

CHAPTER 2

Recruiting International Talent: Diverging National Policy Frameworks and Implications for Local and Global Prosperity

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INTRODUCTION

Research universities have always thrived on the free circulation of people and ideas. So too have national economies. Many countries — most famously, the United States — have benefited from their ability to attract talented newcomers, who have gone on to perform path-breaking research, establish major commercial enterprises and generate wealth and prosperity. However, recent political shifts — including the rise of populism, nativism and protectionism — have led to significant reversals of longstanding policies in certain countries, making it harder to recruit students and talented professionals from abroad.

This chapter documents the evolving policy frameworks in a number of major international jurisdictions, noting how they are creating increasingly divergent positions with respect to the recruitment of international talent. I then explore the larger implications arising from these increasingly divergent approaches. I will emphasize the growing risk and uncertainty facing not just higher education institutions but also the broader pursuit of innovation and

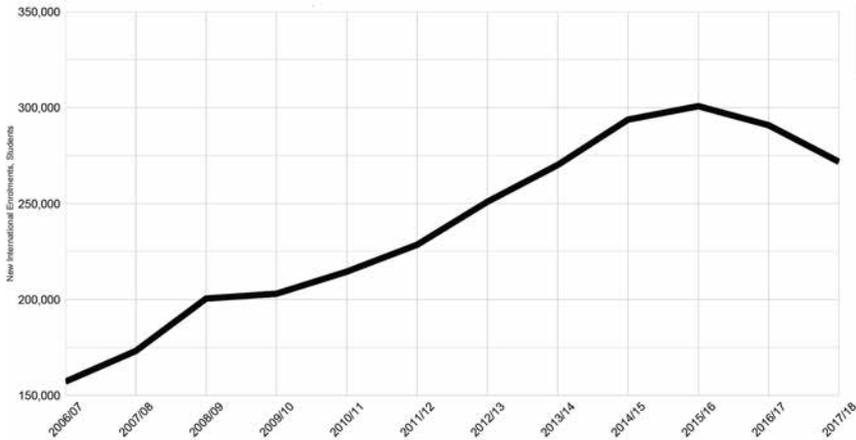
prosperity, and our ability to address grand societal challenges in an increasingly polarized and turbulent world.

DIVERGING APPROACHES TO INTERNATIONAL TALENT RECRUITMENT

The United States

Preliminary data for the US suggest that, in fall 2018, new enrolments of international students declined for the third consecutive year. These declines represent the only years of negative growth in the 12 years that the Institute of International Education (IIE) has tracked this metric (Baer, 2018) (Figure 1). The decline is most keenly felt in less selective colleges, master's-level and associates-level institutions, and universities in the Midwest, where 2017 saw particularly steep declines. For example, the *New York Times* reported that new international enrolment at the University of Central Missouri dropped by more than 60% in 2017 (Saul, 2018).

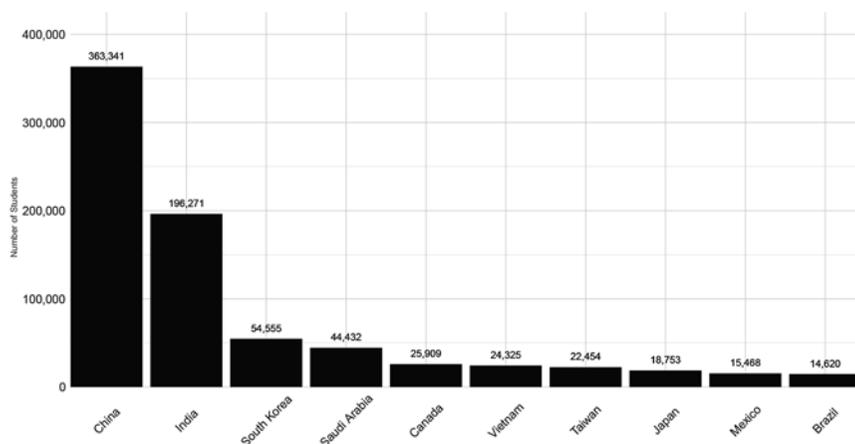
Figure 1 – US New International Enrolments, 2006-2017



