

# Factors Influencing International Student Enrollment Growth and Decline: A Multi-Factor Analysis of 2 Decades of Data with Implications for the Future



# **Factors Influencing International Student Enrollment Growth and Decline: A Multi-Factor Analysis of 2 Decades of Data with Implications for the Future**

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NAFSA is the largest and most comprehensive association of professionals committed to advancing international higher education. Based in the United States, we provide programs, products, services, and a physical and virtual meeting space for the worldwide community of international educators. The association provides leadership to its varied constituencies through establishing principles of good practice and providing professional development opportunities. NAFSA encourages networking among professionals, convenes conferences and collaborative dialogues, and promotes research and knowledge creation to strengthen and serve the field. We lead the way in advocating for a better world through international education.

Edited by Wendy Rubin, NAFSA

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## About the Core Project Team

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**Kyle Contrata, MS**, is the director for data science and event technology at NAFSA: Association of International Educators. He is responsible for the application of machine learning and artificial intelligence methods to provide data-driven insights and solutions. Contrata has worked at NAFSA for 8 years, during which time he has led or support various projects, including the development of NAFSA's data warehouse and enhancements to NAFSA's International Student Economic Value Tool. He holds an MS in data analytics from the Georgia Institute of Technology.

**David L. Di Maria, EdD**, is the associate vice provost for international education at the University of Maryland-Baltimore County. He is chair-elect of NAFSA's International Education Leadership Knowledge Community, an elected member of APLU's Commission on International Initiatives Executive Committee and an invited member of the American Council on Education's Commission on Internationalization and Global Engagement. He previously served as chair of NAFSA's International Enrollment Management Knowledge Community and president of the American International Recruitment Council. Di Maria earned his doctorate from the University of Minnesota, where he focused his research on campus services for international students. He is the editor of two NAFSA books, *Managing a Successful International Admissions Office: NAFSA's Guide to International Admissions* and *Senior International Officers: Essential Roles and Responsibilities*.

**Joann Ng Hartmann, MS**, is the senior director for international enrollment management-international student and scholar services (IEM-ISSS) and volunteer engagement at NAFSA: Association of International Educators. In her capacity, Hartmann provides strategic staff leadership for professional development, publications, and programs related to IEM-ISSS. Prior to NAFSA, Hartmann spent more than 18 years at the University of Tennessee-Knoxville managing and overseeing the student and scholar services unit, including institutional compliance, orientation, and student/scholar advising support services. Hartmann is a former volunteer leader for NAFSA, serving in various regional and national capacities. She has written training curriculum and presented workshops and sessions at many conferences. She holds an MS in communication from the University of Louisiana-Lafayette.

**Tim O'Brien** is a senior vice president with INTO University Partnerships, a private sector organization supporting the global recruitment and internationalization efforts of 23 universities in China, the United Kingdom, and United States. Based in Washington, D.C., O'Brien is responsible for developing the partnership network across North America alongside collaboration on the production of data and analytics insight for partners and sector bodies in the United States and the United Kingdom. With almost 30 years' experience in international education, O'Brien also has held senior international roles in several UK universities, responsible for internationalization and establishing presence across key markets in Asia and sub-Saharan Africa. O'Brien graduated with a degree in international relations and political science from Newcastle University in the United Kingdom.

## Introduction

As a result of the COVID-19 pandemic, many higher education institutions in the United States face incredible, even existential challenges, ranging from unprecedented decreases in funding to a complete transition to online learning. However, long before widespread quarantines, international travel restrictions, and the current economic crisis, the United States was steadily losing ground as the top study destination for international students. Now, as the fall 2020 semester has begun with what is expected to be the smallest incoming class of new international students in decades, international enrollment managers and other campus leaders are under increased pressure to develop and execute strategies that will stop further losses and reverse a multiyear trend that has advanced quickly from a steady decline to a plummet in international student enrollment.

Like many modern organizations, higher education institutions increasingly rely on data to help inform their strategic decisionmaking and budgetary decisions. Understanding how to gather, analyze, and apply insights derived from data is essential for strategic planning and decisionmaking. In response to the growing need for data-informed insights, representatives from the Association of Public and Land-grant Universities, INTO University Partnerships, and NAFSA: Association of International Educators collaborated for more than a year to triangulate data from nearly a dozen publicly available and credible sources to determine statistically significant factors influencing international student enrollment growth and decline over a period of 2 decades.

This report differs from the currently available professional literature in terms of the breadth of datasets analyzed. Additionally, no similar analysis was found within the academic literature; while technical reports on international student enrollment trends are widely available, most of these are historical in nature and only provide descriptive data. This report uses sophisticated statistical analysis to advance current knowledge and presents key implications for higher education leaders.

## Section I. Analysis: What Do the Data Tell Us?

### Statement of Project Purpose

International student enrollment has experienced significant growth since World War II. According to the Institute of International Education (IIE 2020), the number of international students in the United States has increased from just more than 620,000 in 2007–08 to more than 1 million today—averaging a 5.3 percent annual growth rate. While increasing numbers of students have been drawn from all parts of the globe, 80 percent of the total increase is attributable to just two countries: China and India.

Over the past few years, however, the number of new international students enrolling at U.S. institutions has declined. The nearly 10 percent reduction in new students since 2016 is notable given the previously consistent rate of growth. The downward trend appears to have affected universities differently—some have seen enrollment declines, while others have shown significant gains. The goal of this analysis is to explore key factors influencing changes in total international student enrollment, excluding Optional Practical Training, across groups of institutions. The analysis focuses on identifying the most influential variables leading to growth in international students, as well as measuring their relative importance.

### Methodology

The analysis was performed by using multiple logistic regression via Microsoft’s Power BI platform. The coefficients adjusted for standard deviation follow a similar pattern to models in Excel and programming languages such as Python and R. There may not be an exact match between coefficients derived using the Key Influencers AI and a standard linear regression model. The Wald test was used to determine whether a factor is statistically significant and is considered an influencer. All factors designated significant have a  $p$  value less than 0.05.

### Data Collection Strategies

The primary source for international enrollment data was the Integrated Postsecondary Education Data System (IPEDS) Fall Collection. The sample included a total of 1,399 four-year, degree-granting institutions. Institutional characteristics and enrollment data were cross-referenced with secondary data drawn from the NAFSA International Student Economic Value Tool, Association of Public and Land-grant Universities (APLU) membership, and other selected data sources (see appendix A) to allow for better understanding of additional variables that could potentially affect international student enrollment.

This analysis looked at two historical periods:

1. 2007 to 2015 (period of international student enrollment growth)
2. 2015 to 2018 (period of international student enrollment slowdown and decline)

Primary predictor variables in the analysis included the following:

- a. Academic Rankings of World Universities (ARWU)
- b. APLU membership
- c. Carnegie Classification
- d. Control type (public or private)
- e. Economic region
- f. Enrollment size
- g. Gallup state political party affiliation
- h. Graduation rate of international students
- i. NAFSA geographic regions
- j. Nonresident tuition
- k. Organisation for Economic Co-operation and Development (OECD) global mobility data
- l. QS World University Ranking
- m. Selectivity
- n. State
- o. Third-party recruitment partners and pathway programs
- p. UNESCO mobility data
- q. Urban or rural status
- r. *U.S. News and World Report* rankings

The dependent variables (the values we aimed to predict) were enrollment metrics, including variance in international enrollment, shift in the international share of total population, and international student enrollment's compound annual growth rate (CAGR). We accounted for confounding variables, variables that correlate with each other, by keeping only one of the confounding variables in the model. For example, selectivity correlated with *U.S. News* rankings and international graduation rate, while the *U.S. News* rankings correlated with ARWU and QS World.

### **Limitations**

A major limitation of this analysis is the inability to examine individual institutions' international student enrollment trends based on students' countries of origin. While enough data exist to provide an understanding of macro-level trends, it is not possible to conduct correlational statistics based on subgroups (e.g., type of institution and student nationality).

