# Notes:

This affirmative argues that the United States should remove restrictions on high skilled immigration in order to insure that U.S. universities are able to attract the best students in the world. The thesis of the AFF is that foreign students choose to attend American universities because of the prospect that they will be able to stay and work in the United States after they graduate. Current visa policies are causing many students to doubt whether that is true.

The reason that high skilled immigrants are good for universities is that they tend to pay full tuition (unlike many domestic students who receive scholarships, grants and in-state discounts) and that they tend to enroll in advanced graduate programs that specialize in innovative research.

There are two main types of research:

* Basic (aka fundamental or pure) research, which is driven general scientific curiosity or interest rather than an expressed intention to create or invent something. It is generally a pre-requisite to other forms of research.
* Applied Research, which is designed to solve specific practical problems.

The AFF argues that universities fulfill a unique role in society by conducting basic research. The argument says that it is necessary for universities to do this research because profit motives prevent private companies from investing in it.

Despite the fact that it doesn’t target specific problems, basic research is important, because it often yields new innovations that transform society and contribute to the economy.

In addition to case defense, there are several negative arguments included in this file.

The Internal Brain Drain turn argues that bringing immigrants into the US to study at universities is a bad thing, because it deters domestic students from entering into those fields of study.

The Chinese Espionage turn argues that bringing immigrants into the US to study allows China to steal technological secrets and use the innovations developed through research for themselves.

The Research and Development (R&D) counterplan argues that the United States should give funding to universities to conduct research and offer tax credits to business to invest in research, rather than increasing the number of immigrants in the country.

# AFF

## 1AC

### Innovation

#### Restrictions on immigration are driving down international student enrollment in U.S. universities

SAUL ’18 (Stephanie; New York Times, “As Flow of Foreign Students Wanes, U.S. Universities Feel the Sting,” 1/2, https://www.nytimes.com/2018/01/02/us/international-enrollment-drop.html)ww

Just as many universities believed that the financial wreckage left by the 2008 recession was behind them, campuses across the country have been forced to make new rounds of cuts, this time brought on, in large part, by a loss of international students.

Schools in the Midwest have been particularly hard hit — many of them non-flagship public universities that had come to rely heavily on tuition from foreign students, who generally pay more than in-state students.

The downturn follows a decade of explosive growth in foreign student enrollment, which now tops 1 million at United States colleges and educational training programs, and supplies $39 billion in revenue. International enrollment began to flatten in 2016, partly because of changing conditions abroad and the increasing lure of schools in Canada, Australia and other English-speaking countries.

And since President Trump was elected, college administrators say, his rhetoric and more restrictive views on immigration have made the United States even less attractive to international students. The Trump administration is more closely scrutinizing visa applications, indefinitely banning travel from some countries and making it harder for foreign students to remain in the United States after graduation.

While government officials describe these as necessary national security measures, a number of American colleges have been casualties of the policies.

 “As you lose those students, then the tuition revenue is negatively impacted as well,” said Michael Godard, the interim provost at the University of Central Missouri, where 944 international students were enrolled in the fall, a decline of more than 1,500 from the previous year. “We’ve had to make some decisions, budgetary decisions, to adjust.”

International students pay double the $6,445 tuition of Missouri residents, and the lost revenue amounts to $14 million, according to Roger Best, the chief operating officer for the school, in Warrensburg, Mo. Dr. Best said that the university has been forced to cut instructors in computer programs, where many of the foreign students were enrolled, as well as defer maintenance and shave money from other departments, such as the campus newspaper.

Nationwide, the number of new foreign students declined an average of 7 percent this past fall, according to preliminary figures from a survey of 500 colleges by the Institute of International Education. Nearly half of the campuses surveyed reported declines.

Now that the revenue stream appears to be diminishing, the financial outlook may be dire enough to weigh down the bond ratings of some schools, making it more expensive for them to borrow money, according to Moody’s Investors Service. Last month, Moody’s changed its credit outlook for higher education to “negative” from “stable.”

“Growing uncertainty for international student enrollment stems from immigration policies that are in flux,” Moody’s said, warning that universities without global brand recognition would be hit hardest. While some flagship public and elite private colleges have been affected, the Institute of International Education said, the biggest impact will be felt by second-tier institutions.

The shift comes just as some states also are experiencing a drop in domestic students, partly the result of a decline in birthrates two decades ago. This year, the number of domestic undergraduate students dropped 224,000, or 1 percent, according to the National Student Clearinghouse Research Center.

An increasingly diverse population in that age group means that more of the students come from low-income families in which no one has ever gone to college, also presenting recruitment challenges for universities, according to Doug Shapiro, the organization’s executive research director. “Affordability issues are the biggest hurdles,” Mr. Shapiro said. “There’s only so much you can do with recruiting if the families can’t afford the tuition.”

Officials at Kansas State University in Manhattan, Kan., reported an overall enrollment decline of more than 900 students, including 159 fewer international students. One official cited a “perfect demographic storm.” Budget cuts are underway.

Faced with a demand from the university that it trim its budget, faculty in the school’s modern languages department picked Italian as the language to cut, a decision that will save the university the salary of its only Italian professor, which one faculty member said was about $47,000. A final decision is still pending.

“This definitely undermines that idea of diversity many U.S. universities proclaim to promote across the country,” said Alessia Salamina, the professor whose job is in jeopardy. “This is in fact a national emergency, not only a K-State one.”

According to the institute’s survey, enrollment is falling from a broad range of countries, including China and India, the two biggest sources of students. Among countries covered by Mr. Trump’s travel ban, Iran is the largest, though it can still send students to the United States.

#### The U.S. is the current leader in attracting international students, but uncertainty regarding visas is causing perception of prestige to slip. Maintaining leadership in attracting talent is vital to innovation.

KLIMAVICIUTE ’17 (Luka; Migration Policy Institute, “To Stay or Not To Stay: The Calculus for International STEM Students in the United States,” 1/4, https://www.migrationpolicy.org/article/stay-or-not-stay-calculus-international-stem-students-united-states)ww

Overview of STEM Students in the United States

There were more than 1 million international students in the United States in the 2015-16 school year—a record level and a 7 percent increase over the previous year. This includes nearly 150,000 participating in Optional Practical Training (OPT) following completion of their studies. International students made up 5 percent of the more than 20 million students overall in U.S. higher education. More international students study in the United States than in any other country, and the U.S. international student population is nearly twice that of the United Kingdom, the second top destination.

Of international students in the United States, 41.6 percent were enrolled in STEM fields, compared to 35 percent of all students at the undergraduate level and 22 percent at the graduate level. International students are more prevalent in graduate STEM programs than undergraduate: one-third (10,000) of all STEM PhDs awarded in 2013 went to students from abroad, compared to 5 percent (roughly 16,000) of all STEM undergraduate degrees. In 2014, half of all foreign undergraduate STEM students came from China, Saudi Arabia, and South Korea. Chinese and Indian students comprised more than two-thirds of international graduate student enrollment in the United States, with Iran a distant third.

To Stay or Not To Stay

Many factors are involved in an international student’s decision to stay or leave the United States after graduation, and the choice is not always clear. Forty-eight percent of international doctoral STEM students reported intending to remain after graduation, 12 percent said they wished to leave, and roughly 40 percent said they were undecided, according to a survey conducted in 2015 by Xueying Han and Richard P. Appelbaum. This sizeable undecided share raises a question about whether the United States will remain as popular a work destination in the future. Career opportunities play an important role in these decisions: there is an 87 percent likelihood that those who chose to study in the United States because of future job prospects will stay after graduation. Students find the United States especially attractive for work in the private sector or for start-ups—77 percent of those who said they wished to work for a company or launch their own business hoped to stay, compared to 68 percent who reported considering careers in academia, government, or nongovernmental organizations (NGOs). Students who intended to leave said family was the main reason for their decision.

International student perceptions of the United States are growing more negative, which could increase their chances of leaving. When asked in 2008, a majority of international STEM and business students enrolled in U.S. higher education institutions said the best days of the U.S. economy were behind it. Furthermore, the U.S. share of international student enrollment declined from 28 percent in 2001 to 22 percent in 2014. This is significant because 57 percent of all doctoral engineering degrees awarded in 2012-13 went to foreign graduates, and so did 53 percent of doctoral computer science degrees—two fields with labor shortages.

Still, international student enrollment in the United States has increased in absolute numbers because more students now study internationally than ever before. In addition, more international students are staying in the United States after graduation. In 2011, 64 percent of science and engineering PhDs (including those in the social sciences) had stayed in the United States for five to ten years after graduation, an 8 percentage point increase from 2001, according to Michael G. Finn from the Oak Ridge Institute for Science and Education. The share of doctoral students who remain in the United States declines slightly as they age, but more international science and engineering doctorates are staying now than at any other point in the past 15 years. Even though the share of foreign students who choose U.S. colleges and universities has declined, the United States is now more appealing as a postgraduation home for those specialists who do decide to study there.

Labor Shortages and Surpluses

To determine whether the United States should incentivize more international STEM students to remain postgraduation, it is important to assess whether the U.S. economy needs them, and if so, in which fields and at what education levels. On the first point, the evidence is mixed. In 2012, the President’s Council of Advisors on Science and Technology issued a report arguing that the U.S. labor market would need 1 million more STEM specialists by 2018 than were being produced at current rates. Yet, 74 percent of STEM college graduates did not work in a STEM occupation in 2014, the U.S. Census Bureau reported. Furthermore, of computer science graduates who do not work in information services, 32 percent reported they could not find a job relevant to their skills, according to the Economic Policy Institute. Based on such contradictory evidence, it is difficult to say whether the economy needs more STEM workers, or if incentivizing more international students to work in the United States would increase competition for already scarce jobs.

However, a more nuanced picture shows that labor shortages for some jobs do in fact exist. Massachusetts Institute of Technology (MIT) researchers examined individual STEM occupations instead of studying STEM graduates as a homogenous group. Based on data from 2010 to 2014, they found that labor shortages exist, but not in all STEM fields: in particular, the private sector lacks software developers, petroleum engineers, and data scientists. The government sector, too, has experienced shortages of nuclear and materials science engineers. These occupations require more than a bachelor’s degree, explaining why some STEM graduates have difficulty finding a job. However, the MIT researchers reported a surplus of biomedical PhDs and the demand for physics PhDs is not very high. Therefore, immigration incentives might focus on the most-needed specialists: computer scientists and engineers.

Policy Framework for International STEM Students

In recognition of the role international STEM students play in the economy, current immigration policy already provides some pathways for these graduates to work in the United States. All international students are eligible for one year of Optional Practical Training (OPT) after they complete their studies, during which they can work in a job related to their area of study. Once the year ends, non-STEM graduates must find an employer willing to sponsor them for a work visa (for example, an H-1B visa) whereas STEM graduates are eligible for an OPT extension for up to 24 additional months. At the end of the extension, STEM graduates must receive a work visa to continue working legally.

However, even for the best and brightest, the path to long-term residency can be lengthy, expensive, and uncertain. For instance, H-1B visas are given out for a maximum of six years, during which time employees cannot switch employers without being reapproved for the H-1B status. Furthermore, the United States grants 85,000 H-1Bs each year (including 20,000 allotted for graduates with a master’s degree or higher from U.S. universities), with a roughly one in three chance of receiving an H-1B based on the number of people who apply (for fiscal year 2017, U.S. Citizenship and Immigration Services received more than 236,000 such petitions).

