trump Administration used visa policy specifically to limit Chinese students and researchers. In 2018, the administration reduced visas for Chinese graduate students working in select fields of science and technology (robotics, advanced manufacturing and aviation) from 5 years to 1 year. In May 2020, President Trump issued a proclamation banning Chinese post-graduate students and researchers with links to any entity that “implements or supports the PRC’s ‘military-civil fusion strategy’” from entering the United States. The State Department issued conflicting advice on how narrowly the proclamation will be interpreted in practice, on the one hand saying that most Chinese nationals would continue to be welcome, but also saying that “the entire Chinese university system” could be considered to be connected to the military-civil fusion strategy.³⁷

In parallel, US research funding agencies and government departments have issued new guidelines on reporting international collaboration and funding; issued bans on researchers participating in the Thousand Talents Plan; and stipulated new funding rules, including that federally-funded foreign language education cannot be provided alongside a Confucius Institute. By July 2020, around 45 US universities had announced the closure of their Institutes (with 75 still remaining).³⁸ Law enforcement agencies have arrested and charged researchers for lying about dealings with Chinese counterparts.³⁹ In October 2020, the Secretary of State and the Secretary of Education sent a joint letter to all US university presidents about Chinese influence on American campuses.⁴⁰ In particular they highlighted risks to students and to academic freedom from the new Hong Kong National Security Law and Confucius Institutes. The Department of Education also released a report on compliance by US universities with reporting requirements under the *Higher Education Act*, which stated that the Department had found “pervasive noncompliance” with requirements for the reporting of foreign funding.⁴¹

The Trump Administration also explicitly targeted China in its use and expansion of export controls, through both the Department of Defense and Department of Commerce. Discussions have been underway since 2018 about broadening the existing export control regime to cover more areas of critical and emerging technologies, such as artificial intelligence and quantum science. But final agreement has been hard to reach, given the difficulties in drawing a hard line around fast-moving areas of technology, without curtailing American innovation and competitiveness. Through the Commerce

37 Christopher A. Ford, ‘Technology Transfers to the PRC Military and U.S. Countermeasures: Responding to Security Threats with New Presidential Proclamation’, *State Department Arms Control and International Security Papers*, Vol. 2, Number 9, 5 June 2020, p. 4.

38 Rachele Peterson, National Association of Scholars, ‘Confucius Institutes in the US that are closing’, July 2020, <https://www.nas.org/storage/app/media/Reports/Outsourced%20to%20China/confucius-institutes-that-closed-updated-july-1-2020.pdf> [Accessed 1 August 2020].

39 U.S. Department of Justice, ‘Harvard University Professor and Two Chinese Nationals Charged in Three Separate China Related Cases’, 28 January 2020, <https://www.justice.gov/opa/pr/harvard-university-professor-and-two-chinese-nationals-charged-three-separate-china-related> [Accessed 4 November 2020].

40 Michael Pompeo and Betsy DeVos, ‘Joint Letter to Presidents of American Institutions of Higher Education and Affiliates Regarding the People’s Republic of China’, 9 October 2020, <https://www.state.gov/joint-letter-to-presidents-of-american-institutions-of-higher-education-and-affiliates-regarding-the-peoples-republic-of-china/> [Accessed 20 October 2020].

41 U.S. Department of Education Office of the General Counsel, ‘Institutional Compliance with Section 117 of the Higher Education Act of 1965’, October 2020, <https://www2.ed.gov/policy/highered/leg/institutional-compliance-section-117.pdf> [Accessed 20 October 2020].

Department's "entity list", the Trump Administration also sought to limit engagement with Chinese companies in key sectors, for example listing leading Chinese telecommunications companies Huawei and ZTE and their overseas subsidiaries.⁴² The targeting of Chinese organisations has extended to universities, with the listing in May 2020 of Chinese universities including the Harbin Institute of Technology, known as "China's MIT".⁴³

The *Safeguarding American Innovation Act*, bipartisan legislation introduced in Congress in June 2020, is designed to "stop foreign governments, particularly China, from stealing American taxpayer-funded research and intellectual property developed at U.S. colleges and universities".⁴⁴ While not yet law at the time of writing, this proposal provides a clear sign of how far US policy has shifted from its three-decade long approach of active international engagement with students and researchers in the university sector. The legislation is explicitly motivated by geoeconomic concerns, with China front and centre, most prominently the simple idea that the United States has a national security interest in limiting —and even in some cases closing off entirely—the flow of knowledge and technology to its strategic rival. Meanwhile, many in the sector worry that the legislation will "undermine innovation by making US institutions less attractive to foreign scholars and increase paperwork requirements, without making them safer".⁴⁵