A second limitation of this analysis is that not all data sources are current. For instance, data available from IPEDS are often between 1 and 2 years older than the Student and Exchange Visitor Program (SEVP) data published within the U.S. Department of Homeland Security's Immigration and Customs Enforcement's Freedom of Information Act Library. While the project team could have addressed this challenge by limiting the analysis to the most recent year for which data were available across all data sources, the project team thought it would

be more relevant to incorporate the most recent year for which data were available from each individual data source.

A third limitation is the exploratory nature of this project. The project team sought to identify factors impacting international student enrollment, but we acknowledge that further analysis is necessary to understand the impact, if any, of possible confounding and extraneous variables.

A fourth limitation is that this analysis occurs over a limited range of years, 2007 to 2019, prior to the significant disruptions resulting from the COVID-19 pandemic, widespread civil unrest, and recent executive orders and presidential proclamations that specifically impact international students.

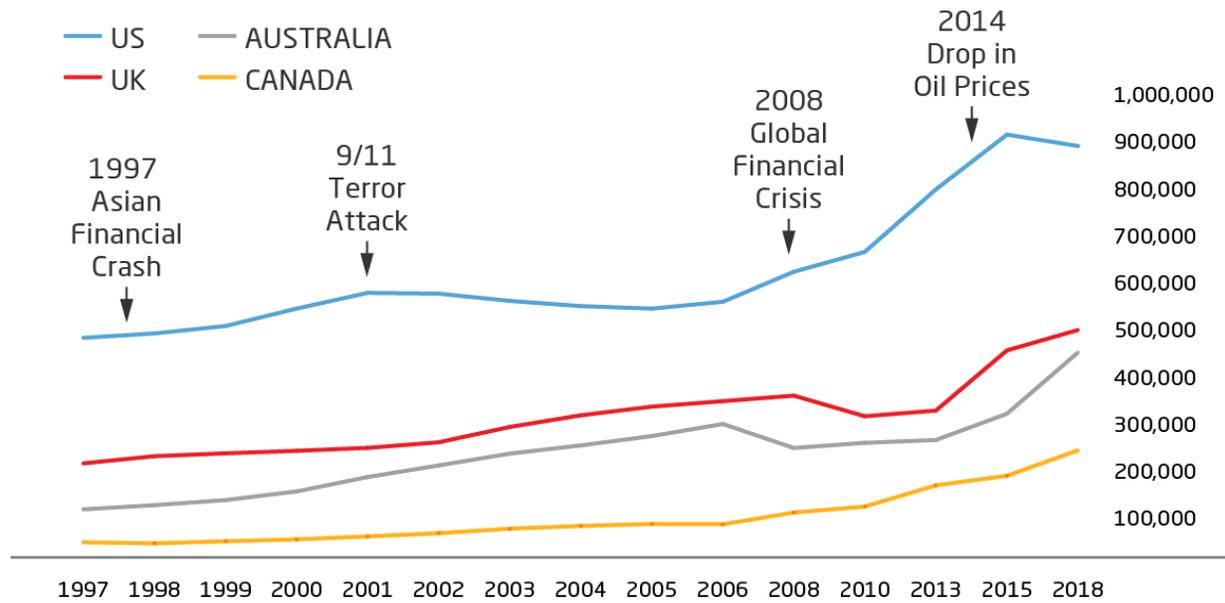
A fifth limitation is data availability. We acknowledge that many of the institutional characteristics used in this study are macro in scale and beyond the immediate control of an institution or its international office (e.g., Gallup state political party affiliation or whether the institution is in an urban or rural setting). Additional data on institutional characteristics, particularly micro-level features over which an institution or office can exercise some amount of control, would benefit the study.

Finally, this analysis is limited to four-year higher education institutions located in the United States and its territories.

### **Key Trends and Observations**

An overview of the U.S. international student market data indicated that between 2007 and 2015, international enrollment trended upward. The main drivers for this growth were China as the top sending country and India as an important sending market, specifically for master's-level students.

**Figure 1. Selected Global Events Impacting International Student Mobility**

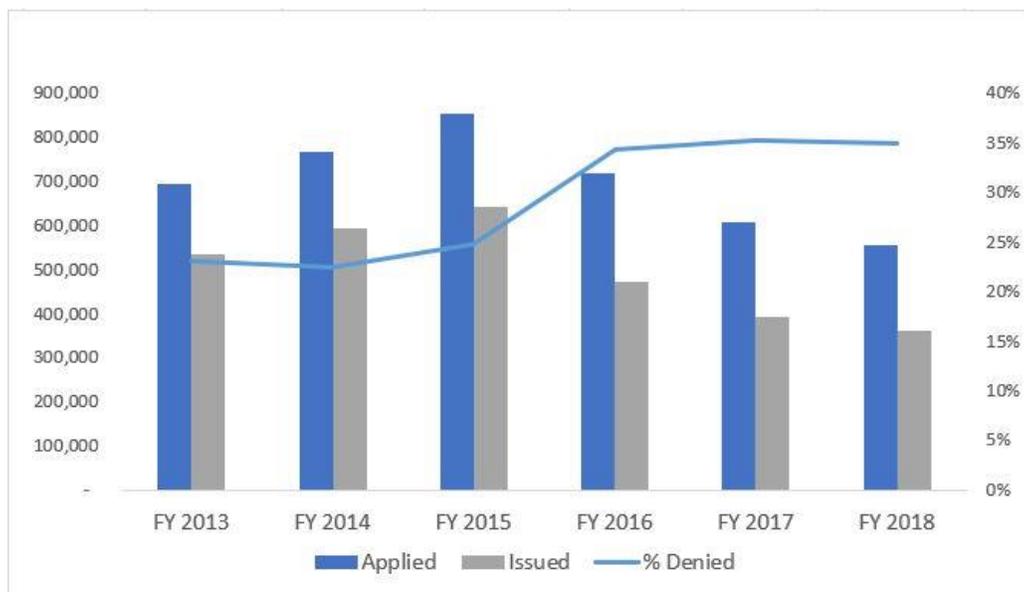


*Note:* This figure does not suggest correlation but is intended to provide context on major events.

*Sources:* UIS.Stat (n.d.); IIE (2020).

Between 2015 and 2018, data analysis from IPEDS shows the U.S. international student market trended downward for a variety of reasons, including an increased denial rate for F-1 Visas, demographic shifts in South Korea, and a reduction in the number of scholarship students from Saudi Arabia. IPEDS data account for both degree and nondegree (credit-bearing courses) and do not include students on Optional Practical Training.