Growing Competition Abroad

Slim chances of receiving an H-1B visa and the inability to switch employers without getting reapproved for the visa contrast with policies that favor STEM immigrants in other countries. In New Zealand, most skilled foreign workers apply for permanent residence through the Skilled Migrant Category, a points-based system where candidates can gain almost half the number of points required by having a job offer in a labor shortage field, most typically STEM. In October 2016 Australia announced that STEM master’s and doctoral students will be given an additional 5 out of 60 points toward permanent residency. Australia has no quota for temporary skilled workers, and international students who possess critical skills can work in the country for up to four years after graduation. These policies, along with the depreciation of the Australian dollar, have helped increase the number of international students choosing to study in Australia.

A similar policy exists in Canada, where international students can stay for up to three years after graduation as long as they find a job. Creating a path from study to permanent residence helped Canada increase the share of foreign students as a percentage of all students, from just below 5 percent in 2000 to almost 10 percent in 2014; the United States by contrast has held steady at around 4 percent for the last 15 years. China also introduced notable reforms. Whereas a worker’s permit in China typically lasts one year, the R visa for talented workers (often researchers and engineers) grants permission to stay in the country for up to five years. China also provides resettlement subsidies through the Thousand Talents Plan (TTP), intended to help fill China’s labor shortages in highly skilled occupations. The TTP was initially aimed at recruiting 2,000 skilled professionals within five to ten years, but ended up bringing 4,180 highly skilled workers to China in the first six years, one-third of whom have become permanent residents.

Some countries have gone so far as to actively recruit graduates from top U.S. universities by offering alternatives to the complex U.S. visa system. Switzerland, for example, set up a “science consulate” near MIT and Harvard to promote Swiss firms directly to students. Other countries are launching start-up visas—an immigration route particularly relevant to technology workers. In 2013, Canada launched one of its own, which Citizenship and Immigration Minister Jason Kenney said in part targets entrepreneurs “stuck on temporary visas” in the United States. Chile, too, launched a competition where start-up CEOs compete for capital, office space, and a permit for one year of residence, subject to extension based on the company’s performance. Since its launch in 2013, this initiative has attracted more than 1,000 entrepreneurs to Chile—including dozens of international graduates of U.S. schools who have founded at least 47 companies.

As other countries increasingly compete for highly skilled migrants, should there be any cause for concern in the United States? Beyond filling labor market demands, STEM graduates also help the United States remain one of the most innovative countries in the world. The World Bank estimates that for every 10 percent increase in the number of foreign graduate students in the United States, university patent grants increase by 6.8 percent and nonuniversity patents by 5 percent. The United States therefore risks becoming less innovative if fewer STEM students choose it as a study and work destination.

#### International Students are necessary for conducting basic research. Universities rely on them to attract and retain high level faculty.

ANDERSON ’14 (Stuart; former staff director of the Senate immigration Subcommittee, is executive director of the National Foundation for American Policy, a policy research organization, “International Students Are Vital to U.S. Higher Education,” International Educator, May-June, https://www.nafsa.org/\_/File/\_/ie\_mayjun14\_frontlines.pdf)ww

International students are key to supporting research at U.S. universities, which helps retain and attract top faculty. Tables 3 through 7 illustrate that at schools such as Rice University, Indiana University, Purdue University, Ohio State, and others, international students generally comprise 60 to 80 percent of the graduate students in electrical engineering, computer science, chemical engineering, and other fields. In 2010, U.S. universities conducted 51 percent of all basic research performed in the United States, according to the National Science Foundation.5

“We are a research university, and in computer science that means that much of the research is done by teams led by professors with experiments carried out by graduate students,” explains Professor Christopher Raphael, chair of the computer science department at Indiana University. “This model only works if we can get highquality PhD students, and we would be hard pressed to get the number we need solely from the United States.”6

The high level of international students plays a role in universities being able to attract and retain faculty, which benefits U.S. students. “If we were not to place such a heavy emphasis on research, we wouldn’t be able to get faculty that teach the wide range of things we do, with the appropriate expertise, so our educational mission would suffer,” said Raphael. “Really the most important part of the educational experience is to work closely with highquality faculty, as one does directly at the PhD stage. So the research and the education are of a piece.”7

Professor Stuart Cooper, department chair of chemical and biomolecular engineering at Ohio State University, also points to the connection between research and teaching at U.S. colleges. “There is a synergy. To get tenure and perform research, professors require a significant number of graduate students and there are not enough domestic students alone in certain fields,” said Professor Cooper. “The advances made by professors and graduate students, including international students and postdocs, provide new knowledge and benefits to society.”8

Without the ability to perform high-level research at U.S. universities, many talented individuals would not take or seek faculty positions, leaving U.S. schools far weaker and unable to educate U.S. students in important fields. Graduate students also directly support the educational mission for undergraduates by serving as teaching assistants. Their duties include conducting study sessions and grading, which “takes some of the burden off the faculty” to focus on teaching, according to Cooper.9

#### Innovation from university based research is vital to long term economic growth. It creates jobs, increases wages, and cannot be replaced by private sector investment.

ATKINSON and STEWART ’11 (Dr. Robert D.; Information Technology and Innovation Foundation – author, researcher and one of the country’s foremost thinkers on innovation and economics AND Luke A.; conducts economic analyses on domestic and international innovation policies for the ITIF, “University Research Funding: The United States is Behind and Falling,” May, http://www.itif.org/files/2011-university-research-funding.pdf)ww

In developed, knowledge-based economies, innovation powers long-run economic growth. For example, two-thirds of UK private-sector productivity growth between 2000 and 2007 was a result of innovation.5 Klenow and Rodríguez-Clare decomposed the cross-country differences in income per-worker into shares that could be attributed to physical capital, human capital, and total factor productivity, and they found that more than 90 percent of the variation in the growth of income per worker was a result of how effectively capital is used (that is, innovation), with differences in the actual amount of human and physical capital accounting for just 9 percent.6

Innovation is also positively correlated to job growth in the mid- to long-term.7 Innovation leads to job growth in three fundamental ways. First, innovation gives a nation’s firms a first-mover advantage in new products and services, expanding exports and creating expansionary employment effects in the short term. In fact, in the United States, growth in exports leads to twice as many jobs as an equivalent expansion of sales domestically.8 Second, innovation’s expansionary effects lead to a virtuous cycle of expanding employment. For example, in the early- to mid-1990s, the emergence of information technology as a general purpose technology drove broad-based economic growth, creating hundreds of thousands of new jobs, which, in turn, led to additional job growth in supporting industries. Finally, when innovation leads to higher productivity, it also leads to increased wages and lower prices, both of which expand domestic economic activity and create jobs.9

Research performed outside the private sector is essential to the U.S. innovation system. Even with robust corporate R&D investment, the private sector alone does not provide the level of innovative activity that society needs, because firms do not capture all of the benefits of innovation. A plethora of studies have found that the rate of return to society from corporate R&D and innovation activities is at least twice the estimated returns that a company itself receives.10 For example, Tewksbury, Crandall and Crane examine the rate of return from twenty prominent innovations and find a median private rate of return of 27 percent but a median social rate of return of a whopping 99 percent, almost four times higher.11 Nordhaus estimates that inventors capture just 4 percent of the total social gains from their innovations; the rest spill over to other companies and to society as a whole.12 In other words, the private sector under-invests in innovation and thus, without public investment, the rates of economic growth, job creation and living standard improvement are all lower than their potential. The university system, therefore, plays a key role in filling in this gap in order to provide innovation at the social optimum.

Recently, universities have taken on an even greater role in the American innovation system. Over the last three decades, many large corporations have shut down or repurposed central research laboratories that used to conduct R&D. For example, since its founding in 1925, Bell Labs (until 1995, a subsidiary of AT&T) made seminal scientific discoveries, created powerful new technologies, and built the world's most advanced and reliable telecommunications networks. Because so much of these results spilled over to other firms (not just AT&T) and industries, the incentive to perform this kind of foundational, generic research was based on the fact that AT&T had significant market power and was a regulated monopoly. But with the introduction of competition to the telecommunications industry in the 1980s and 1990s, Bell Labs was restructured to focus more on incremental technology improvements with shorter-term payoffs. This is reflective of an overall shift in corporate R&D, with companies in the United States expanding their investments in laterstage applied research and development much more quickly than their investments in basic, early-stage research. From 1991 to 2008, basic research as a share of total corporate R&D funding conducted in the United States fell by 3.2 percentage points, while applied research fell by 3.7 percentage points. In contrast, development’s share increased by 6.9 percentage points.14

This shift to shorter-term, less fundamental R&D risks a shrinking of the knowledge pool from which firms draw the ideas and information necessary to conduct later-stage R&D and to bring innovations to the market. As U.S. companies have shifted their R&D activities upstream, universities have taken on a larger role in the innovation system. Today, universities perform 56 percent of all basic research, compared to 38 percent in 1960.15 Moreover, universities are increasingly passing on these results to the private sector: Between 1991 and 2009, the number of patent applications filed by universities increased from 14 per institution to 68 per institution; licensing income increased from $1.9 million per institution to $13 million per institution; and new start-ups formed as a result of university research increased from 212 in 1994 to 685 in 2009.16

Overall, university research has large impacts on U.S. economic growth. In terms of its impact on product and process development in U.S. firms, Mansfield finds the social rate of return from investment in academic research to be at least 40 percent.17 And a study by the Science Coalition found that “companies spun out of research universities have a far greater success rate than other companies.”18 Indeed, university research gave the United States breakthrough companies such as Google, Medtronic and iRobot.19

#### Economic Growth is slowing. Only technological innovation from research universities can allow room for necessary reforms. Failure risks an ever expanding debt-to-GDP ratio.

DREZNER ’16 (Daniel W.; nonresident senior fellow at the Brookings Institution, professor of international politics at the Fletcher School of Law and Diplomacy at Tufts University, “Five Known Unknowns about the Next Generation Global Political Economy,” May, http://www.anamnesis.info/sites/default/files/D\_Drezner\_2016.pdf)ww

Perhaps the best long-range economic forecast ever made was John Maynard Keynes’ statement at the start of the Great Depression in 1930 that “the standard of life in progressive countries one hundred years hence will be between four and eight times as high as it is today.”69 That prediction has turned out to be true—because of the rapid rate of postwar economic growth.

While Keynes proved to be correct, it is nonetheless true that the last two centuries of rapid growth are the exception and not the rule in human history. One economic historian estimates that England’s per capita GDP in 500 B.C. was roughly what it was in 1800 A.D. Over the next two hundred years, however, GDP per capital increased twelve-fold.70 Economists agree that with the start of the Industrial Revolution, economic growth and prosperity radiated outwards from Great Britain to the rest of the developed world.71 The Industrial Revolution directly contributed to economic growth through innovation, but it also indirectly contributed to economic growth through trade and demographic drivers.72 The development and spread of general purpose technologies in manufacturing directly contributed to faster economic growth through increases in labor productivity. New technological advances in transportation and communication rapidly lowered the barriers to trade and exchange across borders, thereby spurring greater growth through globalization. Advances in health and medicine also enabled and enhanced a significant demographic explosion, another key mechanism to increase economic growth.