In sum, the recent trend in the US has been a shift away from a strategy of welcoming Chinese (and other foreign) students and researchers to enhance US capabilities in education and research, towards a more closed and rivalrous approach that amounts to "decoupling" in the university sector, mirroring the trajectory of US-China tensions more broadly. This shift appears to have bipartisan support in Washington, as seen in a State Department letter to US universities in August 2020, declaring that "standing up to increasingly aggressive behaviour" from the CCP has "become one of the most passionately unifying bipartisan issues of our time".⁴⁶

This new approach is emblematic of the two empirical trends that characterise the logic of geoeconomic competition: the use of an array of economic policies in pursuit of national (technological) power, and an explicit emphasis on the risks and vulnerabilities of engagement with China across the spectrum of university activities. It is sourced in an increased awareness of dependency on Chinese funding, alongside perceptions of CCP attempts to censor academic freedom and engage in intellectual property theft. This latter concern has been exacerbated by an accelerated Chinese civil-military integration and

42 U.S. Department of Commerce, 'Department of Commerce Announces the Addition of Huawei Technologies Co. Ltd. to the Entity List', 15 May 2019, <https://www.commerce.gov/news/press-releases/2019/05/department-commerce-announces-addition-huawei-technologies-co-ltd> [Accessed 4 November 2020].

43 U.S. Department of Commerce, 'Commerce Department to Add Two Dozen Chinese Companies With Ties to WMD and Military Activities to the Entity List', 22 May 2020, <https://www.commerce.gov/news/press-releases/2020/05/commerce-department-add-two-dozen-chinese-companies-ties-wmd-and> [Accessed 4 November 2020].

44 Rob Portman, 'Media Release: Portman, Carper, Rubio, Senate Colleagues introduce bipartisan legislation to stop theft of U.S. research and intellectual property by global competitors', 18 June 2020, <https://www.portman.senate.gov/newsroom/press-releases/portman-carper-rubio-senate-colleagues-introduce-bipartisan-legislation> [Accessed 19 June 2020].

45 Jeffrey Mervis, 'Research security bill advances in U.S. Senate despite opposition from research groups', *Science Magazine*, 23 July 2020, <https://www.sciencemag.org/news/2020/07/research-security-bill-advances-us-senate-despite-opposition-research-groups> [Accessed 12 October 2020].

46 Keith Krach, 'Letter from Under Secretary Keith Krach to the Governing Boards of American Universities', 18 August 2020, https://www.state.gov/letter-from-under-secretary-keith-krach-to-the-governing-boards-of-american-universities/?utm_medium=email&utm_source=FYI&dm_i=1ZJN,70DHP,UMMIMG,S97V3,1 [Accessed 19 August 2020].

two-way transfer of military and civilian technologies, alongside the rapid expansion of China's domestic technological capabilities more broadly.⁴⁷ In this new and evolving strategy, a range of geoeconomic tools are deployed to reduce vulnerabilities, defend America's national security, and prosecute major power rivalry. While there is much uncertainty surrounding the future trajectory of US-China relations, there seems little doubt that geoeconomic—rather than purely economic—considerations will dominate decision making by both major powers, including in the higher education and research spheres.

4. The Australian Context: Navigating the geoeconomics of the university sector

Australia has been a particular success story in the internationalisation of higher education and research over the last two decades. Australia ranks third in the world in terms of the number of international students and, on a per capita basis, has five times as many international students as the United States.⁴⁸ Australia also ranks second in the world in the level of internationalisation in its research output.⁴⁹ This level of internationalisation has brought huge benefits to Australia, as described by Peter Varghese:

“[B]eyond the economic benefits, international students deepen our regional links, reinforce our foreign policy objectives, strengthen Australia's soft power and broaden the horizons of Australian students. They also create a network of alumni in Asia who know Australia first hand, occupy significant positions and for the most part have a very positive attitude towards us.”⁵⁰

China has been a major contributor to this success story. Australia's education and research links with China have grown rapidly in recent decades, with almost 30% of all international student enrolments in Australian universities in 2019 coming from China—close to double the share of India, in second place.⁵¹ That percentage is even higher in some leading Australian universities.