**Figure 2. Historic Trends in F-1 Visa Applications, Issuances, and Denial Rates, FY 2013–FY 2018**



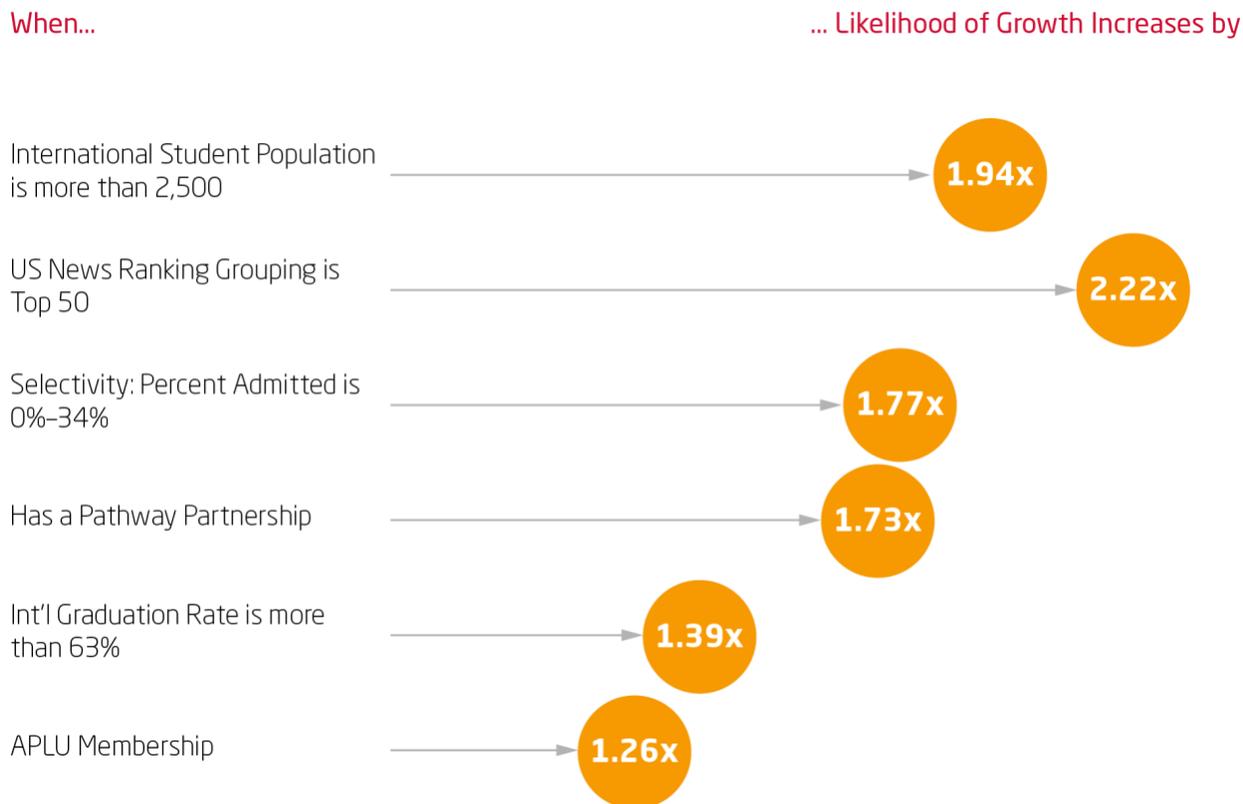
Source: U.S. Department of State, Bureau of Consular Affairs (n.d.).

The three most statistically significant factors (demonstrated highest odds ratios) affecting the actual enrollment growth in international students between 2015 and 2018 are as follows:

- University’s global profile (national and global ranking and selectivity):** The analysis indicates that the top 50 *U.S. News and World Report*-ranked institutions are more likely to experience growth by a factor of 2.2 compared to universities in other categories. In fact, top-ranked schools grew by 5.5 percent on average during those 3 years. Universities ranked in other groups declined by 1.2 percent over this same period.
- Size of the international population:** Institutions with current international enrollments larger than 2,300 students were 1.94 times more likely to experience growth. One potential reason could be attributed to the larger global alumni network that contributes to greater name recognition and wider market awareness.
- Third-party recruitment (pathway) partners:** Partnership with a third-party recruiter or provider is the third most important driver of international student enrollment growth. Universities with a third-party recruitment (pathway) partnership were 1.73 times more likely to experience growth in international enrollment. However, the analysis also suggests that there are some recent cases where such a partnership has had a reverse impact.

Other statistically significant factors include selectivity, geographic regions, international graduation rates, APLU membership, and Gallup state political party affiliation.

**Figure 3. Factors Influencing Growth in International Student Enrollment, 2015–18**

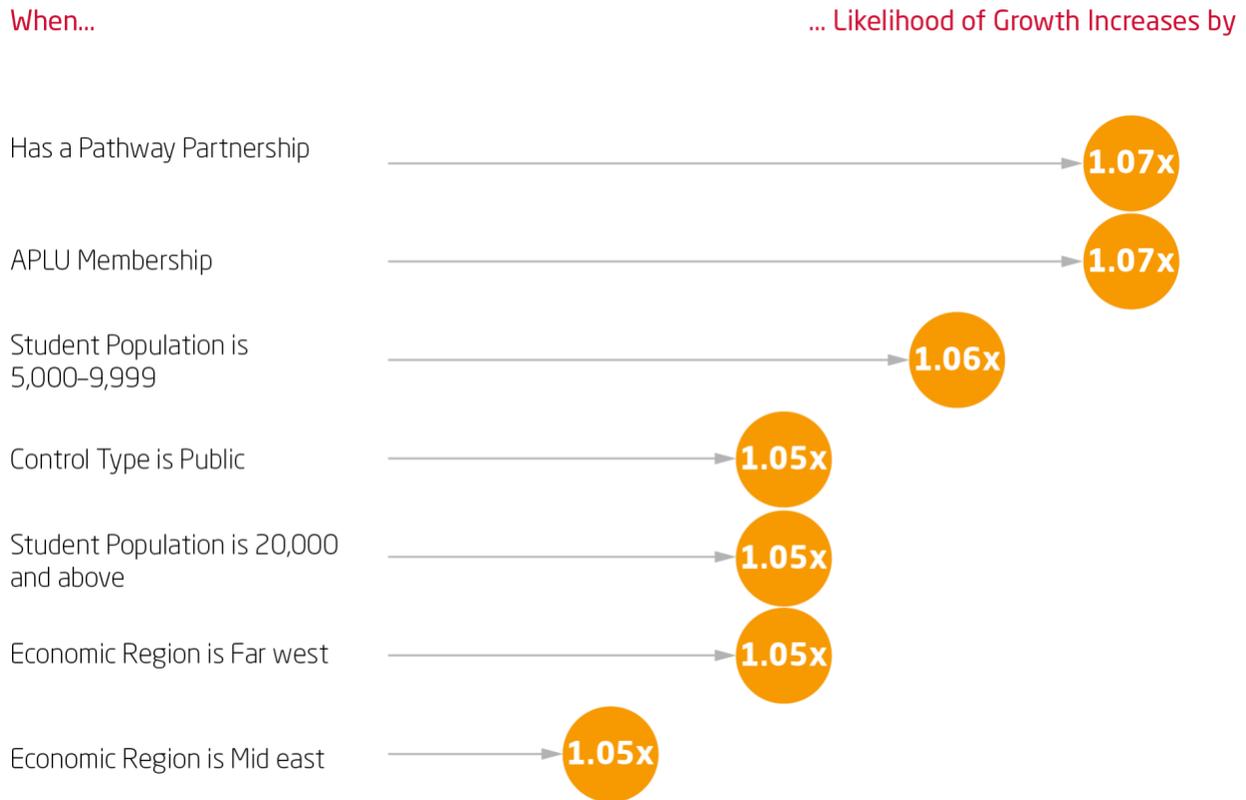


*Sources:* NCES (n.d.); U.S. News and World Report (2019); APLU (n.d.); Carnegie Classification of Institutions of Higher Education (2017).

*Note:* The data regarding pathway partnership come from an analysis by the research team of numerous articles and organization announcements.

Factors contributing to the actual enrollment growth in international students prior to 2015 include partnerships with third-party recruiting companies, membership in APLU, and public institutions with total enrollment above 5,000. However, all of these factors contributed minimally (between 1.05 and 1.07 times) to the growth in international student enrollment.

**Figure 4. Factors Influencing Growth in International Student Enrollment, 2007–15**



Sources: NCES (n.d.); U.S. News and World Report (2019); APLU (n.d.); Carnegie Classification of Institutions of Higher Education (2017); Gallup (2020).

Note: The data regarding pathway partnership come from an analysis by the research team of numerous articles and organization announcements.