In recent years, however, the rate of per capita income economic growth in the developed world has slowed down considerably. If one compares the U.S. economy since 1971 to the Bretton Woods era, there is no denying that, with one brief exception in the late 1990s, there has been a slowdown in per capita income growth. According to Northwestern University economist Robert Gordon, at the peak of the twentieth century U.S. boom, real GDP per capita increased by 2.5 percent per year. In the 21st century, that figure has been less than 1.4 percent.73 A concomitant slowdown has occurred in U.S. productivity. During the heyday of the 1960s, labor productivity increased by more than three percent a year. Over the past five years, annual U.S. productivity growth has fallen to an average of 0.9 percent. Indeed, in the last quarter of 2014 and the first quarter of 2015, productivity contracted by 2.6 percent.74 The slowdowns in income and productivity are not only true of the United States—they apply to the rest of the advanced industrialized democracies as well.

Gordon speculates that by the year 2100, growth in GDP per capita could fall to pre-1800 levels. This is because, as Tyler Cowen has argued, many of the drivers of economic growth in the developed world for the past two centuries are now close to being tapped out: “We’re trying to eke out gains from marginal improvements in how we’ve done things for quite a few decades. That kind of process isn’t going to yield massive improvements in our living standards.”75 The “low-hanging fruit” of demographic and trade expansions will not play much of a role in boosting economic growth in the developed world. All of the demographic evidence shows a decline of working-age population in the OECD economies. Japan is projected to lose over a quarter of its labor force; Germany, Portugal and South Korea are projected to lose close to twenty percent.76 Trade will also be less of a driver of economic growth for these economies. Further trade liberalization is certainly possible, as demonstrated by the ongoing negotiations of the Trans-Pacific Partnership and Transatlantic Trade and Investment Partnership. Still, estimates of these agreements’ effect on economic growth pale beside the estimates of past trade liberalization on economic growth.77

The erosion of the trade and demographic drivers puts even more pressure on technological innovation to be the engine of economic growth in the developed world. As one McKinsey analysis concluded, “For economic growth to match its historical rates, virtually all of it must come from increases in labor productivity.”78 Growth in labor productivity is partially a function of capital investment, but mostly a function of technological innovation. The key question is whether the pace of technological innovation will sustain itself.

This remains a known unknown. The pace of innovation relative to global population has slowed dramatically over the past fifty years.79 Consider that the developed world still relies on the same general purpose technologies of modern society that were originally invented 50-100 years ago: the automobile, airplane, telephone, refrigerator, and computer. To be sure, all of these technologies have improved in recent decades, in some cases dramatically. But nothing new has replaced them. And even these improvements have not necessarily had dramatic systemic effects. For example, the average speed on a passenger aircraft has actually fallen since the introduction of the Boeing 707 in 1958, because of the need to conserve fuel. For all of the talk of “disruptive innovations,” the effect of these disruptions on both the business world and aggregate economic growth have been exaggerated.80

At present, many of the fields that seem promising for innovation—nanotechnology, green energy, and so forth—require massive fixed investments. Only large institutions, like research universities, multinational corporations and government entities, can play in that kind of game. Joseph Schumpeter warned that once large organizations became the primary engine of innovation, the pace of change would naturally slow down. Because large organizations are inherently bureaucratic and conservative, they will be less able to imagine radical innovations.81 What if the “secular stagnation” debate is really just a harbinger of a deeper debate about a return to pre-19th century growth levels?

An obvious counter to this argument is that the pace of technological innovation in laptops, smart phones, tablets, and the Internet of things has accelerated. This is undeniably true—but the problem is that the gains in utility have not been, strictly speaking, economic. Most of the important innovations that we think about with respect to the Internet—Facebook, Twitter, Wikipedia, YouTube and so forth —are free technologies for consumers. As Tyler Cowen argues, “The big technological gains are coming in revenue-deficient sectors.”82 They generate lots of enjoyment but little employment. The largest and most dynamic information technology firms, like Google and Apple, hire only a fraction of the people who worked for General Motors in its heyday. At the same time, Internet-based content has eroded the financial viability of other parts of the economy. Content-providing sectors—such as music, entertainment, and journalism—have suffered directly. The growth of “sharing economy” firms like Uber and Airbnb that develop peer-to-peer markets are causing similar levels of creative disruption to the travel and tourism sectors.83 The rapid acceleration of automation is also leading to debates about whether the “lump of labor” fallacy remains a fallacy—in other words, whether displaced workers will be able to find new employment.84

A slow-growth economic trajectory also creates policy problems that increase the likelihood of even slower growth. Higher growth is a political palliative that makes structural reforms easier. For example, Germany prides itself on the “Hartz reforms” to its labor markets last decade, and has advocated similar policies for the rest of the Eurozone since the start of the 2008 financial crisis. But the Hartz reforms were accomplished during a global economic upswing, boosting German exports and cushioning the shortterm cost of the reforms themselves. In a low-growth world, other economies will be understandably reluctant to engage in such reforms.

It is possible that concerns about a radical growth slowdown are exaggerated. In 1987, Robert Solow famously said, “You can see the computer age everywhere but in the productivity statistics.”85 A decade later, the late 1990s productivity surge was in full bloom. Economists are furiously debating whether the visible innovations in the information sector are leading to productivity advances that are simply going undetected in the current productivity statistics.86 Google’s chief economist Hal Varian, echoing Solow from a generation ago, asserts that “there is a lack of appreciation for what’s happening in Silicon Valley, because we don’t have a good way to measure it.”87 It is also possible that current innovations will only lead to gains in labor productivity a decade from now. The OECD argues that the productivity problem resides in firms far from the leading edge failing to adopt new technologies and systems.88 There are plenty of sectors, such as health or education, in which technological innovations can yield significant productivity gains. It would foolhardy to predict the end of radical innovations.

But the possibility of a technological slowdown is a significant “known unknown.” And if such a slowdown occurs, it would have catastrophic effects on the public finances of the OECD economies. Most of the developed world will have to support disproportionately large numbers of pensioners by 2036; slower-growing economies will worsen the debt-to-GDP ratios of most of these economies, causing further macroeconomic stresses—and, potentially, political unrest from increasingly stringent budget constraints.89

#### Slow Growth exacerbates all of the world’s problems and risks extinction

HAASS ’13 (Richard N.; President of the Council on Foreign Relations, previously served as Director of Policy Planning for the US State Department, “The World Without America,” 4/30, https://www.project-syndicate.org/commentary/repairing-the-roots-of-american-power-by-richard-n--haass)ww

Let me posit a radical idea: The most critical threat facing the United States now and for the foreseeable future is not a rising China, a reckless North Korea, a nuclear Iran, modern terrorism, or climate change. Although all of these constitute potential or actual threats, the biggest challenges facing the US are its burgeoning debt, crumbling infrastructure, second-rate primary and secondary schools, outdated immigration system, and slow economic growth – in short, the domestic foundations of American power.

Readers in other countries may be tempted to react to this judgment with a dose of schadenfreude, finding more than a little satisfaction in America’s difficulties. Such a response should not be surprising. The US and those representing it have been guilty of hubris (the US may often be the indispensable nation, but it would be better if others pointed this out), and examples of inconsistency between America’s practices and its principles understandably provoke charges of hypocrisy. When America does not adhere to the principles that it preaches to others, it breeds resentment.

But, like most temptations, the urge to gloat at America’s imperfections and struggles ought to be resisted. People around the globe should be careful what they wish for. America’s failure to deal with its internal challenges would come at a steep price. Indeed, the rest of the world’s stake in American success is nearly as large as that of the US itself.

Part of the reason is economic. The US economy still accounts for about one-quarter of global output. If US growth accelerates, America’s capacity to consume other countries’ goods and services will increase, thereby boosting growth around the world. At a time when Europe is drifting and Asia is slowing, only the US (or, more broadly, North America) has the potential to drive global economic recovery.2

The US remains a unique source of innovation. Most of the world’s citizens communicate with mobile devices based on technology developed in Silicon Valley; likewise, the Internet was made in America. More recently, new technologies developed in the US greatly increase the ability to extract oil and natural gas from underground formations. This technology is now making its way around the globe, allowing other societies to increase their energy production and decrease both their reliance on costly imports and their carbon emissions.

The US is also an invaluable source of ideas. Its world-class universities educate a significant percentage of future world leaders. More fundamentally, the US has long been a leading example of what market economies and democratic politics can accomplish. People and governments around the world are far more likely to become more open if the American model is perceived to be succeeding.

Finally, the world faces many serious challenges, ranging from the need to halt the spread of weapons of mass destruction, fight climate change, and maintain a functioning world economic order that promotes trade and investment to regulating practices in cyberspace, improving global health, and preventing armed conflicts. These problems will not simply go away or sort themselves out.

While Adam Smith’s “invisible hand” may ensure the success of free markets, it is powerless in the world of geopolitics. Order requires the visible hand of leadership to formulate and realize global responses to global challenges.1

Don’t get me wrong: None of this is meant to suggest that the US can deal effectively with the world’s problems on its own. Unilateralism rarely works. It is not just that the US lacks the means; the very nature of contemporary global problems suggests that only collective responses stand a good chance of succeeding.

But multilateralism is much easier to advocate than to design and implement. Right now there is only one candidate for this role: the US. No other country has the necessary combination of capability and outlook.

This brings me back to the argument that the US must put its house in order – economically, physically, socially, and politically – if it is to have the resources needed to promote order in the world. Everyone should hope that it does: The alternative to a world led by the US is not a world led by China, Europe, Russia, Japan, India, or any other country, but rather a world that is not led at all. Such a world would almost certainly be characterized by chronic crisis and conflict. That would be bad not just for Americans, but for the vast majority of the planet’s inhabitants.

### Plan

#### The United States federal government should substantially raise the annual limit for employment-based immigrants, eliminate the per-country limits for employment-based immigrants, and exempt the dependents of sponsored immigrants and individuals with graduate degrees in science and engineering fields from the numerical limit.

### Solvency

#### The Plan sends a signal to potential foreign students that resolves uncertainty

NFAP, 7 (May 2007, National Foundation for American Policy - 501(c)(3) non-profit, non-partisan public policy research organization based in Arlington, Virginia focusing on trade, immigration and related issues, “U.S.GREEN CARD DELAYS WORSEN FOR EMPLOYMENT-BASED IMMIGRANTS: OPTIONS AVAILABLE FOR CONGRESS TO FIX THE PROBLEM,” <http://www.nfap.com/pdf/0507brief-greencard-backlog.pdf>, accessed on 6/7/18, JMP)

BACKGROUND

Today, many of the world’s most talented people come to America, wish to join our society, and are told to wait five years or more for a green card (permanent residence). This sends a signal to many international students and other outstanding individuals that America may not be the place to build your career or raise your family. Given the importance of foreign-born scientists and engineers to the U.S. economy, failure to solve this problem threatens the level of innovation that takes place in America and the competitiveness of many U.S. companies.