These declines have been driven, for the most part, by fewer applications from international students. In a 2018 survey of higher education admissions professionals specializing in international recruitment, 53% reported declines in applications from international students for the 2017 academic year; 45% anticipated similar declines for the 2018 academic year. (IIE subsequently reported an actual 49% drop.) Applications from China, the Middle

East and North Africa, and India showed the biggest drops: 54%, 50% and 47% respectively (Schulmann & Le, 2018). This is especially noteworthy, as China and India together account for more than half of all international students in the United States (Figure 2).

Figure 2 – International Students in the US by Place of Origin, Top 10, 2017



What is causing these declines? Many factors undeniably affect the international flow of students. Competition from emerging regions (most notably, China) or established regions (Canada and Australia, for example) is a significant factor, as are steadily increasing US tuition fees and the decline of scholarship programs in source countries (e.g. Brazil and Saudi Arabia).

However, the survey of university admissions professionals mentioned above provides an important insight that can be traced back to national policies on globalization. When asked: “Which, if any, of the following had a negative impact on your institution in terms of meeting international enrollment targets? (select all that apply)”, the top three responses were, in order:

1. Political environment in the US (71% of respondents)
2. Increased visa delays or denials (60% of respondents)
3. Concern about securing a job or work visa in the US after studies (52% of respondents)

Aggressive and unwelcoming rhetoric from the White House has had — and is having — an impact. President Donald Trump is widely perceived to have articulated an isolationist, America-first, anti-immigration vision of

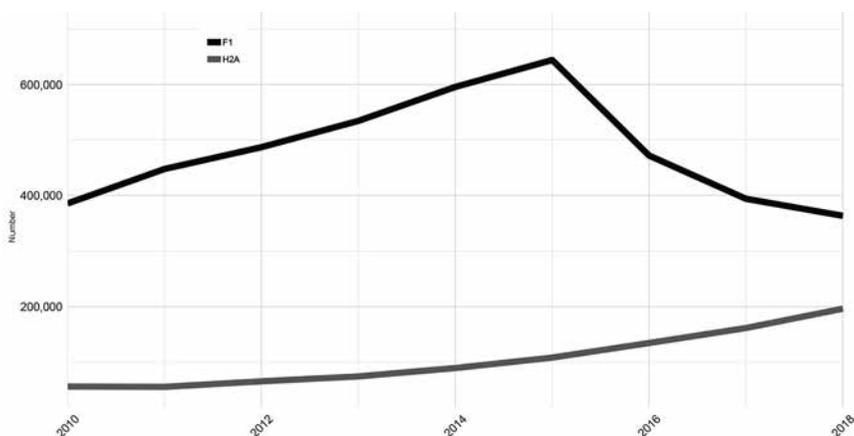
America's future. Since 2016, the Trump Administration has issued executive orders restricting immigration from certain predominantly Muslim countries; launched a campaign to build a wall along the US-Mexico border; imposed new trade tariffs; and issued calls to cut or eliminate international aid to some countries. The President has even targeted international students directly, at one point contemplating a ban on students from China while reportedly saying that "almost every [Chinese] student that comes over to this country is a spy". (Karni, 2018).

The political climate has undoubtedly had a chilling effect on international recruitment and retention, but it is difficult to quantify its impact. One proxy may be found in the analysis of visa delays or denials.

After graduation, international students typically require an H-1B temporary work visa to stay in the United States for a three-year period. They are renewable for up to six years in total, and H-1B visa holders may also apply for permanent residency (green card). The H-1B visa is also the primary mechanism by which highly educated workers holding foreign degrees in technical fields like computing, finance, engineering, mathematics, science, and medicine are admitted to work in the US. These visas are now subject to an annual cap of 85,000, which includes an allocation of 20,000 visas for workers with an advanced degree (Masters or higher) from a US academic institution.