### Factors Fueling International Enrollment Decline

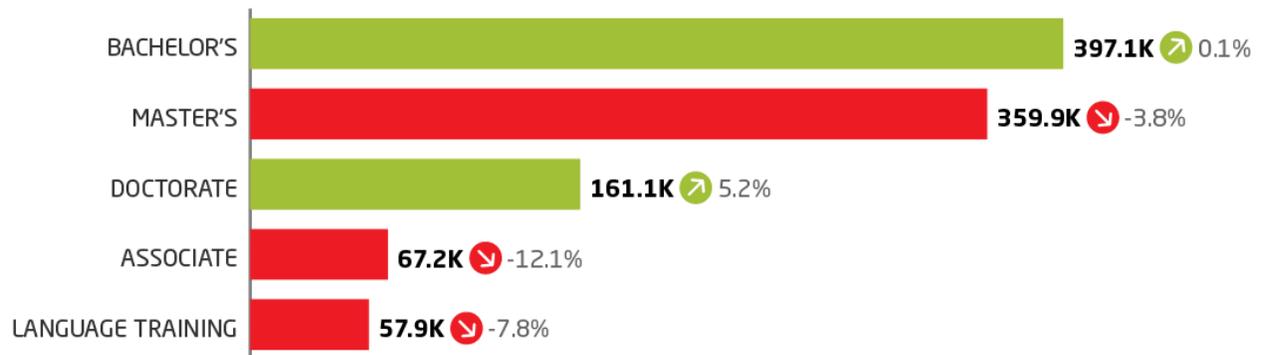
As seen in this analysis, a number of factors contributed to weaker demands for almost all education levels, which impacted the overall decline. It is important to note that international enrollment in intensive English programs and associate degree programs were hit disproportionately harder than other programs. As fewer students enrolled in intensive English programs and associate degree programs, undergraduate enrollment was negatively affected in turn. Additionally, declines at the master’s level were driven largely by the lower number of Indian students enrolled, likely due to increased visa denials, pessimistic views on employment opportunities within the United States, and rumors surrounding the tightening of H-1B Visa regulations.

**Figure 5. International Enrollment Trends in the United States**

	LANGUAGE	ASSOCIATE	UNDERGRAD	MASTERS	DOCTORAL	TOTAL
December, 2015	100,903	85,693	393,973	351,440	141,570	1,073,579
November, 2016	87,938	88,995	408,011	379,762	145,474	1,110,180
December, 2017	74,045	84,186	406,899	384,813	149,635	1,099,578
December, 2018	60,850	74,276	402,050	377,305	154,866	1,069,347
Change 2015 to 2018	<b>-39.7%</b>	<b>-13.3%</b>	<b>2.1%</b>	<b>7.4%</b>	<b>9.4%</b>	<b>-0.4%</b>
Change 2017 to 2018	<b>-17.8%</b>	<b>-11.8%</b>	<b>-1.2%</b>	<b>-2.0%</b>	<b>3.5%</b>	<b>-2.7%</b>

Source: U.S. Department of Homeland Security (n.d.).

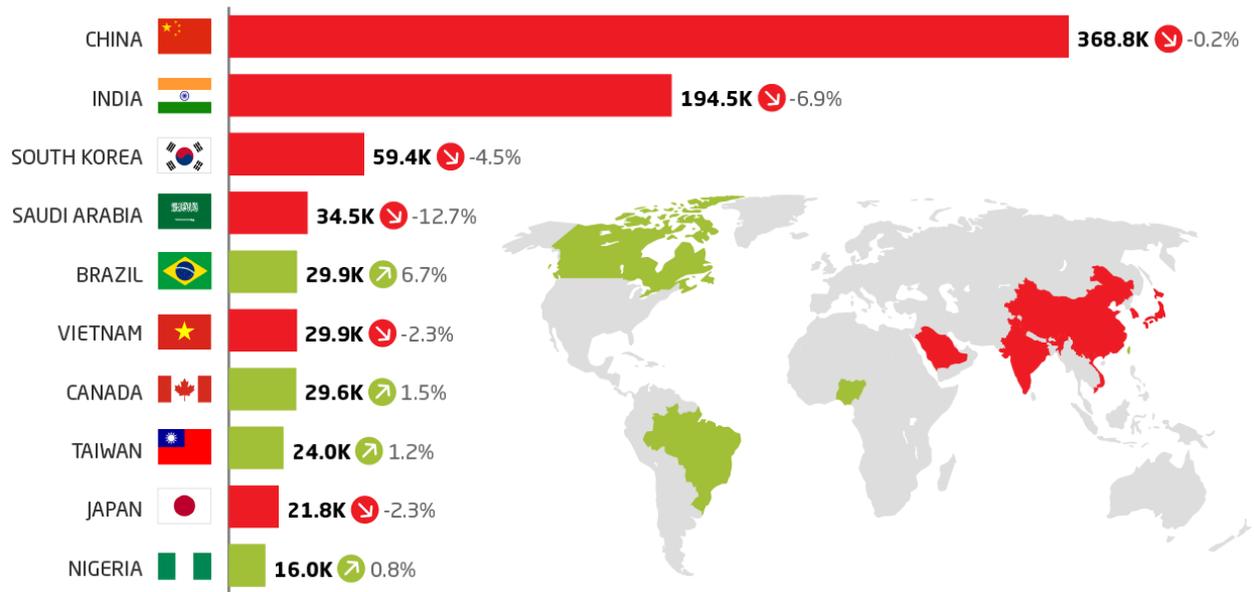
**Figure 6. Trends in International Student Enrollment by Degree Level, 2019–20**



Source: U.S. Department of Homeland Security (n.d.).

In terms of trends by country of origin, further declines were due to notable shifts in the top 10 sending markets. Of the top 10 source countries, international student enrollment from Brazil experienced 6.7 percent growth in 2019–20, when students sought to study in English language programs. Although international student enrollment declined across almost every major market, there were increases in Brazil, Canada, Nigeria and Taiwan. This helped boost overall enrollments from these countries.

**Figure 7. Trends in Top 10 Sending Countries to the United States**



Source: U.S. Department of Homeland Security (n.d.).

## **The COVID-19 Pandemic**

This project began in 2019, prior to the worldwide spread of COVID-19. Originally, this report was scheduled to be released in time for the NAFSA 2020 Annual Conference & Expo, and the authors recognized that the extreme impact of a global pandemic could not be excluded from the final report. While it is too early to incorporate data related to fall 2020 enrollment, there are implications that may be derived from looking back at the effects of past crises.

## **Global Impact of Pandemics on Education**

COVID-19 is arguably the most disruptive event to impact international higher education since World War II. While the virus was first identified in China, it quickly spread, and on March 11, 2020, the World Health Organization declared COVID-19 to be a global pandemic. The effects of this public health crisis increased in severity over the course of the spring and summer.

As China, Japan, and South Korea began to experience outbreaks of the virus, resulting in elevated travel advisories and restrictions issued by various nations, including the United States, international education professionals faced decisions about how to maintain or cancel existing study abroad programs and help international travelers in affected countries return home.

## **Australia: The Canary in the Coal Mine**

The initial impact of COVID-19 on student mobility was felt in Australia, where the main higher education intake in February, their equivalent of a U.S. fall intake, coincided with the spread of the virus across China and throughout Asia. In February 2020, Australia instituted a travel ban from China (Moodie 2020), stranding an estimated 87,000 students. The scale of impact is best illustrated by looking at Australian immigration arrival statistics. The number of arrivals on student visas plummeted from 46,460 in April 2019 to 30 in April 2020 (Australian Bureau of Statistics 2020).

As the virus began to spread from country to country, worldwide travel advisories were ultimately issued by the U.S. Department of State and the Centers for Disease Control and Prevention.

Additionally, higher education institutions and states began instituting their own travel restrictions as the virus took hold in the United States. Major professional conferences and events, such as the NAFSA 2020 Annual Conference & Expo in St. Louis, Missouri, were cancelled or moved to an online format. Within a matter of weeks, many higher education institutions closed their physical facilities and transitioned to virtual spaces. Administrators, faculty, and staff were asked to work from home, as most Americans lived in cities and states with stay-at-home orders in place.