Patricia McDermott, a manager at Keane, Inc., which has an estimated 225 sponsored employees “in limbo” waiting for employment-based green cards, says the waits inflict an enormous “human cost” on individuals and their families.1 These individuals and others like them were generally first hired on H-1B temporary visas, which are good for only two three-year periods but can be extended if a green card application is pending. For H-1B professionals to stay in the country permanently they must be sponsored for permanent residence (green card) by an employer. (Some foreign nationals may qualify in categories that do not require employer sponsorship.)

Those waiting for their green cards cannot travel freely nor, in most cases, can they transfer positions or have their spouses work.2 This also harms innovation, as those with new ideas cannot go on to start new companies or gain venture capital, as in the past. A study released by the National Venture Capital Association found that since 1990 one in four (25 percent) of America’s publicly traded venture-backed companies had at least one immigrant founder.3 Individuals are often hesitant to change jobs, since that would often trigger the start of a new application and waiting period.

WAIT TIMES FOR EMPLOYMENT-BASED IMMIGRANTS

By law, the current annual limit on employment-based immigrant visas (green cards) is 140,000. This has demonstrated to be well below demand, creating backlogs of 5 years or more in key categories. Such wait times make it virtually impossible for individuals to be hired directly on green cards. (The 140,000 figure includes spouses and minor children of the sponsored immigrant.) The wait times do not include “labor certification” processing at the U.S. Department of Labor.

Table 1 represents NFAP’s current estimates of likely wait times. In certain categories, the unavailability of green cards has worsened significantly in the past two years. An employment-based immigrant in the Skilled Workers and Professionals category (3rd preference) can expect to wait at least 5 years for a green card from most countries but 6 years from India, which is longer than the wait projected last year for potential immigrants from India. These wait times are likely to worsen further absent legislative changes by Congress. The wait times for Priority Workers (1st preference) and Advanced Degree Holders and Persons of Exceptional Ability from China and India range from 1 to 3 years.4

Wait times are based on “cut-off dates.” To stay within the numerical limits, after estimating the demand in a category, the State Department assigns a “cut-off” date that leads to processing only applications filed prior to that date. Per-country limits for employment-based immigrants are generally set at 7% of the 140,000 annual limit, though they can exceed 7% if visa slots would otherwise be left unused for skilled workers.5

**[table omitted]**

THE CURRENT BACKLOG

In this NFAP analysis, by "backlog" we refer to a long list of applicants registered on immigrant visa waiting lists whose turn cannot be reached because of the annual numerical limitations on immigration. By definition, an alien cannot be registered on an immigrant visa waiting list until the petition filed on his/her behalf has been approved by U.S. Citizenship and Immigration Services (USCIS).

The information on the current wait times for employment-based immigrant visas in Table 1 is based on the U.S. Department of State Visa Bulletin (May 2007). As one can see, for most countries the wait in the third preference (the most common skilled employment-based category) is 5 years or more. But it’s possible that even these estimates understate the true eventual waiting times, since, as GAO has pointed out, “The availability of visas issued by the Department of State will not affect the backlog as defined by U.S. Citizenship and Immigration Services (USCIS) because USCIS excludes from its count of backlog those cases for which a visa is not available.” 6

A key reason for this is the existence of “per country” limits. As GAO explains: There are also annual numerical limitations on the number of visas that can be allocated per country under each of the preference categories. Thus, even if the annual limit for a preference category has not been exceeded, visas may not be available to immigrants from countries with high rates of immigration to the United States, such as China and India, because of the per country limits.”7

While we do not know the precise extent of the State Department backlog of employment-based immigrant cases (and the number cases not yet adjudicated at USCIS), it is fair to assume it is quite large by examining a few facts. 1) Approximately 120,000 individuals a year have received new approved H-1B petitions for initial employment in each of the past 6 years, according to the Department of Homeland Security.8 2) It is estimated that half or more of these individuals have been (or will be) sponsored for a green card by their employers. 3) There are no per country limits on H-1B visas and, logically, the bulk of these temporary visas go to nationals from countries with large populations and sound technical educational systems. Many such individuals come to the United States first as international students before being recruiting on campuses after graduation. India has accounted for approximately half of H-1B professionals each year. In FY 2005, approximately 57,000 H-1B petitions were approved for initial employment for professionals from India and about 11,000 for those from China. 4) H-1B petitions do not count spouses or children, which when counted for immigration estimates usually are calculated as 1.2 dependents per principal immigrant.

Adding these factors together, it is not unreasonable to assume there could be as many as 150,000 to 200,000 Indian nationals in the United States waiting for an employment-based green card. Nationals from China and Mexico are more likely to be backlogged in the tens of thousands. These figures could be higher for a number of reasons, since individuals could also be in the United States on other visa types (L-1 or J-1) and be sponsored for a green card.

Given that under the current employment-based green card quotas and per country limits as few as 1,275 professionals from India or China may end up receiving a green card in a preference category in a given year (2,803 counting dependents), it’s clear that absent significant Congressional action the wait for individuals from particular countries will be extremely long indeed.

UNDERSTANDING THE IMPACT OF PER COUNTRY AND ANNUAL LIMITS

In 1990 the existing system of separate ceilings on “family-based” and “employment-based” immigration was established, with the per country ceiling applicable across both systems.

Currently, the overall annual limitation on family-based immigration is 226,000 and, as noted, 140,000 for employment-based immigration. Each preference is assigned a percentage of the overall total. Within those totals, there is a limit (the per country ceiling) of 7% on immigration by natives of any single foreign state. The per country ceiling is pro-rated among the preferences, so that in each preference under both overall limitations natives of any single foreign state are limited to 7% of the visa numbers available for that preference.

In the 109th Congress the Senate considered and passed S. 2611, an omnibus immigration bill that included large increases in the annual numerical limitations on immigration, primarily designed to address the significant backlogs on family and employment-based immigration. (In addition, the bill also included provisions expanding classes of employment-based immigrants exempt from the annual numerical limitations.) S. 2611 never became law, since the House and the Senate never held a conference to reconcile S. 2611 with a House-passed omnibus immigration bill.9

S. 2611 has not been reintroduced in the current Congress, but a similar (but not identical) bill, H.R. 1645 (the STRIVE Act), has been introduced in the House and it is expected that there will further debate and consideration of omnibus immigration legislation before the 110th Congress ends, including consideration of portions of S. 2611.

Currently, the annual overall limitation on employment-based immigration of 140,000 is apportioned among five preference classes. The first three are reserved for needed workers and their spouses and children.

Some argue that even proposed major increases in employment-based immigration will not totally eliminate the current backlogs in the first three employment-based preferences since the per country ceiling will prevent natives of selected foreign states from benefiting from the increases. The foreign states involved are China, India, Mexico and the Philippines. All are countries from which demand for immigration across both limitations exceeds the current per country ceiling.

Under the current system the per country ceiling on the first three employment-based preference is 2,803 per preference, a total of 8,409. Using the State Department’s estimate that a worker in those three preferences has an average of 1.2 dependents (spouse & children), roughly 1,275 actual needed workers in each preference from each of the four foreign states concerned become permanent residents, a total of 3,825.

Under S. 2611, the per country ceiling would be increased from 7 percent of the overall limitation to 10 percent. Because of the major increase in the overall employment-based limitation and changes in the apportionment of the limitation among the preferences, the new total for each of the four foreign states would be 6,750 each for the first two preferences and 15,750 for the third preference, a total of 29,250.

More important, under S. 2611, the spouses and children of employment-based immigrants would be exempt from both the overall employment-based limitation and the per country ceiling. Thus, the number of actual needed workers from each of the four foreign states will increase from roughly 3,825 to 29,250, approximately a seven-fold increase.

In addition, a separate provision of S. 2611 will exempt some of the needed second and third preference workers themselves from all numerical limitations for a ten-year period.10 However, the bill also put in place a 650,000 ceiling on all employment-based immigrants, regardless of whether they are exempt from other numerical limitations.11

The STRIVE Act increases the limits on employment-based immigration and includes exemptions from the cap. But it is not clear how extensive some of the exemptions will be used initially, given their specificity. For individuals not exempt from the new annual employment limit, the STRIVE Act allows the per country limit to rise from 7 percent to 10 percent. Like S. 2611, the STRIVE Act also puts in place a 650,000 ceiling on all employment-based immigrants, regardless of whether they are exempt from other numerical limitations.

BOTTOM LINE ASSESSMENT

Despite the employment-based immigration increases proposed in S. 2611 and the STRIVE Act, it does not appear the backlogs for nationals from certain high volume countries will be eliminated in the near term due to the impact of the per country limits. It also appears that with the new increases in numbers we may have a situation where, for example, a Moroccan computer professional might receive his green card in one year, while an Indian engineer might wait four years. In essence, the Indian would be penalized for having been born in a country with a large population.

Given what we know about the possible extent of the employment-based backlogs and the likely impact of the per country limits in preventing timely elimination of those backlogs, it may be time to consider eliminating the per country limits for employment-based immigrants.

THE CASE FOR MAINTAINING THE CURRENT PER COUNTRY LIMITS FOR EMPLOYMENT-BASED IMMIGRANTS

One could argue that individuals from some countries should not represent an overwhelming number of the nation’s immigrants in a category, in this case, the employment-based category. It could also be argued that if we are going to maintain the per country limits for family immigration, then we should keep them for employment-based immigration as well. Finally, one could state that Congress established per country limits for a reason and may not want to jettison something that has been a part of the law for many years.

THE CASE FOR ELIMINATING PER COUNTRY LIMITS FOR EMPLOYMENT-BASED IMMIGRANTS

Counterbalancing the tendency of Congress to want to maintain provisions that have existed in law for many years, there is a compelling case to be made for simply eliminating the per country limits for employment-based immigrants. First, back in 2000, Congress made the per country limits moot or inoperable in any year when utilizing the per country limits would result in employment-based visas going unused. This was done because in some years, only 90,000 of the 140,000 employment-based limit would be used, while would-be immigrants from India and China were unable to obtain green cards even though 50,000 visa slots would simply go unused.12

Second, in addition to a policy of not applying the per country limits when employment-based green cards would go unused, Congress already permits hiring on H-1B temporary visas to be made without regard to nation of origin. It is not surprising that nationals of countries with large populations are among the most numerous recipients of U.S. company job offers and H-1B visas. Since so many H-1B professionals are later sponsored for green cards by employers there is a disconnect in U.S. policy between the start of the path to permanent residence (H-1B temporary visas that include no per country limits) and the path’s final destination (green card quotas with strict per country limits).

Third, the purpose of the per country limits for family-based limits seem different than those for employment. In the family categories the purpose is to prevent one or a few countries from crowding out individuals from other countries. In the employment-based categories, U.S. employers are hiring based on merit, without regard to race, religion or nationality. In fact, it is a moral and legal hallmark in America that hiring be accomplished without regard to such factors. Ironically, if U.S. companies decided among themselves to offer green cards to only a certain number of Indians or Chinese in a given year, then they would face both public and legal scorn. However, in essence, the U.S. government is mandating such a policy for U.S. companies.

Fourth, there is a practical issue with regards to what is the intent of U.S. policy or new legislation. If the intent is to eliminate or significantly reduce the employment-based backlog, then that goal may be incompatible with maintaining per country limits for employment-based immigration at 7 percent or even 10 percent.