The Trump Administration has made the application process more difficult through a series of initiatives, starting with a "Buy American, Hire American" executive order in April 2017. These initiatives have had the effect of increasing the number of H-1B visa denials and adding significant delays to employers' efforts to hire foreign, highly-educated talent (Semotiuk, 2019). For example, the proportion of visa denials has increased from 6% in 2015 to 32% through the first quarter of 2019 (24% for fiscal year 2018) (NFAP, 2019). To get a sense of how this procedure is viewed overseas, an article from the *Times of India* is illuminating. It reported on the "toughest ever H-1B visa process" amid "unprecedented scrutiny by the Trump administration" (Verma, 2018).

Strikingly, the number of F-1 student visas has declined by 44% since 2015, after years of double-digit growth. This is a product of fewer applications, but also an increased refusal rate. Approvals as a share of applications have dropped from 75% in 2015 to 65% in 2017 — and in 2017, there were 30% fewer applications than in 2015 (US Department of State, 2018). Meanwhile, for comparison, the number of H-2A temporary or seasonal agricultural work visas has continued to grow at double digit rates in recent years (Figure 3).

Figure 3 – F1 and H2A Visas Issued, 2009-2018

Looking ahead, this picture is likely to become even less encouraging, at least from the perspective of international students aspiring to study in the US — and those universities hoping to recruit them. The Department of Homeland Security has recently announced its intention to increase the fees for foreign students applying for F visas from \$200 to \$350, while exchange visitors will face an increase from \$180 to \$220. Sponsoring universities will face a dramatic increase in the “school certification petition fee”, from \$1,700 to \$3,000 (Department of Homeland Security, 2019). While the changes are allegedly intended to ensure adequate resourcing to permit timely processing of visa applications, the American Council on Education, the Association of American Universities and other US higher education associations have expressed their concern that these changes “will adversely impact student and faculty exchange visitors as well as institutions of higher education... [to] reinforce a troubling message that we no longer welcome members of the international community who wish to enter our campus gates” (American Council of Education, 2019).

Taken together, these measures, accompanied by rhetoric and policies from the highest levels of the US government, reflect a purposeful retreat from international engagement. The implications, I will suggest below, may be profound.

The United Kingdom

The Brexit movement in the United Kingdom has also been interpreted as a popular retreat from international engagement and has many university leaders worrying about their future ability to attract and retain international talent. More than 17 million people, 51.9% of the electorate, voted

in a national referendum on 23 June 2016 to sever Britain's ties with the European Union, a region representing half a billion people and, at just over a fifth of global GDP, the world's third-largest economy. This vote has been seen by many as a reaction against international engagement, and an apparent movement to build barriers between countries instead of bridges (Tammes, 2017). The resulting political, economic and social uncertainty in the UK has only deepened in the months and years since the referendum was held. The government's Brexit proposal has failed parliamentary votes multiple times and, at time of writing, the UK has been granted a second extension to implement an orderly Brexit. The resignation of Prime Minister Theresa May and her replacement by Boris Johnson adds further uncertainty to an already unstable political environment.

These continuing developments — and the ambivalence towards globalization underlying them — have had an interesting effect on international enrolment in UK institutions. Enrolment in UK institutions from non-UK EU nations has continued to grow — perhaps, as *The Guardian* has speculated, “a last-minute rush to study at British universities before Brexit closes the door”. Enrolment from non-UK, non-EU nations has largely been flat.

I suspect we are witnessing a holding pattern, as prospective students “wait and see”. EU enrolment in Britain post-Brexit (assuming the UK does eventually withdraw from the EU) will depend on the resolution of a host of thorny issues, including student mobility programs like Erasmus+, the status of the EU Framework Programme for Research and Innovation, and dozens of specific regulations concerning residency, employment, post-study work visas and professional qualifications. Recent trends have not been positive: post-study work visas were abolished by then-Home Secretary Theresa May in 2012, and the number of non-EU international student visas has been reduced.