Outside the United States, other countries began to take similar measures closing higher education institutions, instituting domestic and international travel restrictions, and issuing stay-at-home orders. By June 2020, many higher education institutions had already decided to

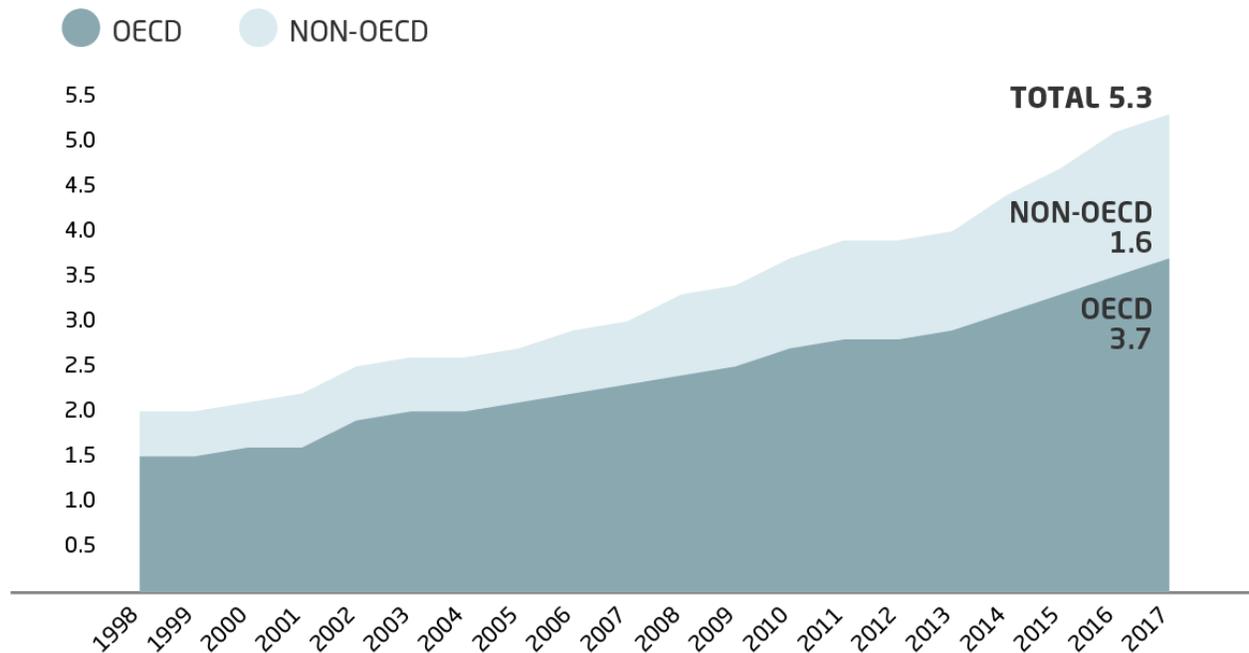
cancel summer and fall 2020 study abroad programs. Additionally, it became clear that international students might not arrive in time to begin their courses for the new academic year due to ongoing suspension of routine visa processing services, reduced international flight offerings, a global economic downturn, the cancellation of standardized exams, ongoing concern over the coronavirus, and other potential barriers.

## Section II. Historical Data on Resilience and Recovery

### The Effects of Past Crises on International Student Mobility

While international student mobility continues to increase globally, these increases are at a higher rate among countries that are not members of the OECD. Past literature forecasted that international students would reorient themselves toward countries that were once considered second-tier economies and that such countries would develop branch or twinning programs or become regional hubs for international students.

**Figure 8. Growth in International or Foreign Enrollment in Tertiary Education Worldwide (1998–2017)**



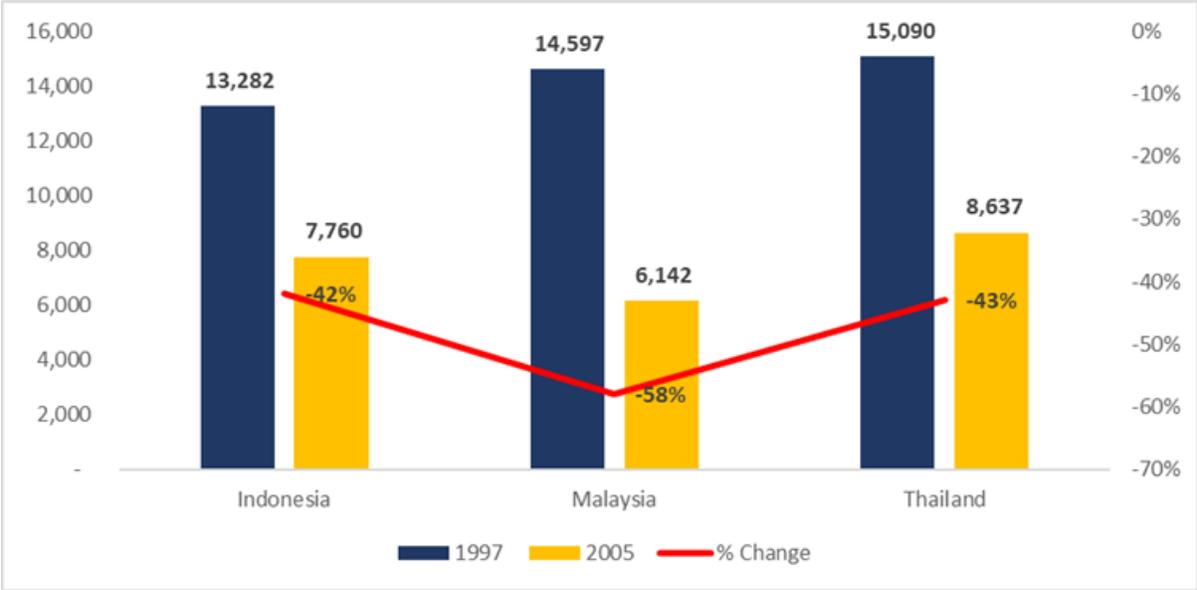
Source: OECD (n.d.).

Unlike the previous crises that affected specific regions of the world, COVID-19’s impact is truly global and therefore may not be a good predictor for the future of international student enrollment in the United States. However, a review of the impact of prior major events on student mobility can help provide context and illustrate how quickly the market can change and bounce back disproportionately across regions.

**Asian Financial Crisis (1997–98)**

One effect of the Asian financial crisis was that U.S. higher education institutions experienced significant drops in the numbers of students coming from countries such as Indonesia, Malaysia, South Korea, and Thailand. Between 1998 and 2005, the number of Malaysian students studying in the United States was cut by more than half. Thai student enrollment fell by 43 percent over the same period, and it continued on that trajectory for a decade. For example, in Thailand, the government devaluation of the currency resulted in the exchange rate jumping from 25 baht per U.S. dollar to 40 baht per U.S. dollar, causing many families to no longer be able to afford college tuitions. Because of devaluation of the respective countries’ currencies, several governments were unable to support foreign study scholarships to the extent they once could. The Malaysian government formerly supported more than 3,000 scholarship students for study in the United States, and once the crisis came, the government could not offer more than 10 scholarships in 1998.

**Figure 9. Inbound Enrollment to the United States**



Source: IIE (2020).

In spite of the financial impact, few higher education institutions noticed the contraction from Asian countries in the United States since it coincided with the rise of China and, to a lesser extent, India, which more than compensated for the decline. In addition to this contraction, to combat the projected sharp declines in enrollment from the so-called Asian Tiger economies, some colleges and universities increased recruitment efforts in other parts of the world.