POLICY OPTIONS

1) Maintain the Status Quo. Congress could decide to maintain the status quo and not increase employment-based green card quotas, add new exemptions from the quotas, or raise the per country limits. Such as policy will allow current backlogs to worsen and likely lead to more professionals and researchers leaving the United States out of frustration or deciding not to come to America in the first place.

2) Raise Quotas and Add Exemptions But Change Per Country Limits Minimally. This is the approach taken in S. 2611 and the STRIVE Act. It is not clear whether increasing the per country limit from only 7 to 10 percent was made because the two bills’ authors thought this would be sufficient to eliminate the backlogs or for other reasons. Analysis shows that raising the per country limit only to 10 percent, despite the other quota increases and exemptions added to the law, may still result in significant wait times for a number of years for engineers and scientists from India and possibly China and other countries. Such a policy would likely have an effect similar to that mentioned above but much less so given the quota increases and exemptions.

3) Clear the Employment-Based Backlog by Declaring Current Registrants Non-Quota. C.D. Scully, a former high ranking State Department official in the Visa Office, notes that a proposal to declare current registrants "non-quota" (to exempt them from numerical limitations on immigration) coupled with more modest increase in the employment-based immigration system might prove less contentious than the increases proposed in S.2611 or even in H.R. 1645 (the current bill). Such a proposal could be limited to registrants physically present in the United States on a specified date, which would likely include almost all backlogged applicants in the first three employment-based preferences, as well as a substantial number of those backlogged in the family-based preferences.13 Whether or not this proves less contentious politically is for elected officials to decide but it is offered here as a policy option.

4) Raise Quotas and Add Exemptions and Eliminate Per Limits for Employment-Based Immigration. If the goal is to come close to making employment-based green card categories current by substantially reducing or doing away with the current employment-based green card backlogs, then eliminating the per country limits for skilled employment-based immigrants is likely the best alternative to achieve that result. As discussed above, Congress already has a partial policy, particularly on H-1B visas, of taking no stand on the country of origin of the skilled foreign nationals hired by U.S. employers. Eliminating the per country limits would make the policy consistent with H-1B visas and would also establish a policy going forward that is unlikely to result in employees from large countries experiencing longer waits for green cards than individuals from small nations. Making employment-based green card categories current for skilled immigrants could provide important competitive advantages for U.S. employers battling for talent against foreign competitors.

## Innovation Extensions

### A/T: Alt Causes to Enrollment

#### America is leading now, but changes to immigration are necessary to prevent decline

HAN et al ’15 (Xueying; Center for Nanotechnology in Society – University of California-Santa Barbara, “Will They Stay or Will They Go? International Graduate Students and Their Decisions to Stay or Leave the U.S. upon Graduation,” 3/11, http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0118183)ww

Overall, our survey and interviews suggest that the American university system is still viewed as a world-class destination for international students to train and gain experience in graduate level science and engineering. As a result, the American university system continues to attract some of the world’s top technical talent, thus remaining a beneficiary of the high level of skills and unique perspective offered by the world’s top international students. While our study was performed at a single institution, we received a clear impression that the international graduate student population is composed of a highly motivated and talented group of individuals that are adding substantial value to the university environment, both through providing the local academic community with valuable direct connections to international professional networks as well as bringing different viewpoints to bear on complex problems.

We conclude that a major reason the U.S. academic system remains at the forefront of the world’s scientific communities is because the U.S. system remains so inclusive to the diverse, talented international students who are seeking to pursue educational opportunities outside of their home countries. The United States was home to 28% of all globally mobile students in 2001 and 19% of all globally mobile students in 2012 [48]. The decline in percent share of globally mobile students coming to the U.S. is likely due to multitude of reasons not limited to increased effort put into recruiting foreign students by key competitive nations, immigration-friendly visa policies by other countries, and hesitancy of applying to U.S. institutions due to changing governmental regulations [49, 50]. Despite the decrease in the global share of international students, the U.S. remains the number one destination for students [48]. We therefore find it important to conclude by noting that our interviews brought up two recurring themes that may have direct relevance to the continued excellence of the U.S. university system:

Many students expressed concern about ways in which the complex nature of America’s immigration policies hinders their ability to succeed. In particular, uncertainties about obtaining green cards following graduation were listed as a deterrent for choosing to study in the U.S. and attempting to stay following graduation.

Many students also noted that the U.S. is no longer an automatic choice for obtaining the best PhD education in science and engineering. In particular, Europe was listed as becoming increasingly competitive choice for many students and their undergraduate colleagues. One cause of this is the EU’s relaxed immigration policies, under which students from EU Member States have the opportunity to study at institutions in other EU countries. With cost and proximity so important to students from Asia, why go all the way the U.S.?

Both of these themes show that policy makers can no longer safely assume that the U.S. university system will attract the world’s top talent simply by the virtue of being the world’s most highly desired academic destination. If the U.S. wishes to continue to both attract and keep the world’s best young scientific minds, policy makers must make changes to the current immigration policies regarding advanced degree STEM holders. Universities in other countries are seen as increasing in scientific competitiveness, and as a result the U.S. may lose out to other regions in attracting scientists in the global talent pool. This, in turn, could compromise America’s leading position in research and innovation.

#### Green Cards are key to Attracting and Retaining Foreign Students

HAN et al ’15 (Xueying; Center for Nanotechnology in Society – University of California-Santa Barbara, “Will They Stay or Will They Go? International Graduate Students and Their Decisions to Stay or Leave the U.S. upon Graduation,” 3/11, http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0118183)ww

The predominant method for foreign citizens to remain and work in the U.S. currently is through the H-1B visa program, in which foreign workers are sponsored by U.S. businesses. The H-1B visa has been widely criticized for having high rejection rates, low caps, and contributing to the large exodus of highly skilled immigrant workers leaving the U.S. [5]. For the H-1B fiscal year (FY) 2015 “cap season,” which began on April 1, 2014, a regular cap of 65,000 H-1B visas, and an exemption of 20,000 H-1B visas for individuals who have obtained a U.S. master’s degree or higher, were mandated [39]. For the FY 2014 cap season, the H-1B visas were capped at 65,000 visas total, with no exemptions for higher degree recipients. The FY 2014 cap filled within the first week of the filing period. During this time, the U.S. Citizenship and Immigration Services office received approximately 124,000 H-1B petitions [39].

Students recognize the limitations imposed by these policies. “The H-1 visa makes you get a sponsor for 5 years or so and you are bound to that employer and that is not very attractive. If the U.S. wants to retain talent, people need freedom to pursue what they want to research,” stated an Electrical and Computer Engineering graduate student. A Mechanical Engineering graduate student from a country with poor relations with the U.S. stated the frustration felt by many international students: “The fact that you don’t have a green card at the end of your PhD—it’s a nightmare. For international students, not having a green card, it impacts the job search, everything. The U.S. is welcoming to graduate students to come and study but there doesn’t seem to be a plan for after students graduate. Students settle for jobs that are below them because they work for companies that will provide them with a green card.”

Studies have shown that foreign scientists and entrepreneurs play an important role in the U.S. economy because they not only help create new businesses and jobs, but are also a key source of American innovation: foreign-born scientists and engineers contribute to more than half of the international patents filed by U.S. based multinational corporations (for a review, see [5]). Our study suggests that changes in the current U.S. immigration policy regarding PhD graduates in STEM fields are needed if the U.S. wants to retain the talent that it has helped create. American policymakers are aware of the importance in retaining foreign scientists who have been trained in the U.S. Most recently, U.S. lawmakers proposed legislation known as the ‘Stopping Trained in America PhDs from Leaving the Economy Act of 2011’ (i.e., STAPLE Act) to exempt PhD STEM degree holders who graduated from a U.S. institution of higher education from the numerical limitations of the H-1B visa and to be admitted for permanent residence (i.e., green card) went before Congress in January 2011 [40]. The act did not pass the 112th Congress (2011–2012) and was reintroduced on March 2013 to the 113th Congress (2013–2014) [41]. The bill, if passed, would exempt foreign-born individuals who have a U.S. STEM PhD diploma from the H-1B numerical limitations. The potential economic impact that foreign-born, U.S. trained scientists can have on a country has been recognized by many source countries (Table 1). These countries have created incentive programs in the hopes of luring highly skilled students who have been educated abroad back to their home countries. The effectiveness of these programs, however, is unclear.

#### US leading now, but it’s in jeopardy

HAN et al ’15 (Xueying; Center for Nanotechnology in Society – University of California-Santa Barbara, “Will They Stay or Will They Go? International Graduate Students and Their Decisions to Stay or Leave the U.S. upon Graduation,” 3/11, http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0118183)ww

In the American context, many of the most innovative scientists and engineers migrated to the United States to pursue an education [3, 11]. In fact, approximately 40% of science and engineering post-graduate students in the United States are foreign-born, yet this rate is dropping as the combination of stricter immigration laws and the maturation of university systems abroad have lured students elsewhere [3, 21]. The largest source country is China, while the United States is the most popular destination country [11].

#### Uncertain and cumbersome visa policies are the main deterrent for international students’ decision to remain the U.S. after graduating

Xueying, 15 --- Postdoctoral Scholar of Nanotechnology at UC Santa Barbara (4/1/15, Han, “How to make overseas STEM students stay in the US,” <https://www.weforum.org/agenda/2015/04/how-to-make-overseas-stem-students-stay-in-the-us/>, accessed on 6/25/18, JMP)

Science, technology, engineering and math (STEM) disciplines in the US have come to heavily rely on international students, who constitute about a third of all STEM graduate students in the US.

So what makes these individuals stay in the US upon graduation? This has come to be an important question considering that for science and engineering, 40% of US doctorates awarded today are to people from abroad. Understanding why international students may or may not want to leave the US and where they choose to work after they graduate is crucial for future immigration policies.

As a postdoctoral fellow at the Center for Nanotechnology in Society at the University of California, Santa Barbara, I am part of an interdisciplinary research group headed by Richard Appelbaum that investigated international students’ career choices and found that those interested in becoming entrepreneurs were most inclined to stay after graduation.

US still a magnet for the entrepreneurial

Among multiple factors, the choice of career plays a key role in students deciding to stay or leave the US upon graduation. Our study found those who wanted to work with business groups, or start their own business, or work for a non-governmental organization had a 90% likelihood of wanting to stay in the US.

This suggests to us that the US continues to be viewed as a hub for innovation and research.

However, for those wanting a career in academia or a governmental agency, the choice is more complicated and depends on a combination of social, professional and personal reasons.

They come but they are going back in higher numbers

Perceived as a global leader in STEM innovation, the US remains the most popular destination in the world for international students.

International students are also more likely to earn a doctorate in a STEM related field than their American counterparts. From 2001 to 2011, 84% of doctorate degrees earned by international students were in STEM compared to only 63% by US citizens and permanent residents.

However, given the importance of STEM research, increasingly many countries have come up with policies and programs to encourage individuals who studied abroad to return to their home countries.

From technological advancements in fully autonomous vehicles to medical breakthroughs in targeted drug delivery, STEM disciplines offer exciting possibilities of research with significant economic and global impact.