In research and innovation, Australia produces only 2-3% of the world's new knowledge each year, so its rankings and impact in global terms rely strongly on international collaborations.⁵² Research links with Chinese collaborators have increased rapidly,

47 Office of the United States Trade Representative, Executive Office of the President, 'Findings of the Investigation into China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation under Section 301 of the Trade Act of 1974', 22 March 2018, <https://ustr.gov/sites/default/files/Section%20301%20FINAL.PDF> [Accessed 27 July 2020].

48 Salvatore Barbone, 'The China Student Boom and the Risks it Poses to Australian Universities', Centre for Independent Studies: Analysis Paper 5 (August 2019), p. 4.

49 National Science Board, 'International Research Collaboration', <https://ncses.nsf.gov/pubs/nsb20201/global-science-and-technology-capabilities#international-research-collaboration> [Accessed 7 March 2020].

50 See Peter Varghese, 'Australian Universities and China: Speech given to the 2018 National Conference on University Governance', 4 October 2018, <http://www.uq.edu.au/about/australian-universities-and-china> [Accessed 20 November 2018].

51 Department of Education, Skills and Employment, Australian Government 'Student Numbers', July 2020, <https://internationaleducation.gov.au/research/DataVisualisations/Pages/Student-number.aspx> [Accessed 4 July 2020].

52 James Laurenceson and Michael Zhou, 'Partners in knowledge creation: trends in Australia-China collaboration and future challenges', Working Paper, Australia-China Relations Institute, University of Technology Sydney, 19 July 2019, <https://www.australiachinarelations.org/content/working-paper-partners-knowledge-creation-trends-australia-china-research-collaboration-an> [Accessed 15 September 2019].

to the point where co-authors affiliated with a research institute in mainland China overtook those with US affiliations in 2019 as the most common international co-authors by Australian-based researchers, including in key areas of research such as science and engineering.⁵³

The benefits the Australian university sector—and the country more broadly—accrue from engagement with China are patent. In recent years, however, the potential costs and national security risks of Australia’s high levels of global integration in education and research, especially with China, have tracked the United States in terms of their rise in salience in public and policy discourses. The emergence of a geoeconomic dimension in the Australian university sector thus presents policymakers with a complex set of challenges. The nature of the national security risks must be identified along with possible ways of mitigating them, before integrating this knowledge with a sophisticated understanding of the structure of the university sector. The goal is to formulate targeted policies that mitigate the underlying risks while minimising the economic costs that mitigation strategies impose. At least three risks relating to national security are clear.

The first arises from the high dependence of the Australian university sector on Chinese students as a source of revenue. In June 2020, Australia looked set to become a target of Beijing’s coercive tactics, with the Ministry of Education warning Chinese students to reconsider studying in Australia. While the warning was attributed to the rise in “racist incidents” during the COVID-19 pandemic, it was widely perceived in Australia as part of a campaign of economic retaliation for the Federal government’s decision to push ahead with an independent inquiry into the early handling of the virus.⁵⁴

The second risk concerns the end use of Australian research outputs. While intellectual property theft is just as much a concern for Australia as it is for the United States, the smaller scale of the Australian market has meant that policy discourse has focused more on a related concern—that the benefit of some collaborations between researchers based in Australia and those in China could serve purposes that are at odds with Australian national interests, values and security. These concerns are broad in scope, and include the development of technologies that are used by companies to enhance the repressive apparatus of the Chinese Communist Party. They also extend to collaborations—in both the teaching and research domains—with individuals and groups with links to the People’s Liberation Army, with the consequence of providing strategic or battlefield advantage to a foreign military with increasingly divergent interests.⁵⁵ More recently, there has been rising concern in Australia about the transfer of valuable technology and research knowledge via China’s Thousand Talents Plan and other recruitment problems, often amid conflicts of interests or in violation of university policies.⁵⁶

53 Measured by peer-reviewed journal articles. Laurenceson and Zhou, *ibid*.

54 Bill Birtles, ‘China cautions students about “racist incidents” if they return to Australia during the coronavirus’, *ABC News Online*, 9 June 2020, <https://www.abc.net.au/news/2020-06-09/china-warns-students-not-to-return-to-australia-after-coronaviru/12337044> [Accessed 20 June 2020].