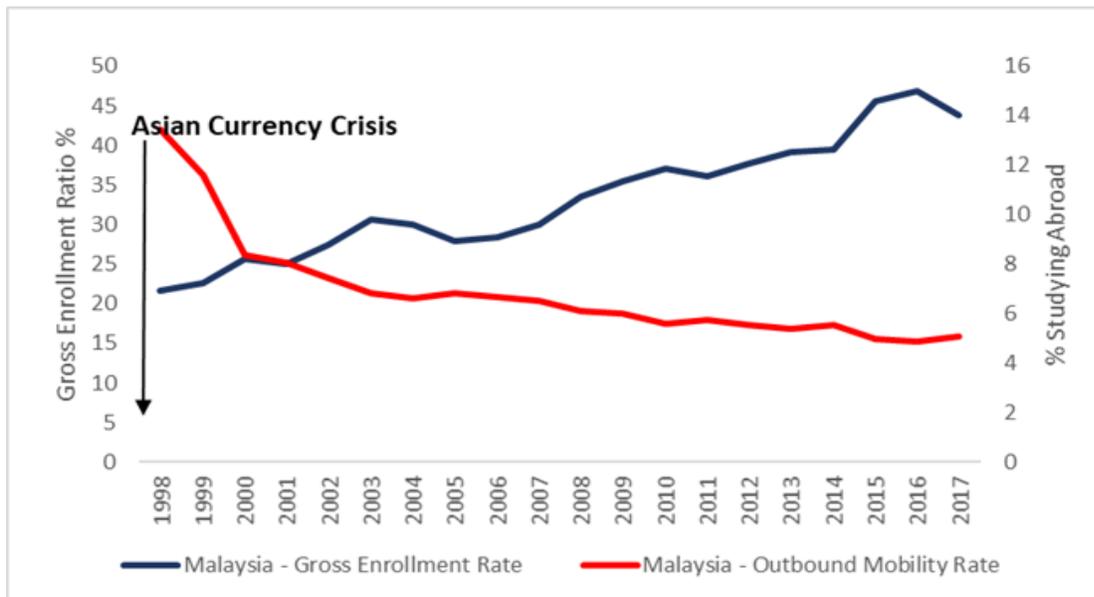
**Figure 10. Trends in Inbound Student Mobility to the United States from Asia**

	1997	2005	2018	Change 1997 – 2005	Change 2005 – 2018
China	46,958	62,523	369,548	33%	491%
India	33,818	80,466	202,014	138%	151%
South Korea	42,890	53,358	52,250	24%	-2%
Japan	47,073	42,215	18,105	-10%	-57%
Indonesia	13,282	7,760	8,356	-42%	8%
Malaysia	14,597	6,142	7,709	-58%	26%
Thailand	15,090	8,637	6,503	-43%	-25%

Source: IIE (2020).

One of the outcomes of the Asian economic crisis was that Malaysia became an education hub. In the region, as outbound mobility decreased, participation in locally delivered higher education provision increased. Clearly, demand for high-quality tertiary education remained, but local capacity increased and international players stepped up to provide greater access. It is no accident that Monash University of Australia opened its first overseas campus in Malaysia in 1998, or that the University of Nottingham chose Malaysia to become the United Kingdom's first overseas campus in 2000.

**Figure 11. Malaysia's Reversal in Global Student Mobility**



Source: OECD (n.d.).

Twenty years after the crisis, the southeast Asian region is now a destination hub in its own right—Malaysia, Singapore, and Thailand each offer an ecosystem of world-class universities, a vibrant private sector that in turn supports the presence of large public universities from the developed world and a variety of offshore campuses from Western countries. This is as evident in K–12 education as it is in tertiary education. Thailand in particular is home to a large contingent of international private schools attracting students from throughout the wider region. Even with this level and diversity of provision, there are still many students who choose to go overseas for their secondary and tertiary education.

### **Impact of September 11, 2001**

International student enrollment was curtailed in the wake of the terrorist attacks on September 11, 2001 (Altbach and Bassett 2009), marking an end to 32 consecutive years of international student enrollment growth in the United States. Such stark change resulted from two related issues:

1. The U.S. government made it more difficult for international students to obtain visas.
2. Many students, particularly from the Middle East, decided not to study in the United States either because they thought they could not get a visa or they perceived the environment as being potentially hostile toward them.

International student enrollment growth dropped from 6.4 percent in 2001–02 to 0.6 percent in 2002–03. The decline continued in the following years and regressed to an abrupt

-2.4 percent in 2003–04 and remained in the negatives in 2004–05 (-1.3 percent) and 2005–06 (-0.05 percent) (IIE 2020).

U.S. institutions experienced the sharpest decreases in enrollment from China and India between 2001 and 2006. International student applications to the United States from China fell by 76 percent, and those from India fell by 58 percent. Meanwhile, international student applications to Australia from China and India increased by 25 percent and 31 percent, respectively. Similarly, in the United Kingdom, the number of Chinese applicants increased by 36 percent and the number of Indian applicants by 16 percent (Pardee 2004).

### **The Effect of the 2008 Financial Crisis**

The 2008 financial crisis produced a significant shift in American higher education. The great recession caused students to reevaluate their academic studies, opting away from the humanities and toward academic fields with perceived stronger career paths toward securing employment. Of the 20 majors with more than 25,000 graduates in 2017, by far the fastest-growing was exercise science, followed by nursing, other health and medical degrees, and computer science (Kopf 2018).

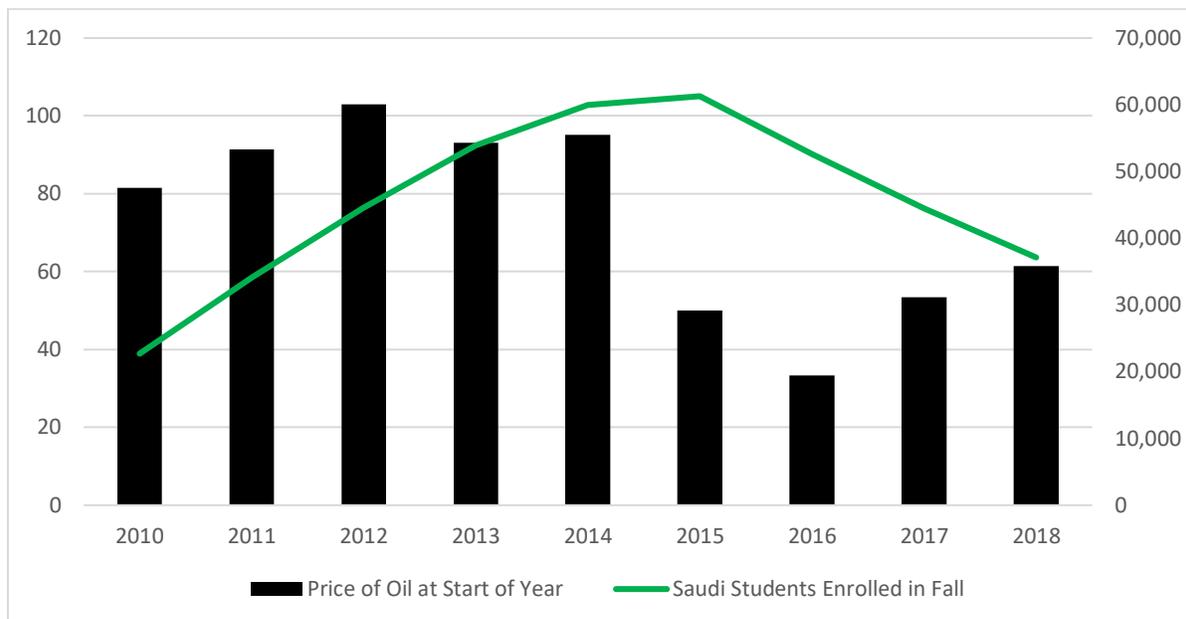
Surprisingly, the global financial crisis of 2008 actually led to an acceleration in student mobility, particularly to the United States. What caused this growth? Due largely to a decade of budget cuts to state funding support for U.S. public universities (SHEEO 2020, 21), institutions turned to out-of-state and international students to help compensate for the decline in public funds. This led to a more active and intentional approach to international student recruitment and the creation of dedicated programming to support student success.