A 2011 study focusing only on foreign STEM doctoral recipients in the US has found that the percentage of individuals who stay long-term after graduation has steadily decreased.

At the same time, studies by Brookings, Harvard, NAFSA: Association of International Educators, and the Institute of International Education have highlighted that international students are important contributors to the US economy and are integral to the future economic success of the country.

Immigration policies deter many from staying on

Our study also looked at current immigration policies and whether they acted as a possible barrier in retaining the best talent.

An Optional Practical Training (OPT) period allows individuals to stay and work in the US in a job related to their field of study for 12 months following graduation. Qualified STEM degree holders are then eligible to apply for an additional 17-month OPT extension. But to stay past their OPT period, international students must find a business willing to sponsor them for an H-1B visa.

Respondents in our study were forthright on how frustrating they found the H-1B visa process.

Students say visa issues are a major deterrent

For instance, a graduate student in electrical and computer engineering said:

 “The H-1B visa makes you get a sponsor for five years or so and you are bound to that employer and that is not very attractive. If the US wants to retain talent, people need freedom to pursue what they want to research.”

Another graduate student in mechanical engineering voiced a similar sentiment:

 “The fact that you don’t have a green card at the end of your PhD – it’s a nightmare. For international students, not having a green card – it impacts the job search…everything. ”

For policymakers in the US, such a large pool of STEM students raises crucial questions about the direction of future policies. Do we want to retain international STEM graduates? And if so, how do we go about easing immigration policies restrictions so as to encourage those most likely to contribute to the American economy?

### A/T: Circulation Good

#### The benefits from returnees don’t offset the direct loss of talent

HAN et al ’15 (Xueying; Center for Nanotechnology in Society – University of California-Santa Barbara, “Will They Stay or Will They Go? International Graduate Students and Their Decisions to Stay or Leave the U.S. upon Graduation,” 3/11, http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0118183)ww

Today, with the rise of China, India, and other emerging economies, there is growing concern in policy circles that the U.S. may be losing its competitive edge [51–57]. Our research strongly suggests that the U.S. is losing out in terms of retaining talented foreign students, in large part because U.S. immigration policies make it difficult for the best and the brightest to remain after graduating, even though the large majority would prefer to do so. While some returnees may retain their ties with former U.S. professors and colleagues, it is a matter of debate whether this offsets the direct loss of talent through repatriation. We argue that by reworking immigration policies and thereby making the environment more appealing for the most talented international students to stay for the early portion of their careers, the U.S. would benefit greatly.

#### Returning students undermine US innovation

HAN et al ’15 (Xueying; Center for Nanotechnology in Society – University of California-Santa Barbara, “Will They Stay or Will They Go? International Graduate Students and Their Decisions to Stay or Leave the U.S. upon Graduation,” 3/11, http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0118183)ww

Yet this concern obscures many of the global educational and regulatory trends that are re-shaping innovation in high-tech industries like nanotechnology. Approximately one third of science and engineering post-graduate students in the United States are foreign-born, with particular concentrations in computer science and physics [2]. These numbers dropped precipitously after 9/11, as American immigration policy shifted to be more restrictive and other countries improved their university systems [3], although this trend seems to have leveled off since 2010 [2]. Moreover, upon graduation, many students are drawn back to their birth countries, which seek to offset ‘brain drain’ problems through encouraging expats—particularly those in STEM (Science, Technology, Engineering, and Mathematics) fields—to return. A decline in the number of foreign-born students, scientists and engineers can hamper the United States’ innovation capacity [4, 5].

### A/T: Fast Growth Now

#### Even if the economy is doing fine now – it’s not sustainable without increased immigration

COLVIN ’18 (Geoff; Fortune, “The End is Near for the Economic Boom,” 7/19, http://fortune.com/longform/economic-expansion-end-is-near/)ww

THE OPTIMISM IS BEAMING like the summer sun. America’s big-company CEOs are bursting with confidence, in June expecting to take in even more revenue and make bigger investments than they foresaw in March, when they were more confident than ever before in the 15 years the Business Roundtable has been surveying them. CFOs are just as ebullient. Their perception of the North American economy was recently the highest in the eight years Deloitte had been asking about it. Leaders of small businesses also are brimming with optimism—more than at any time in the past 30 years, reports the National Federation of Independent Business. At least figuratively, confetti is flying, disco balls are spinning, and Champagne corks are popping across the length and breadth of American business.

It seems a shame to pull the plug on the dance music, so we won’t, exactly. As of mid-July, forecasters were expecting the announcement of a knockout GDP growth number for the second quarter, and it wouldn’t be surprising if the U.S. economy continued to grow impressively for at least a few quarters more. Unemployment is near historic lows, and better job prospects are drawing more workers back into the labor force. No wonder business leaders are confident.

Yet all these signs of economic strength mask fundamental realities that won’t fade away and mustn’t be ignored. The current economic expansion is much nearer its end than its beginning, as accumulating hints suggest—including the stagnating stock market, about which we’ll say more in a bit. Already the concerns are pushing up long-term interest rates, which is bad for asset values. Uncertainty about the effects of a trade war is causing many companies to postpone action, dampening potential investment. Indeed, look past those disco balls and you’ll see economic warning signs everywhere. A significant slowdown or even recession is coming sooner or later, and it’s probably coming sooner than you think. It always does.

A Seasonal Change is Coming

LET’S START WITH THE OBVIOUS: Economies follow cycles. Unlike with seasons or the moon or the ocean tides, the timing of the business cycle is never easy to predict. But at some point, economic activity reaches a temporal peak, then begins to contract until eventually it bottoms out and starts growing once more. A familiar sign that we’re in the waning stage of the growing season, ironically, is that the economy overheats—think of it as an Indian summer: Companies push factories to produce more than their long-term sustainable output, pushing employees to work more overtime. Demand is so strong that inflation starts to increase, leading central bankers to raise interest rates, which causes asset values, including stock prices, to level off or fall. Ray Dalio, CEO of the world’s largest hedge fund, Bridgewater Associates, writes, “That is why it is not unusual to see strong economies accompanied by falling stock and other asset prices.”

All of that is happening now. The Congressional Budget Office finds that this year, the economy has begun overheating in just this way, producing more than its sustainable longterm potential. The CBO predicted in May that as wages rose, more people who had left the labor force would come back to work, and, yes, that’s just what happened in June. The labor market continues to be tight, with workers so confident that they’re voluntarily quitting their jobs at the highest rate in 17 years. Meanwhile, employers will likely have to bid up wages in order to attract and keep good workers, hitting corporate earnings directly.

Inflation and interest rates are rising and will likely continue to do so, forecasts the CBO. With all those factors combining, says Dalio, “We know that we are in the ‘late-cycle’ part” of the business cycle.

It is somewhat remarkable, historically speaking, that it has taken this long to get here. America’s current expansion is 110 months old (including the recovery period after the last recession), which makes it a marvel of longevity—the economic equivalent of a supercentenarian. The current growth run is the second longest in the 164 years for which the National Bureau of Economic Research has done the analysis; the average expansion has run a mere 39 months. The only one that outlasted this one lived to be 120 months old (1991–2001).

Old age isn’t by necessity a death knell for an expansion—but then, there is something that tends to accompany it: When things start to break down, they break down en masse. Gerontologists call these tandem and often interlinked pathologies “comorbidities.” And in this economy, just under the skin, there seem to be plenty of them.

We Don’t Have Enough Workers

ECONOMIC OUTPUT is pretty straightforward in concept: It’s a function of labor, capital, and productivity. The simple fact is, it’s hard for an economy to grow very fast if the labor force is growing very slowly, as the U.S. labor force is doing. In the 1970s, it increased at a 2.6% annual rate; now the rate is about 0.2%. One reason for this is that for many decades, Americans have been having fewer and fewer babies (the U.S. fertility rate dropped to a new all-time low last year). As the baby-boom generation continues to age and exit the workforce, the number of American-born workers will sharply decline. This past October, the Bureau of Labor Statistics projected that over the period of 2016 to 2026, there will be 11. 5 million jobs created and a million fewer people in the workforce to fill them.

To counter that demographic drag, American companies have relied on an influx of people from outside the country. Immigrants accounted for 17.1% of the U.S. workforce in 2017, a percentage that has been rising for years. This critical labor force infusion, in fact, has been “as close to a free lunch as there is for America,” as Neel Kashkari, president of the Federal Reserve Bank of Minneapolis, put it earlier this year in an op-ed for the Wall Street Journal.

What’s less widely understood is that there has actually been a global competition for this supplementary workforce. That’s right: Other developed nations with declining birthrates likewise need new workers to help offset their armies of retirees—and America has been winning this battle, luring not just low-wage workers to fill jobs that native-born Americans aren’t rushing to do but also scientists and entrepreneurs. (Witness the Silicon Valley billboards, bought by the government of America’s northern neighbor, imploring techies with visa troubles to “Pivot to Canada.”) That’s why President Trump’s immigrant-hostile policy isn’t just a political stance, it’s also an economic one—and one that’s almost sure to limit the ability of U.S. companies to grow.

So far, America’s immigration crackdown has not significantly reduced net in-migration, but it’s a compounding risk that could have far-reaching consequences for American businesses large and small.

### A/T: Trade Wars Thump

#### Trade disputes aren’t harming the economy

CAIVANO ’18 (Victor; Associated Press, “Mnuchin: Overall US economy not harmed by trade battles,” 7/21, https://abc6onyourside.com/news/nation-world/mnuchin-overall-us-economy-not-harmed-by-trade-battles)ww

U.S. Treasury Secretary Steven Mnuchin said Saturday that the overall U.S. economy has not been harmed by the trade battles set off by President Donald Trump's get-tough policies although some individual sectors have been hurt. He said the administration was exploring ways to help farmers and other specific industries that have been affected.

Mnuchin spoke to reporters on the sidelines of meetings of finance ministers and central bank presidents from the Group of 20 nations, composed of traditional economic powers such as the United States, Japan and Germany and emerging economic powers including China, Brazil, India and Argentina.

Mnuchin said that there had not been an adverse effect on overall growth from the tariffs but that certain industries were being harmed because other countries were retaliating by targeting specific industries.

"Certain countries have targeted very specific levels of things that are not coincidental," Mnuchin told reporters. "So if you are looking at lobsters in Maine or you are looking at bourbon in Kentucky or you are looking at soybeans, there are clearly markets being followed."

Mnuchin said that the administration would be "looking at different opportunities to help the farmers" and provide assistance to other sectors being "unfairly targeted" by tariffs from other nations.

"But I still think from a macro basis, we do not see yet any impact on what's a very positive growth" performance for the U.S. economy this year, Mnuchin said.

At a briefing before the G-20 meetings began, U.S. Treasury officials told reporters that Mnuchin would be prepared to respond to concerns being raised by other countries about the Trump administration's trade policies.

