



## 20-11 The Short- and Long-Term Costs to the United States of the Trump Administration's Attempt to Deport Foreign Students

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### ABSTRACT

More than 1 million foreign students study in the United States. On July 6, 2020, US Immigration and Customs Enforcement (ICE) announced modifications to the Student and Exchange Visitor Program eliminating temporary exemptions for nonimmigrant students taking all classes online due to the COVID-19 pandemic, beginning in the fall 2020 semester. Foreign students violating the rule would be subject to deportation. Under pressure, the order was rescinded the following week on July 14. We use an economywide simulation model to estimate the economic impact on the United States if the policy had been implemented. We find that it would have cost the US economy up to 752,000 jobs and \$68 billion in lost GDP in the short run. Our estimates are larger than those reported in other studies because we consider both direct and indirect effects of the policy. In the long run, the move would have reduced the research productivity of American universities and adversely affected research, innovation, and entrepreneurship across the economy, in both the private and public sectors.

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On July 6, 2020, US Immigration and Customs Enforcement (ICE) announced modifications to the Student and Exchange Visitor Program eliminating temporary exemptions for nonimmigrant students taking all classes online due to the COVID-19 pandemic beginning in the fall 2020 semester.<sup>1</sup> Foreign students violating the rule would be subject to deportation. Even before this policy revision was announced, US institutions of higher learning cited visa problems as the number one barrier to enrolling foreign students.<sup>2</sup> In response to the ICE announcement, universities and state attorneys general pushed back, challenging the rule in federal courts. Members of Congress objected.

Under public pressure, the Trump administration reversed the decision on July 14, after having caused extreme disruption, confusion, and uncertainty to foreign students and the institutions that serve them. “Yet the larger battle is far from over,” wrote MIT President L. Rafael Reif in a *New York Times* op-ed on July 16. “This misguided policy was one of many signals that the administration wants foreign students to stay away—an attitude that reflects a stark misreading of our national interest.”<sup>3</sup>

More than 1 million foreign students study in the United States. Had the administration followed through on its order, they could have been deported, costing the US economy up to 752,000 jobs and \$68 billion in lost GDP in the short run (a shock as soon as the program was implemented). In the long run, the move would have reduced the research productivity of American universities and adversely affected research, innovation, and entrepreneurship across the economy, in both the private and public sectors.

While it has avoided a self-inflicted injury, at least for the time being, there is no guarantee that the Trump administration will not attempt to reintroduce the policy, as it did in the case of the “Muslim ban.” “They may try this again,” tweeted Massachusetts Attorney General Maura Healy on July 14. “We will be ready.”<sup>4</sup>

## ESTIMATED SHORT-TERM ECONOMIC LOSSES FROM ICE POLICY

During the 2017-18 academic year, foreign students spent \$45.3 billion in the United States and supported over 455,000 US jobs, according to the latest data from the US Department of Commerce’s Bureau of Economic Analysis (BEA).<sup>5</sup>

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- 1 The new policy stated that “nonimmigrant students within the US are not permitted to take a full course of study through online classes. If students find themselves in this situation, they must leave the country or take alternative steps to maintain their nonimmigrant status” (see [www.ice.gov/news/releases/sevp-modifies-temporary-exemptions-nonimmigrant-students-taking-online-courses-during](http://www.ice.gov/news/releases/sevp-modifies-temporary-exemptions-nonimmigrant-students-taking-online-courses-during)).
  - 2 “In 2019, 86.9 percent of higher learning institutions cited visa difficulties as the top factor in missing out on foreign students, a jump from 68.4 percent in 2017” (Colm Quinn, *Morning Brief*, ForeignPolicy.com, July 15, 2020).
  - 3 L. Rafael Reif, “I’m the President of M.I.T. America Needs Foreign Students,” *New York Times*, Opinion, July 14, 2020, [www.nytimes.com/2020/07/14/opinion/coronavirus-trump-immigration-students.html](http://www.nytimes.com/2020/07/14/opinion/coronavirus-trump-immigration-students.html) (accessed on July 19, 2020).
  - 4 See Massachusetts Attorney General Maura Healy’s July 14 tweet at <https://twitter.com/Mas-AGO/status/1283121562468704257> (accessed on July 19, 2020).
  - 5 See the International Trade Administration on the United States’ education service exports at [www.trade.gov/education-service-exports#:~:text=U.S.%20Education%20Service%20Exports&text=During%20the%202017%2F2018%20academic,supported%20over%20455%2C000%20U.S.%20jobs](http://www.trade.gov/education-service-exports#:~:text=U.S.%20Education%20Service%20Exports&text=During%20the%202017%2F2018%20academic,supported%20over%20455%2C000%20U.S.%20jobs).