While a recent commitment to reinstate post-study work visas is an encouraging sign, many details about Britain's future remain uncertain. If/when the UK leaves the EU, many commentators expect international enrolment in UK institutions to fall significantly. A report from the Higher Education Policy Institute and Kaplan International predicts that a rigorous Brexit that eliminates the distinction between EU and non-EU students would precipitate a 57% drop in EU students studying in the UK (Conlon *et al.*, 2017).

These same dynamics are also likely to affect the recruitment of academic talent by British universities. Currently, more than 36,000 academics employed in institutions of higher education are citizens of non-UK European countries. Though many institutions have taken steps to reassure their European and international faculty, their status in the UK remains uncertain. This fact is clearly appreciated by European institutions looking to recruit highly-qualified personnel away from UK institutions. Indeed,

Michael Arthur, Provost and President of University College London, reported to *The Guardian* that in the year following the Brexit referendum, fully 95% of his European staff had received headhunting calls from European institutions outside the UK. With the increasingly unsettled state of Brexit negotiations, retention concerns are rising at British universities.

Again, as with the United States, the implications may be profound.

Canada

By contrast, Canada's approach to recruiting international students has been aggressively positive. According to Statistics Canada, enrolment of international students in Canadian institutions of higher education jumped by more than 80% between 2010 and 2016. And the numbers continue to rise. Canada is now among the world's top five or six host countries for international students in higher education.

How has Canada accomplished this? Attracting international students is a national and provincial priority. Canada's Post-Graduation Work Permit (PGWP) program affords international students the opportunity automatically to stay in Canada for up to three years after graduation. The government has further eased the PGWP's requirements, recently extending the deadline to apply to 180 days after graduation and relaxing the requirement that students need a valid study permit at the time of application — study permits need only have been valid at some point. In addition, the Canadian Experience Class (CEC) provides a pathway to permanent residency for international students (and other non-residents) with at least one year of work experience in Canada.

The PGWP and the CEC fit into a larger international education strategy that the Trudeau government announced in its 2019 Budget. The Strategy articulates a clear goal:

Under the Strategy, the Government of Canada will work... to double the size of our international student base from 239,131 in 2011 to more than 450,000 by 2022 (without displacing Canadian students) (Government of Canada, 2019).

The parenthetical caveat is important, and I will return to it later. But the welcoming message is clear.

This same message is being reinforced by individual universities, with active recruitment programs and strategic decisions aimed at attracting highly-qualified international students. For example, in 2018 the University of Toronto reduced its tuition fees for international doctoral-stream graduate students to the much lower level that domestic students pay. Several other Canadian institutions have followed suit. In the context of rising fees in many other jurisdictions, the University of Toronto's decision resonates with price-sensitive students looking for a world-class education.

The welcoming message is getting through. According to a 2018 survey of international students (CBIE, 2018), the top three reasons international students listed for studying in Canada were:

1. The reputation of the education system in Canada
2. Canada offers a society that, in general, is tolerant and non-discriminatory
3. Canada's reputation as a safe country.

Canada has also been investing in attracting researchers and faculty who might have otherwise considered employment in the United States. The 2017 Canada 150 Research Chairs program was created expressly to recruit international world-class scholars to Canada. For example, Alán Aspuru-Guzik, a leading scholar of theoretical and computational chemistry, and of Mexican-American origin, left his tenured position at Harvard to move to the University of Toronto. To be sure, he was attracted by the opportunity to collaborate with U of T's world-class scholars in chemistry, advanced computing and machine learning. And the offer of a generously funded Canada 150 Research Chair paved the way. But, like so many of the international students surveyed by the CBIE, he also singled out Canada's welcoming inclusivity and cultural diversity as decisive factors in his decision to move to Toronto. In this light, it is noteworthy that, of the 24 Canada 150 Research Chairs, fully 13 relocated from American institutions. (It is revealing that roughly two-thirds of the University of Toronto's academic hires in the past two years have come from outside Canada — up from about 50% a few years ago.)