### Growth Stops Conflict

#### Economic growth is key US leadership and preventing conflict

Lieberthal and O'Hanlon 12 (Kenneth and Michael, Senior Fellows in Foreign Policy @ Brookings, "The Real National Security Threat: America's Debt," <http://www.brookings.edu/research/opinions/2012/07/10-economy-foreign-policy-lieberthal-ohanlon>, ENDI)

Lastly, American economic weakness undercuts U.S. leadership abroad. Other countries sense our weakness and wonder about our purported decline. If this perception becomes more widespread, and the case that we are in decline becomes more persuasive, countries will begin to take actions that reflect their skepticism about America's future. Allies and friends will doubt our commitment and may pursue nuclear weapons for their own security, for example; adversaries will sense opportunity and be less restrained in throwing around their weight in their own neighborhoods. The crucial Persian Gulf and Western Pacific regions will likely become less stable. Major war will become more likely. When running for president last time, Obama eloquently articulated big foreign policy visions: healing America's breach with the Muslim world, controlling global climate change, dramatically curbing global poverty through development aid, moving toward a world free of nuclear weapons. These were, and remain, worthy if elusive goals. However, for Obama or his successor, there is now a much more urgent big-picture issue: restoring U.S. economic strength. Nothing else is really possible if that fundamental prerequisite to effective foreign policy is not reestablished.

#### Economic Decline risks nuclear conflict

**Mann 14** (Eric Mann is a special agent with a United States federal agency, with significant domestic and international counterintelligence and counter-terrorism experience. Worked as a special assistant for a U.S. Senator and served as a presidential appointee for the U.S. Congress. He is currently responsible for an internal security and vulnerability assessment program. Bachelors @ University of South Carolina, Graduate degree in Homeland Security @ Georgetown. “AUSTERITY, ECONOMIC DECLINE, AND FINANCIAL WEAPONS OF WAR: A NEW PARADIGM FOR GLOBAL SECURITY,” May 2014, <https://jscholarship.library.jhu.edu/bitstream/handle/1774.2/37262/MANN-THESIS-2014.pdf>)

The conclusions reached in this thesis demonstrate how economic considerations within states can figure prominently into the calculus for future conflicts. The findings also suggest that security issues with economic or financial underpinnings will transcend classical determinants of war and conflict, and change the manner by which rival states engage in hostile acts toward one another. The research shows that security concerns emanating from economic uncertainty and the inherent vulnerabilities within global financial markets will present new challenges for national security, and provide developing states new asymmetric options for balancing against stronger states.¶ The security areas, identified in the proceeding chapters, are likely to mature into global security threats in the immediate future. As the case study on South Korea suggest, the overlapping security issues associated with economic decline and reduced military spending by the United States will affect allied confidence in America’s security guarantees. The study shows that this outcome could cause regional instability or realignments of strategic partnerships in the Asia-pacific region with ramifications for U.S. national security. Rival states and non-state groups may also become emboldened to challenge America’s status in the unipolar international system.¶ The potential risks associated with stolen or loose WMD, resulting from poor security, can also pose a threat to U.S. national security. The case study on Pakistan, Syria and North Korea show how financial constraints affect weapons security making weapons vulnerable to theft, and how financial factors can influence WMD proliferation by contributing to the motivating factors behind a trusted insider’s decision to sell weapons technology. The inherent vulnerabilities within the global financial markets will provide terrorists’ organizations and other non-state groups, who object to the current international system or distribution of power, with opportunities to disrupt global finance and perhaps weaken America’s status. A more ominous threat originates from states intent on increasing diversification of foreign currency holdings, establishing alternatives to the dollar for international trade, or engaging financial warfare against the United States.

## A/T: Internal Brain Drain

### Non-Unique

#### Demographics mean that native enrollment will inevitably decline. Retaining foreign students is key to university revenue

HEGARTY ’14 (Niall; Assistant Professor in the department of Management at the Tobin College of Business at St. John's University, “Where We Are Now –The Presence and Importance of International Students to Universities in the United States,” Journal of International Students, v. 4, i. 3, https://files.eric.ed.gov/fulltext/EJ1054975.pdf)ww

The number of international students present at a university makes a significant contribution to the “personality” of that institution, and also to its financial well-being. With the majority of international students paying full tuition the importance of their presence in American academic life cannot be underscored. The Student Exchange and Visitor Program (SEVP) which falls under Immigration and Customs Enforcement (ICE) reports that the University of Southern California has 9,329; Purdue University has 8,863, and the University of Illinois has 8,320 international students enrolled. These are the three universities with the highest enrollment of foreign students. International students make up approximately one-eighth of Purdue’s total university population and anywhere from 50% to 60% are enrolled in masters or doctoral programs. While the majority of students study engineering, management, and life sciences at Purdue, it also boasts the highest enrollment of any U.S. college of international students studying visual and performing arts (Schoettle, 2008). What sets Purdue apart is its commitment to aggressively recruit and retain international students by spending many thousands of dollars to cater to their needs. Obviously, from the figures of each of the top enrolled universities it becomes clear that the vast majority of international students must be located in smaller and mid-sized universities. Indeed only 144 colleges can boast international student populations of 1,000 or more. Consequently, what these enrollment numbers emphasize is the relevance of this body of full tuition paying students.

The presence of such a large contingent of full tuition paying students has not gone unnoticed - The Institute of International Education reports that almost 62% of institutions have increased recruitment efforts to ensure international student enrollment remains healthy with 31% of institutions specifically focusing their efforts on China. For its part, China provides approximately 244,359 international students to the U.S., which can be seen in Table 1, and Asia in general enrolls over 437,000 students in the U.S. To this end, SUNY, for example, has initiated a five year plan to increase enrollment by 14,000 international students (Lederman, 2011). This phenomenon of U.S. universities strategizing and actively seeking out new international students has been repeated all over the country. Although many universities will tout the benefits of international students and the diversity they bring to campuses, there exists the underlying fact that in the future there will be a decline, demographically, in the number of U.S. domestic students (Heckman & LaFontaine, 2010). Universities are therefore seeking to offset this decline by exploring new geographic regions internationally to maintain enrollment and the inflow of tuition dollars.

### Immigration Good for Colleges

#### Foreign students don’t crowd out domestic talent. They increase program size.

HEGARTY ’14 (Niall; Assistant Professor in the department of Management at the Tobin College of Business at St. John's University, “Where We Are Now –The Presence and Importance of International Students to Universities in the United States,” Journal of International Students, v. 4, i. 3, https://files.eric.ed.gov/fulltext/EJ1054975.pdf)ww

Since the 1970’s doctoral programs have actually grown to accommodate the demand from international students. This is contrary to the belief that domestic students have lost places to international students. Research by Matloff (2013) indicates that international students in Ph.D. programs in technology do not outperform domestic students in terms of dissertation awards and patent applications. This brings attention to the fact that international students come to the U.S. to study with the best domestic minds rather than to replace domestic students in graduate programs. Consequently, it is because of the quality of domestic students that international students are attracted to U.S. universities. The addition of bright international students in advanced study both enhances a program and provides much needed funding. The vast majority of international students pay full tuition and cannot gain entry into the country without proof of financial support for the duration of their studies. Once a student is admitted this is a guaranteed revenue stream for a university for at least two years; four years in the case of an undergraduate student.

#### Failure to retain foreign students will lead to the budgetary collapse of many college programs

HEGARTY ’14 (Niall; Assistant Professor in the department of Management at the Tobin College of Business at St. John's University, “Where We Are Now –The Presence and Importance of International Students to Universities in the United States,” Journal of International Students, v. 4, i. 3, https://files.eric.ed.gov/fulltext/EJ1054975.pdf)ww

An area of study neglected for many years, it is now clear that such a huge economic ingredient to both the U.S. economy and collegiate life needs immediate attention to ensure continued survival of educational programs, the continued international recognition of the U.S. university system, and a positive experience for those willing to choose U.S. universities. University administrators must recognize that international students do and will deliver large portions of tuition revenue and as such their needs must be addressed by colleges and universities. Failure to recognize or plan without this student population in mind may lead to diminished funding for colleges and program failures in certain academic disciplines.

#### Immigrants have a positive effect on the quality of STEM programs and the capacity for more domestic students

ORRENIUS and ZAVODNY ’13 (Pia M.; Federal Reserve Bank of Dallas AND Madeline; Agnes Scott College, “Does Immigration Affect whether U.S. Natives Major in a STEM Field?” January, http://conference.iza.org/conference\_files/AMM\_2013/zavodny\_m2692.pdf)ww

Alternatively, immigrant inflows may boost the likelihood that natives major in a STEM field. Immigrant inflows, particularly of highly skilled immigrants, may put pressure on schools to increase educational resources in math and science. Immigrants and their children may have positive peer effects on other natives. Larger inflows of foreign students who study STEM fields may cause universities to increase the size or quality of their STEM programs, resulting in more natives majoring in those fields.

#### Foreign Students offset declines in education funding. Absent their presence, universities would be forced to raise tuition or decrease per student spending.

BOUND et al ’16 (John; Professor of Economics – University of Michigan, Research Professor – Population Studies Center, Faculty Associate – Survey Research Center, “A Passage to America: University Funding and International Students,” March, https://www.psc.isr.umich.edu/pubs/pdf/rr16-859.pdf)ww

The dramatic increase in foreign undergraduates at U.S. public research universities is closely coupled with institutional adjustments to changes in state appropriations. Overall, increases in foreign enrollment over the last decade are much larger in the public university sector than in other parts of the higher education market. The theoretical framework and evidence presented in this analysis suggests that expanding foreign enrollment at the undergraduate level is an important channel through which public universities buffer changes in state appropriations.

While we are not able to do a full welfare analysis, our results suggest that while added foreign students do not fully offset the adverse consequences of declines in state appropriations they nonetheless do offset some of the losses from declines in state appropriations. In turn, additional foreign undergraduate students are, on average, associated with some decline in instate enrollment.

The capacity of public universities to use this margin of adjustment depends critically on a supply of well-qualified potential undergraduates from abroad with the capacity to pay the tuition charged by U.S. universities. While this supply has been plentiful in the last decade, owing primarily to demographic and economic changes in countries like India and China, this reservoir of talent and resources did not emerge in full force until the millennium. What is more, the supply of such students to U.S. universities is not likely to remain constant in future decades. Growth in home-country institutions of close quality or negative shocks to home-country economies would likely drain this pool of students from abroad.

What also seems clear is that not all universities are in an equally good position to attract foreign students. In general, our results are consistent with the notion that more research-intensive universities have been better positioned to counter the impact of state budget cuts through increasing foreign undergraduate enrollment.

Beyond changes in the composition of undergraduate enrollment, changes in state appropriations are also associated with increase in in-state tuition levels. While added revenue from in-state tuition increases appears to count for the majority of additional tuition revenue generated between 2007 and 2012, research universities would have had to navigate reductions in resources per student or yet larger increases in in-state tuition in the absence of the large pool of foreign students.

### Immigration Good for Innovation

#### The effect is small and likely optimizes innovation

ORRENIUS and ZAVODNY ’13 (Pia M.; Federal Reserve Bank of Dallas AND Madeline; Agnes Scott College, “Does Immigration Affect whether U.S. Natives Major in a STEM Field?” January, http://conference.iza.org/conference\_files/AMM\_2013/zavodny\_m2692.pdf)ww

This study examined whether higher immigration reduces the probability that natives who graduated from college did so with a STEM major. The results suggest that non-Hispanic whites are less likely to major in a STEM field the higher the immigrant share in their age cohort and in the labor force, although the estimated effects are small. This negative result is driven by data from the year 2000, the culmination of a period of strong economic growth, changes in immigration policy, and an Internet boom that led to a surge in inflows of highly skilled immigrants. Higher immigrant shares also appear to discourage Asian women from STEM majors, but they are positively related to the probability that Hispanics major in a STEM field. The immigrant share of college students appears to have the most adverse effect on whether natives major in STEM, suggesting that foreign students crowd out some natives from STEM majors.