### **Drop in Oil Prices**

In the early 2010s, several government-funded scholarship programs heavily bolstered international enrollment at U.S. institutions. The largest among them by far was the King Abdullah Scholarship Program (KASP), which began in 2005 as a result of an agreement between King Abdullah bin Abdulaziz Al Saud and President George W. Bush. At the program's peak in 2015, more than 61,000 Saudi students were actively enrolled at U.S. institutions (IIE 2020). Many of the individuals granted KASP funding began their studies in intensive English programs (Saudi Arabian Cultural Mission n.d.).

As demonstrated by Figure 12, the decline in the number of Saudi students enrolled in the United States is easily linked to a crash in oil prices that began in late 2014 (Deere 2016). Long the world's number-one exporter of oil, Saudi Arabia quickly went from having a budget surplus of 12 percent of its gross domestic product (GDP) in 2012 to a budget deficit of 15 percent of its GDP in 2016 (The Guardian 2015). Among the cuts to government spending was the funding of scholarships for students to study abroad, which first detracted from enrollment in intensive English programs and later in academic programs (Redden 2016).

**Figure 12. Trends in Oil Prices and Saudi Students Enrolled in the United States**



Sources: IIE (2020); Yahoo Finance (2020).

## Section III. Looking Ahead

The global pandemic has caused higher education institutions to shift nearly all business operations, from recruitment to the delivery of instruction, to a virtual format. This situation highlights the importance of both agility and flexibility on a wider scale. While there is tremendous uncertainty about what lies ahead, there are five broad implications based on this analysis.

### 1. Tighter Budgets and Leaner Operations

While national demographics suggest a steep enrollment decline by 2025, the current pandemic will only magnify the financial woes of struggling institutions and accelerate closures, mergers, and acquisitions across the higher education sector. As this analysis demonstrates, fewer international students are enrolling at U.S. higher education institutions, which places certain academic programs that attract higher numbers of international students than domestic students, such as electrical engineering, particularly at risk (Redden 2017b). If this enrollment trend continues, then some institutions may be forced to scale back their academic offerings, thus providing fewer opportunities to local students and compromising the nation's ability to meet the workforce needs of local employers (Shih 2017). This could ultimately lead to some employers choosing to move high-paying, high-skilled jobs abroad, which will only worsen the economic challenges faced by the United States (Zavodny 2019).

International students contribute nearly \$41 billion to the U.S. economy, making education services the nation's fifth largest service export. This is significantly higher than our nation's top agricultural export—soybeans (\$21.6 billion) (U.S. Department of Agriculture 2018)—and approaches the value of pharmaceuticals (\$51 billion) (Larmer 2019). Ultimately, international students' spending supports more than 455,000 jobs, or three U.S. jobs created or supported for every seven international students in the United States (NAFSA n.d.).

At public institutions, international students typically pay nonresident tuition, which can be double or triple the in-state resident tuition rate. This higher tuition helps keep tuition costs down for in-state students while also funding various academic programs and initiatives that may have previously relied on historically higher levels of state appropriation. In fact, one study found “a 10 percent reduction in state appropriations was associated with a 12 percent increase in international undergraduate enrollment at public research universities” (Redden 2017a). Certain fields, such as science, technology, engineering, and mathematics (STEM), are heavily dependent on international students; when international enrollment declines, institutions are sometimes forced to discontinue certain academic programs, thereby forcing prospective or would-be students to choose to study elsewhere (National Foundation for American Policy 2017). Thus, a decline in international student enrollment results in a loss to not only a particular higher education institution but also the local economy and workforce.

While U.S. higher education institutions may see an increase in domestic enrollment in the coming years due to high unemployment, they will inevitably experience a decrease in international enrollment due to the economic fallout of the global pandemic, increasingly restrictive immigration policies, and ongoing concerns over how destination countries have responded to the crisis. Institutions also will see declining revenues from athletics, research, and state appropriations, as well as a sharp uptick in operational costs related to virus mitigation measures (Kelchen 2020). As a result of these challenges, higher education institutions, especially those that are state supported, will be under tremendous pressure to keep tuition and fees flat in the middle of what is viewed as the worst economic downturn since the Great Depression. Innovation will be key to finding new revenue streams, such as fee-funded programs, micro courses, and digital badges, but not all institutions will have the necessary resources to invest in and develop these new initiatives. Additionally, campus leaders will need to adopt lean management strategies similar to those employed within manufacturing and healthcare to ensure resources are maximized in their utility while minimizing waste.

## **2. Strategic Pivoting**

Given the ongoing decline in international student enrollment, worsening financial outlook, suspensions on travel and visa processing, and restrictive U.S. Department of Homeland Security policies toward international students, universities that are accustomed to bringing international students to their campuses and academic programs will need to find innovative

ways to take their campuses and academic programs to students, wherever they are in the world. This change is something most universities are not equipped to execute on their own. It will require strategic pivoting in the sense that institutions will find their future success in attracting international enrollees to be directly dependent on the quality of partnerships they have with third-party enablers such as foreign institutions, recruitment agents, and pathway providers that have the on-the-ground expertise, capacity, and contacts necessary to achieve results.

Third-party enablers may include higher education institutions located in a student's home country that have capacity to serve larger numbers of students, but who are currently not prepared to offer specific courses of study that students otherwise would have pursued abroad. Higher education institutions will also increasingly look to the private sector for assistance in accessing capital and navigating regulatory concerns unique to the countries in which they operate. These may include foreign tax obligations triggered by international online education programs, permanent establishment concerns due to in-person delivery of transnational education, and employment contracts for faculty and staff residing abroad who support these initiatives.

Finally, senior leadership will be forced to make difficult decisions in terms of financial priorities. The key issue to watch is the extent to which institutions reduce their global footprints via targeted or general cuts in response to the immediate crisis. Alternatively, there may be institutions that double down on their global engagement efforts in hopes of capitalizing on the opportunities that will inevitably surface after the chaos caused by the pandemic subsides. These decisions will not be easy, and our analysis suggests that institutions that weaken their global infrastructure will inevitably lose ground to competitors that are better positioned to wait for the crisis to pass. While COVID-19 and the current political challenges are temporary, institutional leaders must make decisions that determine the destiny of their institution for years or even decades to come.

### **3. Student Experiences and Expectations**

Institutions must find ways to not only deliver the academic components of their offerings via an online format but also re-create the cultural exchange components integral to an international education. Many institutions will find themselves under extreme financial distress as a result of the pandemic and associated disruptions, which will make new investments challenging.

While it is impossible to fully replicate in-person campus life experiences online, the requirement to operate in a digital environment has led to the development of innovative support structures for students. These innovations include an expansion of online advising on immigration, academic, and other matters; dynamic student checklists that trigger communications and interventions based on whether or not certain factors are met; and

improved access to academic and other campus resources. Institutions also may contract with counselors and student success specialists based in the countries and regions of international students engaged in transnational education. Using these specialists mitigates the disruptions caused by time zone differences and language and cultural barriers.

Successful international student services, whether offered in person on campus, online, or through other means, require intentionality. Those responsible for serving international students must be not only familiar with the tools used by their institutions to provide similar services to students in the United States but also aware of opportunities and challenges when relying on these tools in foreign settings. For instance, certain platforms may be monitored or restricted in the student's home country. Additionally, the method by which these tools are used may place international students at a disadvantage in terms of access if language, cultural, and time differences are not taken into consideration.

Given the challenges presented by different time zones, any universal student success initiative will need to be offered in an asynchronous environment. Synchronous initiatives, however, could be offered for students who reside within similar time zones. Such layering of support services allows institutions to meet universal needs as well as needs specific to particular groups of international students.

For students studying online, there will be few opportunities to engage in informal and casual interactions that occur naturally in a physical environment. Thus, faculty should be trained to modify their teaching styles and also embed campus life components into their work. For example, students may find it easier to make friends and establish a sense of community in courses that require greater amounts of group work. Depending on where students are located, these groups could be established based on world regions. Such considerations will be critically important as students question the value of international online education. A key question that remains to be answered is whether students will focus more specifically on the career outcomes they can expect from their academic investment or the foregone experience of studying abroad.