Moreover, the Canadian government has recently invested C\$200 million to improve immigration services and make immigrating to Canada easier. Forty percent of that investment is being directed to improving the handling of work and study permits with a special emphasis on permits for foreign researchers. As Paul Davidson, president of Universities Canada, told *Times Higher Education* in April 2019: "Having this kind of concierge service for academics and their spouses will certainly help them get through our immigration process more quickly."

In addition, under Canada's Global Skills Strategy, highly educated professionals can have their visas processed within two weeks of application. For comparison, the typical processing time for an H-1B visa in the US can take between three and seven months. Employers can petition (and pay an additional US\$1,225) for "Premium" processing and a 15-day turnaround. But perhaps tellingly, in 2018, Premium processing was available only during September and October. As Davidson says, the Canadian initiatives are "entirely symptomatic of a system that wants to show it is open for business" for international students and scholars (Grove, 2019). This sentiment perfectly captures the sharp contrast across the Canada-US border.

China

China has long been — and continues to be — the world's leading student exporter. Recently, however, China has focused increasing resources on hosting international students. In 2006, around 50,000 international students studied in China. By 2018, that number had grown tenfold to nearly 500,000 (Ministry of Education of the People's Republic of China, 2018). Inconsistent definitions make national comparisons difficult. But the IIE estimates that China is now the world's third-largest host country for international students.

Over roughly the same period, China has also prioritized global recruiting of highly-qualified talent. The Thousand Talents Plan was launched in 2008 to bring leading scientists, entrepreneurs and young professionals to China who “can make breakthroughs in key technologies or can enhance China's high-tech industries and emerging disciplines” (The Thousand Talents Plan, n.d.). The Plan has been the primary channel through which foreign-educated Chinese nationals with advanced degrees have been recruited back to China — some 7,000 individuals to date. Many of the recruits have worked in leading universities in the US before returning to China, lured by generous start-up packages and other perks. Some recruits have maintained their affiliation with US universities, while taking advantage of the rich research support at Chinese institutions.

As trade and global strategic tensions between China and the US spill over into research and innovation, the Plan has come under close scrutiny in the United States. Attention has been directed to Chinese-born researchers at US universities, who are now being viewed by the White House Office of Trade and Manufacturing Policy as “a primary channel for harvesting US technologies and intellectual property” (Mallapaty, 2018).

Writing in the journal *Nature*, Mallapaty notes that reports the FBI is investigating researchers involved with the Plan may be exerting a chilling effect on academic interactions between the US and China. Mallapaty argues “the threat to China-US scientific co-operation could also setback the global scientific enterprise. The two countries are the top collaborating pair in the production of high-quality scientific research worldwide, based on their joint authorship contributions of articles in the 82 journals tracked by the Nature Index.”

Moreover, if the current climate deters Chinese students from studying in US universities, the consequences for research and innovation in the United States could be very significant: “About a third of all US science and engineering master's and doctorate degrees in 2015 were awarded to international students. Of the doctorate recipients on temporary visas between 1995 and 2015, some 29%, or 63,576, were from China” (Mallapaty, 2018).

LARGER SIGNIFICANCE OF THESE TRENDS

Most often, concerns about falling international student enrolment focus on financial implications. And they can be profound, both for individual institutions and for entire national systems of post-secondary education. For example, the decline in new international enrolment at the University of Central Missouri mentioned earlier will cost the institution US\$14M (11% of its operating revenue), with multiplier effects in subsequent years (Saul, 2018).

A *Universities UK* study from March 2017 found that “on- and off-campus spending by international students and their visitors generated £25.8 billion in gross output for the UK economy”. In the United States, the Department of Commerce estimates that foreign students contributed US\$42B to the US economy in 2017 (IIE, 2019). In Canada, the number is US\$15.5B, according to the most recent data (2016).

Impressive as they are, these figures do not reflect the most important contributions of international students and faculty.