55 Alex Jokse, ‘Picking flowers, making honey’, *Australian Strategic Policy Institute Policy Brief* No.10/2018, 30 October 2018, <https://www.aspi.org.au/report/picking-flowers-making-honey> [Accessed 30 January 2019].

56 Alex Jokse, ‘Hunting the Phoenix: the Chinese Communist Party’s global search for technology and talent’, *ASPI Policy Brief* No. 35/2020, <https://www.aspi.org.au/report/hunting-phoenix> [Accessed 10 August 2020].

Third, like the United States, Australia is also grappling with foreign interference issues. These include the PRC government's capacity to impose direct and indirect threats to academic freedom in Australian universities, and the concern that Confucius Institutes may represent channels of interference and otherwise conduct activities contrary to Australia's national interests. As John Fitzgerald has argued, research collaborations between Chinese and Australian universities may "risk compromising academic freedom and the liberal values of Western higher education" because "China's education and research systems are arms of the party-state and the government of China is openly hostile to the idea of academic freedom... These differences are not trivial when university partners from Australia and China come together to transact agreements for mutual benefit".⁵⁷

Australia's situation is further complicated by an additional factor: the possibility Washington will demand Australia follow its pathway in adopting stricter controls on both inbound students and researchers and the sharing of knowledge, beyond what Australian authorities judge is necessary to safeguard Australian interests. This scenario would mean the perennial alliance management issues faced by Australian governments would now have an added geoeconomic dimension. Indeed, the recent US policy changes outlined above have coincided with calls for Australia and other Five Eyes countries to form a "Coalition of Caution" and adopt similarly restrictive policies.⁵⁸ While Canberra is familiar with managing defence policy scenarios where Australian and US interests do not overlap entirely, a divergence of geoeconomic strategic interests would present a new sort of challenge.

Towards a geoeconomic policy framework

The geoeconomics of the university sector presents policymakers with a series of complex and cross-cutting interests and risks. Policymakers will need to assess the likelihood that identified risks materialise and the (direct and indirect, short- and long-term) costs of mitigating those risks using a myriad of possible tools. They will also require extensive knowledge of the university sector and its spill-overs into the national economy, thus requiring expertise beyond traditional defence policymaking hubs.

Mitigating the university sector's vulnerability to economic coercion requires assessments of three factors. The first is whether Beijing has the capability to cause a reduction (or halt) in student flows. This is an open question that requires a much deeper understanding of both the regulatory landscape through which the Chinese government oversees outbound higher education, and the ability of Chinese consumers to exercise their preferences. For example, given international higher education remains highly valued among China's middle class, an outright ban might be politically unpopular with parents and students. If this were true, propaganda campaigns using state-controlled media, even coupled with consistent travel warnings, might not dampen demand greatly.

57 John Fitzgerald, 'Intellectual freedoms challenged by Australian universities uncritical embrace of China', *Australian Financial Review*, 7 September 2017, <https://www.afr.com/news/policy/education/intellectual-freedoms-challenged-by-universities-uncritical-embrace-of-china-20170904-gya1pk> [Accessed 10 June 2020].

58 See Jane Golley, Paul Harris and James Laurenceson, 'Campus Conundrums: Clashes and Collaborations', *China Story Yearbook China Dreams*, (Canberra: ANU Press, 2020), p. 259.

The second factor is measuring the financial, employment and downstream economic costs should a given reduction in student flows occur. Insight into this question will (unfortunately) emerge as the short- and medium-term impacts of COVID-19 on enrolments became clear.

Third, if the risks and costs of disruption are judged to be substantial, how can these be mitigated? Different mitigation strategies involve different trade-offs: diversifying to other markets will be a slow process and involve significant short- and medium-term hits to university budgets, particularly given the vast size of the Chinese student population. Subsidising the university sector during a disruption would be costly, contributing to a growing fiscal deficit in the short term that would ultimately be borne by Australian taxpayers. Doing nothing, and allowing the financial losses to cause permanent damage to the sector, would also bring significant short-term costs in terms of employment, and long-term costs in terms of the nation's capacity for innovation and technological advancement, and hence its prosperity.