As in-person instruction eventually resumes, many of these modifications to everything from online advising to group-based pedagogy will continue to provide additional support for students.

#### **4. Academics**

While global academic rankings will continue to play an important, albeit questionable, role in future international student mobility, it is reasonable to anticipate a major shakeup in how institutions place within those rankings. One major reason for this change is the chilling effects that quarantines, travel restrictions, and budget cuts have had on research, which is a major factor within most ranking methodologies.

International student interests in specific disciplines will continue to shift as governments, employers, and the media place greater emphasis on digitalization and public health. This shift in interests will lead to the rise of new academic and certificate programs as higher education institutions scramble to appeal to future enrollees.

Institutions seeking to serve international students enrolled in online courses from abroad will find it necessary to develop solutions that offer these students practical work experiences even if they never set foot in the United States. These solutions may include the development of internship programs with international alumni, partnering with for-profit and nonprofit organizations that specialize in the delivery of experiential learning, and greater engagement with companies based in the students' home countries as well as companies based in the United States that have ties to the students' home countries. Ultimately, international students will have many more options in an online environment than they ever had before.

Additionally, U.S. host institutions will find themselves in greater competition with local universities and colleges in the students' home countries because these institutions are likely able to offer a much lower price point while leveraging relevant marketing channels more effectively. Moreover, many institutions outside the United States benefit from national strategies for international education. For example, India's newly unveiled National Education Policy 2020 (NEP) includes an emphasis on having greater numbers of students stay in India, as well as more international students studying in India (PIE News 2020).

Globally, competition will increase as a result of more online learning opportunities, including full academic programs, Massive Open Online Courses, and microcredentials (Li and Lalani 2020).

## **5. Increased Advocacy**

Institutions that remained silent on pending immigration restrictions in the past will become more likely to engage members of their congressional delegation on behalf of international students in the future. The United States has served as the primary destination for international students for decades, yet it is the only major destination country that lacks a national strategy for international education. COVID-19 reinforces the need for international research collaborations, intercultural education, and an understanding of global issues and trends. That said, the United States is currently proceeding down a path that isolates itself from the rest of the world, as evidenced by a growing number of restrictive policies affecting international students and scholars and an exit from the World Health Organization.

Additionally, as the United States continues to confront issues surrounding structural racism and systemic inequities, international educators must not sit on the sidelines; rather, they must collaborate with institutional colleagues and community partners to support efforts to

enact long-term meaningful changes locally and apply a critical lens to understand these issues globally.

## Conclusion

This report provides a limited analysis of the factors driving growth and decline in international student enrollment, showcasing how institutions can use publicly available data to help inform international student enrollment strategy. Additionally, the analysis used data from past crises that help shed some light on how international enrollment fared postcrisis. Lastly, the report posed five broad implications for the future of international higher education.

It is a foregone conclusion that international student enrollment will continue to suffer for the foreseeable future. As the world continues to grapple with the effects of the global pandemic, it is clear that that U.S. higher education institutions must realign, rethink, and rebuild despite diminishing resources, or they will be sidelined. Planning strategically with innovations and outside-the-box offerings and support will help institutions prepare and move forward.

As practitioners and advocates, international educators need to keep abreast of the interconnected landscape of higher education, including global trends and domestic issues. COVID-19 presents a critical juncture for higher education institutions to choose the extent to which global engagement will enable them to achieve their institutional strategic priorities. A campuswide strategy for international enrollment management is no longer a choice, but rather an imperative.

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## Additional Resources

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## Appendix A. Data Sources

<b>Data Source</b>	<b>Definition</b>	<b>Release Date</b>
<b><u>APLU</u></b>	List of members of the association	2019
<b><u>ARWU</u></b>	An annual publication of global rankings of the world's top 1,800 colleges and universities based on multifarious indicators	June 26, 2019
<b><u>Bureau of Economic Analysis</u></b>	Regions defined by the Bureau of Economic Analysis for comparison of economic data	2018
<b><u>Carnegie Classification</u></b>	A framework for classifying colleges and universities in the United States	February 28, 2018
<b><u>Gallup</u></b>	The set of public opinion surveys designed to monitor U.S. adults' views on affiliation with a political party	2017
<b><u>IPEDS</u></b>	A system of interrelated surveys conducted annually by the National Center for Education Statistics	Fall 2007 to Fall 2018
<b><u>NAFSA's International Student Economic Value Tool</u></b>	An annual state-by-state and congressional district analysis of the economic contributions of international students and their families to the U.S. economy	November 18, 2019
<b><u>OECD</u></b>	A unique forum where the governments of 36 member states with market economies work with each other, as well as with more than 70 nonmember economies, to promote economic growth, prosperity, and sustainable development	2005–17
<b><u>QS World Rankings</u></b>	An annual publication of university rankings by Quacquarelli Symonds	June 8, 2019
<b><u>UNESCO Institute for Statistics (UIS)</u></b>	The official and trusted source of internationally comparable global data on education, science, culture, and communication	September 12, 2019
<b><u>U.S. News Rankings</u></b>	The Best Colleges Ranking is an annual set of rankings of American colleges and universities published by <i>U.S. News &amp; World Report</i> beginning in 1983	September 10, 2019

## Appendix B. Glossary of Terms

<b>Term</b>	<b>Definition</b>
Compound Annual Growth Rate (CAGR)	The mean annual growth rate of international enrollment over a period extending beyond one year. CAGR is a representational figure that describes the growth as it would be if it were consistent from year to year.
Compound Annual Growth Rate (CAGR) groups	The CAGR is grouped into the following categories: High Growth: > +8.0% Medium Growth: +4.0 to +7.9% Low Growth: +0.1% to +3.9% No Change: 0% Low Decline: -0.1% to -3.9% Medium Decline: -4.0% to -7.9% High Decline: < -8.0%
Degree-granting institutions	Postsecondary institutions that grant associate's degrees or higher and participate in Title IV federal financial aid programs.
Doctoral universities	Institutions that awarded at least 20 research or scholarship doctoral degrees during the update year, as well as institutions with fewer than 20 research and scholarship doctoral degrees that awarded at least 30 professional practice doctoral degrees in at least two programs.
Economic region	A grouping of institutions based on geographical regions used by the <a href="#">Bureau of Economic Analysis</a> .
Gallup state political party identification	Primary political party affiliation of residents in U.S. states as defined by the Gallup Poll.
Gross enrollment ratios	Number of students enrolled in a given level of education, regardless of age, expressed as a percentage of the official school-age population corresponding to the same level of education.
International enrollment	All international students enrolled for credit and non-credit course of study at an accredited higher education institution in the United States.
International student	A nonimmigrant pursuing a course of study at a U.S. higher education institution holding F-1, J-1, or M-1 nonimmigrant status.
NAFSA regions	NAFSA's membership in the United States is organized into 11 geographic regions. Regional leadership teams organize conferences, state meetings, and workshops for member states.
Outbound mobility ratio	Number of students from a given country studying abroad, expressed as a percentage of total tertiary enrollment in that country.
Pathway programs	Preparatory courses that are designed to help international students build the skills, knowledge, and qualifications they will need to enter a bachelor's or master's degree program.
Power BI platform	A collection of software services, apps, and connectors that work together to turn unrelated sources of data into coherent, visually immersive, and interactive insights.
Third-party recruitment partner	A third-party organization with which higher education institutions contract to undertake specific academic and nonacademic activities designed to recruit and support international students.

Urban or rural status (degree of urbanization)	A code representing the urbanicity (city/suburb/rural) by population size of the institution's location. This urban-centric locale code was assigned through a methodology developed by the U.S. Census Bureau's Population Division in 2005. The urban-centric locale codes apply current geographic concepts to the original NCES Locale codes used on IPEDS files through 2004.
Variance in international enrollment	The measurement of the difference between enrollment in the first and last periods in the data set.