Most obviously, international students — and international scholars more generally — are a tremendous source of talent to fuel economies and enrich communities. For this reason, the trends in the US and UK are a source of great concern to university presidents and innovative firms in every sector within those countries. Meanwhile, countries like Canada are reaping the benefits of openness.

For example, the University of Toronto, through its “10,000 PhDs Project”, tracked the career paths of the 10,886 PhD students who graduated from that institution between 2000 and 2015. Of all international students who earned a PhD from the University of Toronto over that period, 46% are now employed in Canada, resulting “in a significant ‘brain gain’.” (University of Toronto, 2018).

Toronto’s burgeoning AI and machine-learning ecosystem is a clear example of the propulsive force of Toronto’s “brain gain”. Professor Geoff Hinton came to Toronto via the UK and the US and, together with his students, has established the University of Toronto at the forefront of AI and machine learning research. His research has attracted bright students and leading scholars, who have themselves gone on to produce and attract even more talent. All of this activity has stimulated inward investment and helped create local start-ups and entirely new fields of research and development, propelling Toronto into the vanguard of this field. A case in point is Raquel Urtasun, a computer scientist and colleague of Hinton’s. Her research on machine learning and computer vision induced Uber to create a large research lab in Toronto, built around Urtasun and her graduate students.

Toronto’s new Vector Institute, established in March 2017, is already Canada’s leading hub of artificial intelligence research, development and

application — and has quickly established itself as one of the world’s leaders in machine learning and deep learning. In addition to Geoff Hinton, nearly every member of the founding research faculty (including Urtasun) was recruited from abroad — including some Canadians who were repatriated after earning international degrees and/or work experience.

Evidence from the United States is similarly compelling. A 2019 analysis by *National Geographic* found that 44 of the top 100 Fortune 500 companies by revenue were founded or co-founded by immigrants or US-born children of immigrants. The list of such firms includes well-known examples like Tesla and Alphabet, but also blue-chip pillars such as Pfizer, Proctor and Gamble, Dow-Dupont, Goldman Sachs, and Bank of America (McNaughton & Nowakowski, 2019). Moreover, Saxenian (2002) has demonstrated compellingly how Silicon Valley’s success was fuelled by the large numbers of local immigrant entrepreneurs. Many of these came to study at Stanford, Berkeley or other local universities, then remained in the Valley following graduation to become major players in the innovation ecosystem. Furthermore, she shows how their success has ultimately contributed to the emergence of tech clusters in India, Taiwan and elsewhere — another clear example of the broader benefits of openness and engagement.

The importance of international engagement goes beyond its implications for economic growth and local prosperity. International engagement is fundamental to innovation and understanding. Many of the grand challenges of our time are global in scope. Challenges like climate change and sustainable development, epidemics, international refugee crises, poverty and cybersecurity do not respect international borders. Solutions to these challenges are unlikely to come from scholars or research teams working in isolation. Global challenges will require global collaborations. And, as the *Nature* article cited above implies, the current isolationist climate could have perverse impacts at precisely the time when global co-operation is most sorely needed.

Moreover, I would argue that international engagement extends beyond collaborations among global institutions, to include the recruitment of international students and faculty.

As noted previously (Gertler, 2018a), the literature on creativity, collaboration and innovation emphasizes that internally diverse teams are more likely to generate innovative solutions to various problems. Teams, firms or regions collaborating under conditions of “resource heterogeneity” often perform better on creative, problem-solving or innovative tasks than those collaborating under conditions of “resource homogeneity”. Bart Nooteboom and his colleagues describe the “knowledge stretching” that occurs when team members who bring different perspectives, expertise and experience to a common project interact with one another, and note how this process leads to breakthrough innovations (Nooteboom *et al.*, 2007).

This “knowledge stretching” may help explain why publications with international co-authors are disproportionately represented among many institutions’ most highly cited research (Gertler, 2018a).