Mitigating the second risk—that of either losing Australia's capacity for world-class research or producing collaborative research that ultimately may damage the national interest—is no less complicated. To begin, both universities and the government need a greater shared awareness of the benefits and risks of cooperative research partnerships and relationships between Australia-based and China-based researchers, especially as they apply for taxpayer-funded research. The Australian Research Council commenced work with national security agencies in 2018 to strengthen the application processes and oversight of government funded research. The government has also set up an integrity unit within its Tertiary Education Quality and Standards Agency “with a remit to identify and analyse emerging threats to the quality of higher education and to assist the sector to address them across academic and research integrity, cyber security, foreign interference and admission standards”.⁵⁹ In late August 2020, the federal government announced legislation to empower it to block agreements between universities and foreign governments, which would require universities to take stock of all existing agreements and submit them to federal oversight.⁶⁰

Targeted responses are essential given the Australian sector's heavy reliance on international collaborations and the fact that research cannot easily be split into “sensitive” and “non-sensitive” sectors without causing significant collateral damage. Accordingly, where the government sees the need to restrict certain types of research, a targeted approach could consider building separate labs for defence-related and other sensitive work (with additional controls for physical security) so that the rest of campus could then stay as open as possible, albeit with improved oversight. It may even be that particularly sensitive research needs to be conducted outside the university sector (for example, in institutions like the CSIRO), given that most research done by universities is published in open-access literature, making it difficult to prevent outsiders from accessing the research being conducted within university labs.

59 Peter Dutton and Dan Tehan, ‘Joint Media Release: Strengthening the integrity of research’, 24 August 2020, <https://minister.homeaffairs.gov.au/peterdutton/Pages/strengthening-the-integrity-of-research.aspx> [Accessed 24 August 2020].

60 Scott Morrison and Marise Payne, ‘Media Release: Ensuring a Consistent Australian Foreign Policy’, 27 August 2020, <https://www.liberal.org.au/latest-news/2020/08/27/ensuring-consistent-australian-foreign-policy> [Accessed 29 August 2020].

The Australian government has also taken action to mitigate the third risk: threats to academic freedom and foreign interference. In November 2018 the government instigated a review into the state of freedom of speech on university campuses and in August 2019 it established a taskforce charged with “the development of best practice guidelines to counter foreign interference in the Australian university sector”.⁶¹ The guidelines were released in November 2019 and took a deliberately collaborative and “country-agnostic” approach.⁶² Though even here, the possibility that good-faith efforts to preserve Australian values will be perceived by Beijing as an attack on their interests, thus triggering retaliatory actions, remains real.

The legislation proposed in August 2020 will lead to a review of existing and prospective agreements between universities and foreign governments, and the blocking of those agreements that are deemed contrary to national interests. Increased transparency has the potential to support improved dialogue between universities and government about identifying and mitigating security risks, and preventing future risks from arising. But the legislation has also prompted concerns about the erosion of academic independence and institutional autonomy.⁶³ This legislation has the potential to be effective in mitigating this third set of risks as well, conditional on careful and clear assessments of the short- and long-term costs and benefits being conducted on a case-by-case basis. With the inclusion of “cultural collaborations” in the legislation, Confucius Institutes will come under review. If they are deemed to pose unacceptable security risks, an optimal geoeconomic response will simultaneously consider how to enhance Australia’s knowledge of Chinese language and culture in their absence.

On the alliance management question, there have been clear indications in high-level government-to-government interactions that both the US and Australian governments are keen to support stronger collaboration between universities and science agencies in both countries in key strategic areas of science and technology (such as space, cybersecurity, AI and quantum science) as a response to current geopolitical climate. Many Australian universities are already seeking to strengthen US collaboration—and access to US funding—in key areas of research. However, increased support from the US government would almost certainly be conditional on, at the very least, an expectation that Australian researchers would comply with their stricter funding rules, including ones about protecting against the transfer of certain types of research to Chinese students, researchers and institutions. Given Australia’s smaller population, and greater reliance on Chinese collaborations in research and innovation, the calculus of costs and benefits—for either complying with US demands, or choosing not to—will need to be Australia specific and focused clearly on Australia’s national interests, which may not always align perfectly with those of its major ally.