These estimates are consistent with results from a study by NAFSA: Association of International Educators, which reports that during the 2018–19 academic year foreign students in colleges and universities in the United States contributed \$41 billion to the US economy and supported 458,000 jobs.<sup>6</sup> These jobs will be lost if foreign students are forced to leave the country.

Both of these sets of figures seriously underestimate the total contribution of foreign students to the US economy and the losses that would be incurred if they were to leave. Using a simulation model of the economy, we find that, taking indirect effects into account, foreign student expenditure directly and indirectly supports 752,000 US jobs—over 60 percent more than found in the two studies cited above. Expelling foreign students would cause US GDP to fall by \$68 billion—1.7 times the loss of expenditure by foreign students of \$41 billion—and aggregate household income of nonstudents to decline by \$46 billion.

Both the BEA and NAFSA studies estimate only the number of jobs directly supported by foreign student expenditures.<sup>7</sup> They do not consider two indirect effects arising from a decline in student expenditures. First, firms supplying intermediate inputs to the directly affected sectors would lose sales and jobs (indirect impact of supply-chain or “input-output” linkages). Second, wage losses by unemployed workers would lower household income, leading to induced reductions in demand in addition to the direct reduction by foreign students. We incorporate these indirect supply chain and induced-income effects in a simulation model that includes these linkages in a consistent, multisector, multihousehold, economywide framework.

We developed an economywide multiplier model that captures these indirect effects to estimate the full impact (direct, supply chain, and induced) of expelling foreign students from the United States. The model is based on a social accounting matrix (SAM) database that includes the national income and product accounts plus data on the use of intermediate inputs across the economy (supply chains). The SAM multiplier model is based on data for 184 industries and 10 household types, including 1 representing resident foreign students.<sup>8</sup> The SAM data come from IMPLAN ([www.implan.com](http://www.implan.com)) and are supplemented by data on foreign students from NAFSA.

IMPLAN provides SAM data for the United States as a whole and for individual states. We ran the SAM multiplier model for the United States and the largest state in the country, California. We use the model to simulate the effect of deporting foreign students living in the United States and California. The “shock” we specify in the model is the direct reduction of household income and

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6 NAFSA is a nonprofit association dedicated to international education and exchange. The study is available at [www.nafsa.org/policy-and-advocacy/policy-resources/nafsa-international-student-economic-value-tool-v2](http://www.nafsa.org/policy-and-advocacy/policy-resources/nafsa-international-student-economic-value-tool-v2). NAFSA also provides estimates of the impact at the state and local levels.

7 For the NAFSA methodology for estimating the economic value of international student enrollment to the United States, see [www.nafsa.org/sites/default/files/media/document/isev-methodology-2019.pdf](http://www.nafsa.org/sites/default/files/media/document/isev-methodology-2019.pdf). They use a rough estimate of employment multipliers applied to the labor coefficients on “direct” expenditure (jobs per unit expenditure) at universities for tuition and living expenses. Their reported employment impact values do reflect limited indirect effects, at the local level. In our case, we use labor coefficients and indirect input-output (supply chain) linkages at the 184-sector level, as well as induced income linkages, economywide, and find much larger indirect effects.