There may also be a local dimension to this. Just as research collaborations among different institutions around the globe produce disproportionately influential publications, so too might one might hypothesize that more diverse *local* communities of students and scholars (defined in terms of national origin) would similarly produce disproportionately influential research. Among other things, internationally recruited talent brings not only an enriching diversity of perspectives, expertise and experience, but also access to globally distributed social networks of academic and industrial colleagues. Here too, the capacity of such internationalized research teams to enhance progress by helping solve global grand challenges would seem to be considerable.

If this hypothesis is correct, it has obvious implications for international recruitment and public policy. It is also a reminder of how political rhetoric and decisions shaping immigration and talent recruitment policy, including work permits, student visas, quotas and more — can have a significant impact on both the regional and national capacity for innovation and long-term prosperity.

CONCLUDING OBSERVATIONS

It is clear from the preceding analysis that some of the world’s most significant economies and centres of higher education and research are pursuing increasingly divergent paths with respect to the recruitment of international talent — students, faculty, and highly educated professionals more broadly. The consequences of this divergence are striking and significant.

For countries such as the United States and United Kingdom, recent political events, public discourse and shifts in public policy have already had a discernible effect on flows of international students, faculty and workers in technology-based sectors. By contrast, countries like Canada have clearly reaped the benefits of embracing a more open and welcoming stance. The long-term consequences of such shifts, should they prove to be enduring, could be profound.

For example, speaking at the 2019 Collision Conference in Toronto — a major global gathering of technology entrepreneurs, venture capitalists, angel investors and others — Prime Minister Justin Trudeau attributed much of the recent boom in technology-related investment and employment creation in Toronto, and Canada more broadly, to federal immigration policy for students and knowledge workers: “We’re at a time where big countries around the world are closing themselves off more to immigration, at a time

when Canada is realizing we need to stay open and draw in the best and the brightest from around the world” (Lindzon, 2019; CBC News, 2019). Indeed, Toronto alone created more new tech jobs in 2017 than the San Francisco Bay Area, Seattle and Washington DC *combined* (CBRE, 2018).

Meanwhile, in the US and UK, many leaders from the higher education, technology and related sectors are expressing growing concern about the impact of protectionist and isolationist pronouncements and policy stances on their viability and competitiveness. They have underscored how the creation of new barriers to international mobility is anathema to innovation and prosperity. And, as Mallapaty (2018) points out, the consequences for advances in global scholarship may also be profound.

At the same time, in both “opening” and “closing” countries, recent history demonstrates how vulnerable higher education has become in the face of major geopolitical upheaval and turbulence. Recent events in Canada provide troubling examples. A diplomatic row with Saudi Arabia resulted in all Saudi students and medical trainees in Canada being recalled (at least temporarily). Similarly, the diplomatic dispute with China over the arrest of a prominent Chinese executive for possible extradition to the United States has raised understandable concerns among university leaders in Canada, though, at the time of writing, academic interactions between the two countries remain strong.

Other domestic trends and considerations may also shape popular attitudes and political debates with respect to recruitment of international students. As I have argued elsewhere (Gertler, 2018b), the increasingly rancorous debates over access to higher education — and particularly, the growing perception that the most elite institutions remain inaccessible bastions of privilege for the select few — pose significant challenges for those who argue in favour of liberalizing the recruitment of international students.

Put simply, if domestic students are perceived to be unable to get into leading universities in their own country, is it any wonder that popular (or populist) opinion stands against increasing international enrolment? This point speaks to the importance of the parenthetical statement — “without displacing Canadian students” — included in Canada’s international education strategy, as noted above. It also highlights an important but less widely appreciated connection between domestic and international policy dynamics. Our success in promoting better access to higher education for domestic students from the widest range of socioeconomic backgrounds may well have a major bearing on public opinion concerning the recruitment of talented young people from around the world to study in our leading universities.

Ultimately, the debate over the role of international talent and international recruitment is a debate about the value of openness, diversity and collaboration. In unsettled times, it is tempting to retreat inward, to build walls

and play to our basest instincts. But to do so will severely undermine global prosperity, jeopardizing our ability to answer humanity's grand challenges and advance our collective well-being.

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