61 Department of Education, Skills and Employment, Australian Government, ‘News: Establishment of a University Foreign Interference Taskforce’, 29 August 2019, <https://www.education.gov.au/news/establishment-university-foreign-interference-taskforce> [Accessed 15 September 2019].

62 Department of Education, Skills and Employment, Australian Government, ‘Guidelines to Counter Foreign Interference in the Australian University Sector, 13 November 2019, <https://docs.education.gov.au/node/53172> [Accessed 7 October 2020].

63 Daniel Hurst, ‘Australian Researchers condemn “groundless vilification” of their work with China’, *The Guardian (Australia)*, 29 August 2020, <https://www.theguardian.com/science/2020/aug/29/australian-researchers-condemn-groundless-vilification-of-their-work-with-china> [Accessed 31 August 2020].

5. Conclusions

The university sector represents a compelling illustration of geoeconomic dynamics. Until recently, universities were viewed primarily as direct contributors to national economies, and indirect mechanisms to promote broader national interests, both through domestic spillovers created by research, and soft-power appeal internationally. At present, however, China's rise and rivalry with the United States have caused Western countries—and especially Australia—to perceive universities as vectors of national security vulnerability to be mitigated, given the rapid growth in China's own knowledge-generating capabilities and increasingly assertive behaviour abroad. The core tension at the heart of geoeconomic actions is that policies to mitigate security risks and defend power resources will often come at great cost, including undermining the openness and dynamism in research and education that create successful universities in the first place.

The primary purpose of this article has been to use universities to demonstrate this core tension. Actions by both the United States and China in recent years demonstrate how universities have become both intentional instruments of statecraft, and vectors for national security risks and vulnerabilities—suggesting that we are now entering an era of “geoeducation”. The US geoeducation strategy has shifted from “soft power” and “positive influence” to a restrictive and security-focused approach that is sceptical, and increasingly hostile, to the participation of and collaboration with foreigners, especially coming from China. Meanwhile, China's strategy combines elements of overt coercion and inducements with more subtle censorship activities, and is backed by (potential) leverage, significant government investments and a fusion of the sector with the broader political, economic and military apparatus of the state.

As with many other policy domains, Australia's geoeducation strategy will face difficult and costly trade-offs in balancing the economic and innovation benefits of remaining open to engagement with China, against national security and alliance management concerns that will orient the regulation of universities in ways more favourable to the United States and will likely be more restrictive overall. Some calculations are easy—yielding to coercive pressure or being subjected to foreign interference is never going to serve Australia's long-run interests, so pushing back will be essential, regardless of the economic costs that may ensue. But beyond that, optimal policymaking requires a detailed understanding of how universities operate, including how international student fees contribute to revenue and broader output and how new knowledge is created and applied for societal benefit. Some interventions to mitigate security risks will be relatively low cost, such as the emerging frameworks for preserving academic freedom and countering foreign interference. Ongoing efforts to improve transparency within all universities are also low cost, and with potentially high pay-offs.

Two policy areas pose the most complex trade-offs. The first is when vulnerabilities, or alliance management issues, point in the direction of closing off research partnerships, restricting access to foreign researchers or indeed banning certain types of visitors. Risk mitigation in these areas has the potential to do real damage to the vitality of Australia's research culture and the high global rankings of its universities, particularly for a country of its size. The second is where mitigating vulnerabilities requires significant investments, whether to subsidise the sector during a coercive episode, provide assistance in the process of diversification, or support knowledge building if alternative funding sources

are blocked. In all these instances, targeted mitigation strategies will need to carefully consider the least-disruptive and least-costly ways of solving the problem, with a clear focus on Australia's national interests, broadly defined.

Any geoeconomic strategy is likely to be more effective when applied to sectors for which the nation implementing the strategy has market power. In higher education, Australia is a strong performer in this regard, with few competitors for Chinese students seeking high-quality English-language education overseas. Given that its major competitors are also allies (US, UK and Canada), there is scope for working together—for example, in upholding academic freedom for all students and researchers, and building resilience to reduce the impact of coercive measures. But there will also be a need to recognise that Australia's national interests may not always align with its allies, and that flexibility and adaptability will be essential for formulating appropriate policy responses to the rapidly changing global “geoeducation” landscape.