8 See Miller and Blair (2009, chapters 2 and 11) for a discussion of these multiplier models.

Table 1  
**Estimated short-term economic impact of deporting foreign students on the United States and California**

<b>Data source/measure</b>	<b>United States</b>	<b>California</b>
<i>NAFSA data</i>		
Foreign student enrollment (thousands)	1,095.3	161.7
Foreign student expenditure (billions of dollars)	41.0	6.8
Number of jobs directly supported (thousands)	458.3	74.8
<i>Social accounting matrix multiplier results (change, in billions of dollars)</i>		
Consumption by foreign students (direct impact)	-41.0	-6.8
Total consumption	-71.0	-9.8
GDP	-67.8	-8.8
Tax revenue	-18.3	-2.8
Nonstudent household income	-46.0	-6.1
<i>Change in employment (thousands)</i>		
Direct impact (NAFSA study)	-458.3	-74.8
Total impact (direct + indirect)	-751.6	-107.8
<i>Impact multipliers (total over direct impact)</i>		
Consumption	1.73	1.44
GDP	1.65	1.29
Tax revenue	0.14	0.09
Nonstudent household income	1.12	0.90
Employment	1.64	1.44

Source: Authors' calculations.

expenditure of foreign students who leave the United States and California. We use the NAFSA estimates that household expenditure would fall by \$41 billion in the United States and \$6.8 billion in California.<sup>9</sup> To the extent that some students are able to avoid deportation and remain in the country, the impact would be reduced *pari passu*. Table 1 presents the results.

9 IMPLAN treats the United States and California as separate economies. The state data include trade and income flows to and from a state from the rest of the United States. NAFSA's state-level estimates are available at [www.nafsa.org/sites/default/files/media/document/isev-2019.pdf](http://www.nafsa.org/sites/default/files/media/document/isev-2019.pdf).

Including indirect effects, deporting more than 1 million foreign students would reduce US aggregate consumption expenditure of \$71 billion—1.7 times the direct loss of \$41 billion estimated by NAFSA. GDP would fall by \$68 billion and employment by 752,000—65 percent more than the direct job losses of 458,000 (estimated by NAFSA) or 455,000 (estimated by BEA).<sup>10</sup> In addition, total tax revenue would fall by \$18 billion and the income of nonstudent households would fall by \$46 billion. The direct impacts would be felt most heavily in US cities and towns with colleges or universities; the indirect effects would be spread across the country.

The results for California are qualitatively similar. A direct expenditure loss of \$6.8 billion would lead to a total consumption decline of \$9.8 billion and GDP loss of \$8.8 billion. Employment loss would be 108,000—a much higher figure than the 75,000 from the direct expenditure decline estimated by NAFSA (including 26,000 direct and 49,000 indirect job losses). Nonstudent household income would fall by \$6 billion. The multipliers (the ratios of total loss to direct loss) are smaller at the state level, because some of the negative effects would spill over to other states through changes in income transfers and trade with the rest of the country (“leakages” from California).

From a narrow economic perspective, policies to restrict the number of foreign students in the United States would damage the economy, both in the geographic areas directly affected and in the rest of the country. The effects would be lower GDP, lower tax revenue, lower household income, and increased unemployment at a time when the United States is dealing with a major public health and economic crisis. It is hard to imagine a worse time to disrupt an important income stream for colleges and universities and restrict the potential supply of highly skilled, educated workers.

## ESTIMATED LONG-RUN IMPACT

The presence of large numbers of foreign students has multiple effects on American universities, particularly with respect to graduate programs in science, technology, engineering, and mathematics (STEM). Enrollments and tuition payments directly affect the size of university departments and their ability to provide financial support to students and remain viable. The presence of foreign graduate students also broadens and contributes to the research productivity of faculty and American classmates.

In recent years, foreign students have represented roughly half of STEM graduate students in American universities, even though faculty and administrators express a preference for American students (Barber and Morgan 1988, Stephan 2010). Deporting foreign students would profoundly damage American universities.

Some opponents of foreign students argue that foreign students “crowd out” Americans. Shih (2016) finds that the enrollment of foreign students permits STEM departments to enroll American graduate students roughly one-to-one, by expanding overall capacity and increasing the ability to support domestic

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<sup>10</sup> We ran a simulation using the BEA estimate of the reduction in direct expenditure by foreign students of \$45.3 billion for the United States. The results show a decline of \$79 billion in GDP, employment loss of 830,000 jobs, and tax revenue loss of \$20 billion.

students (see also Stephan 2010). Abegaz, Lahiri, and Morshed (2020) estimate that the presence of foreign graduate students increases graduation rates for all students, particularly American students.

Shen (2016) finds that these channels work differently for undergraduates. Foreign undergraduates crowd out domestic undergraduates, but they also enable universities to raise entrance standards and provide more financial support for deserving American students. The distributional effect is to shift resources away from students who are less smart but wealthy toward students who are smarter but poor.

The impact of foreign students on productivity is positive. Stuen, Mobarak, and Maskus (2012, 4) conclude that “foreign doctoral students significantly and positively influence publications and citations produced by US academic departments. Each additional foreign student leads to 0.9 extra [science and engineering] journal articles per year. The marginal effects of foreign and American students are statistically comparable, which is consistent with an optimizing department that equates value at the margin.”<sup>11</sup> Chellaraj, Maskus, and Mattoo (2008) estimate that a 10 percent increase in the number of foreign STEM graduate students raises patent applications by 4.5 percent, university patent grants by 6.8 percent, and nonuniversity grants by 5.0 percent. “Reductions in foreign graduate students from visa restrictions could significantly reduce US innovative activity” and by extension the income accruing to the institutions that hold these patents, they conclude.<sup>12</sup>

The presence of foreign students may affect the productivity of faculty as well, although the net effect seems to be neutral. Borjas, Doran, and Shen (2015, 2) estimate that “the increased access that the Chinese-American advisors had to a new pool of considerable talent led to a substantial increase in their research productivity. Despite sizable intraethnic knowledge spillovers, the relatively fixed size of doctoral mathematics programs (and the resulting crowding out of American students) implied that comparable non-Chinese advisors experienced a decline in the number of students they mentored and a concurrent decline in research productivity.” The two effects were almost exactly offsetting.

Foreign graduate students continue to contribute to the US economy after they graduate. Hunt (2010) looks at multiple labor market outcomes, including wages and patenting, by natives and immigrants by different types of entry visa. She finds that “immigrants who first entered on a student/trainee visa or a temporary work visa have a large advantage over natives in wages, patenting, commercializing or licensing patents, and publishing.”

The evidence on entrepreneurship is suggestive. Roach, Sauermann, and Skrentny (2019) examine differences in characteristics between foreign and native STEM PhD students. They find that the personal attitudes of foreign and

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11 On the prominence of foreign students in STEM publishing, see also Black and Stephan (2010). To the extent that there has been a shift away from American students, Chellaraj, Maskus, and Mattoo (2008) attribute it to their lower math and science achievement, as demonstrated by a variety of international tests.

12 In a study of 161 US chemistry departments, Gaulé and Piacentini (2013, 698) find that “Chinese students have a scientific output during their thesis that is significantly higher than other students. In fact, conditional on acceptance into the same programs, Chinese students perform about as well as the awardees of the NSF [National Science Foundation] doctoral fellowship program—America’s best and brightest in science and engineering.” Their preferred explanation is that US universities can cherry-pick the best Chinese graduate students.

native students differ in terms of risk tolerance, preference for autonomy, and interest in commercialization—all attitudes associated with entrepreneurship. They also find that foreign students are more likely to indicate an intention to found or join a startup. They are less likely to actually do so, however, causing the authors to speculate that these students may face legal or financial impediments to realizing their preferences. Roberts, Murray, and Kim (2015) find that foreign-born students account for a disproportionately large share of companies founded by MIT alumni. More broadly, immigrants are an important source of scarce human capital for the United States and restricting their ability to come to the United States as students would be short-sighted and damaging.

Welcoming foreign students has also increased the United States' soft power. Over a long period, the United States has educated millions of foreign students who have returned to their home countries, largely with warm feelings about their education and the country that provided it. The United States has also trained influential policymakers in many countries, who understand and engage easily with the United States. All these benefits will come to an end if the United States restricts the number of foreign students.

## CONCLUSION

Had the ICE policy been implemented, it would have imposed significant short- and long-term costs on the US economy. In the short run, such mass deportations would have reduced GDP by an estimated \$68 billion and cost 752,000 jobs. In the long term, such a move would have reduced the size and research productivity of American universities and adversely affected innovation and entrepreneurship. The distributional consequences of foreign students are complex. Some undergraduate students may be displaced. But on the whole it appears that American students, particularly graduate students, benefit from their presence, through the expansion of programs and the upward pressure on educational standards that their enrollment supports, as well as the enhanced financial support that the tuition payments of foreign students enable.

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