Although the results suggest that immigration makes some natives less willing to major in STEM disciplines, there are several caveats to this finding. First, we condition on being a college graduate. The fraction of the population that graduates from college has increased over time, and the selectivity of this pool may have changed. Immigration may affect whether or where natives choose to go to college and whether they ultimately graduate from college. Immigration may raise the bar in STEM fields, increase the selectivity of natives into STEM majors, and ultimately have a positive effect on innovation. Alternatively, if immigration drives down earnings in STEM fields, immigration may reduce selectivity into STEM majors; Lowell et al. (2009) and Bettinger (2010) note a trend of top U.S. students moving from STEM majors to other fields, notably accounting and finance, which pay more. Looking at whether immigration affects selectivity into STEM majors is an important area for future research. Finally, we do not examine whether immigration affects the career choices of STEM majors. Immigration may affect not only whether students choose to major in a STEM field but whether they pursue graduate studies and ultimately a career in STEM.

Even if immigration discourages natives from choosing STEM majors, we caution against drawing policy implications. If foreign students are on average better at STEM fields and therefore more likely to major in those fields, this frees up natives to pursue other careers. To the extent that people choose a profession in accordance with their comparative advantage, the resultant distribution of majors by nativity is optimal. Exceptions to this outcome might be situations where U.S. citizenship is a condition for STEM employment, such as in the defense industry and at national security agencies.

#### Foreign Students drive innovation

HEGARTY ’14 (Niall; Assistant Professor in the department of Management at the Tobin College of Business at St. John's University, “Where We Are Now –The Presence and Importance of International Students to Universities in the United States,” Journal of International Students, v. 4, i. 3, https://files.eric.ed.gov/fulltext/EJ1054975.pdf)ww

Academically, international students are a vital component of research universities. Indeed they are considered to be highly important to U.S. innovation. According to Chellaraj et al., (2008) a 10% increase in international graduate students correlates to a 4.5% increase in patent applications. With the United States secondary educational system considered by to be losing ground on the rest of the world the question then bodes how can its research and development still be competitive. Obviously, if international students are choosing to enroll in research universities such as USC and Purdue then it becomes evident that international students are picking up the mantle of innovation in the U.S. and are essential to these universities’ research functions.

### Immigration Good for Economy

#### Foreign students boost local economies

HEGARTY ’14 (Niall; Assistant Professor in the department of Management at the Tobin College of Business at St. John's University, “Where We Are Now –The Presence and Importance of International Students to Universities in the United States,” Journal of International Students, v. 4, i. 3, https://files.eric.ed.gov/fulltext/EJ1054975.pdf)ww

Thus far this paper has focused on the numbers of international students present in U.S. universities and their importance to university life. However, the effect of international students studying in the U.S. can be felt beyond campus boundaries. The monetary strength of this population has forced not only universities but also local economies to become very sensitive to their presence.

Injecting almost $22 billion dollars into the U.S. economy each year international students are a vital source of revenue. From tuition and fees, to food, clothing, travel, and textbooks almost every other industry within the U.S. benefits from their presence. The value of international students to the U.S. surpasses the gaming industry ($18 billion), weight loss industry ($20 billion), and the domestic music and movie industries combined ($20 billion). The state of Massachusetts alone with a dense number of colleges enjoys almost $1.5 billion each year from educating and hosting these students (Schworm, 2008). In larger urban areas such as New York and California that figure rises to $2.5 billion and $3.2 billion respectively (Table 2).

Even non-traditional destinations such as the state of West Virginia earns close to $60 million each year according to NAFSA. And with Toyota and other Japanese companies committed to the area, WVU has committed to making the university welcoming to international students (Slagle, 2006). However, it seems that the vast majority of universities and colleges are realizing that they can no longer rely solely on their web page and word of mouth in the recruitment of international students. Clearly, the U.S. marketing machine needs to concentrate more on attracting students in this lucrative market.

## A/T: Espionage

### Non-Unique

#### Non-Unique – China has many means of conducting espionage that don’t rely on immigration

NEWMAN ’11 (Alex; Freelance Journalist, The Diplomat, “China's Growing Spy Threat,” 9/19, https://thediplomat.com/2011/09/chinas-growing-spy-threat/?allpages=yes)ww

And because the threat is continually evolving and comes from multiple directions, it’s difficult to deal with, experts say. China uses all known means of stealing information even as it develops ever more ingenious schemes.

Traditional methods, such as infiltrating companies and compromising existing employees, are still widely used. Academic and educational institutions play a crucial role as well—as do the regime’s ‘front companies’ set up in the United States, estimated to number in the thousands by the FBI. Foreign companies with operations in China are said to be particularly vulnerable to losing their secrets.

Meanwhile, more advanced tools like computer hacking are becoming an increasingly important weapon in the regime’s economic-spying arsenal. ‘Their cyber activities have increased in the last ten years quite significantly,’ says Juneau-Katsuya. ‘They are devoting university departments and entire sections of the (People’s Liberation Army) just to that.’

Another key but underestimated strategy employed in China’s quest for trade secrets—corporate acquisitions and joint ventures—makes use of the regime’s vast empire of well-funded, state-owned companies. By purchasing even a significant percentage of a firm, China often obtains important technological know-how. It also buys political influence.

‘China continues to leverage foreign investments, commercial joint ventures, academic exchanges, the experience of repatriated Chinese students and researchers, and state-sponsored industrial/technical espionage to increase the level of technologies and expertise available to support military research, development, and acquisition,’ notes a 2011 US Defense Department report to Congress on Chinese military and security developments.

Especially following the recent recession, the Chinese regime has been on a global shopping spree using its vast cash reserves—buying up all sorts of companies, from car manufacturers to technology enterprises. But countless examples of the use of this tactic have been documented for well over a decade.

Even more alarming for some: A secret 1997 investigation by CSIS and the Royal Canadian Mounted Police entitled ‘Sidewinder’ found that criminal networks affiliated with Chinese intelligence were also intimately involved. The Canadian government essentially dismissed the report, but many analysts believe the collaboration has only grown since then.

In general, firms and universities are simply not doing enough to protect their secrets and technology from China, says Center for Intelligence Studies Chairman Charles Viar. ‘That said, the larger problem involves contractual agreements in which Western companies voluntarily transfer sensitive technologies—often illegally—in order to win contracts with China,’ he points out.

Fisher has similar concerns. He says firms and educational institutions around the world are not simply targets—in many cases they have become ‘compliant victims’ of Chinese intelligence agencies’ designs.

‘Companies and universities must first reach an understanding of how they are aiding and abetting the Chinese Communist dictatorship,’ says Fisher, noting that as long as they crave Chinese money, they will continue bending over backwards to satisfy the regime. ‘This scandal is compounded by the fact that Chinese allies in the capitals of most democracies are succeeding in avoiding or averting the level of critical review that would also lead to defensive action.’

### Status Quo Solves

#### Current safeguards are in place to prevent espionage

SWANSON and BRADSHER ’18 (Ana and Keith; New York Times, “White House Considers Restricting Chinese Researchers Over Espionage Fears,” 4/30, https://www.nytimes.com/2018/04/30/us/politics/trump-china-researchers-espionage.html)ww

The United States already restricts who can work on sensitive technology. Researchers on projects deemed classified are carefully vetted and must obtain security clearances. The next level down are research projects that are subject to so-called export controls — including many with potential military applications, such as computer programs and hardware that might be used to model nuclear explosions. Universities and companies working on this material need to obtain a special license from the government to employ foreign researchers.

These products do not need to leave the United States to fall under export rules. All it takes to trigger export controls is for citizens from certain countries — including China, Russia and many former Soviet republics — to be involved in almost any way. That ranges from physical possession of the product to written descriptions and even verbal discussions of it. The administration is considering broadening the range of goods and services traded with China that would be subject to these so-called deemed export rules.

### Link Turn

#### Restricting talent only makes the problem worse

SWANSON and BRADSHER ’18 (Ana and Keith; New York Times, “White House Considers Restricting Chinese Researchers Over Espionage Fears,” 4/30, https://www.nytimes.com/2018/04/30/us/politics/trump-china-researchers-espionage.html)ww

Yet the academic community is likely to push back on the administration’s efforts over concerns that tighter controls on Chinese nationals could hurt American universities’ ability to collaborate on cutting-edge research and wind up benefiting China even more.

Many students at graduate programs in the United States in computer science, physics, chemistry and other sciences are from China. If the United States makes it harder for aerospace manufacturers, defense contractors and others to employ Chinese nationals, more of these recently trained Chinese graduate students may return to China, taking their skills with them.

Stephen A. Orlins, the president of the National Committee on U.S.-China Relations, said that restricting Chinese researchers would be “tragic” for American universities. “It’s important that we don’t let the security fears overwhelm what has made America great,” he said.

Even Mr. Smith said he did not support tougher restrictions on Chinese researchers. Instead, he said, universities should better educate researchers about existing rules and what to do in case of intellectual property theft.

“With reasonable safeguards I think we can manage it,” he said. “If we were to overreact, I think it could be very damaging to our universities.”

### This is Racist

#### Chinese Espionage arguments rely on racist stereotypes

CHOW ’18 (Tobita; Global Justice Organizer at The People’s Lobby, “With Anti-China Protectionism, the Left Is Aiding Trump’s Xenophobic Agenda,” 7/15, https://truthout.org/articles/with-anti-china-protectionism-the-left-is-aiding-trumps-xenophobic-agenda/)ww

These political efforts to hedge against China are fueling anti-Chinese racism within the United States. The tenor of this racism, and its grip in mainstream politics, is expressed well by Christian Caryl, an opinions editor at The Washington Post, who warns that China has a “strategy to tap the huge ethnic Chinese diaspora in the United States and elsewhere as foot soldiers in China’s influence campaigns.” This image of an entire “ethnic diaspora” as a potential fifth column within US society recalls the internment of Japanese-Americans in WWII.

This racist stereotype is reflected in recent policies and the statements of political leaders. According to a white paper published by the Committee of 100, there is evidence that the FBI engages in racial profiling against people of Chinese and other Asian descent in economic espionage cases. In two high-profile cases, naturalized Chinese-American citizens, Sherry Chen and Xiaoxing Xi, were falsely accused of being Chinese spies stealing intellectual property from the United States. In both cases, the charges were later dropped. Chen’s charges were dropped without explanation, while in Xi’s case the investigators admitted that they had simply misunderstood the technology that Xi works with. In February, Trump’s FBI Director Chris Wray confirmed this institutionalized racism when he declared in a hearing that “the Chinese threat” is “not just a whole of government threat, but a whole-of-society threat.”

More recently, the Trump administration announced new restrictions on visas for people from China, including on international students studying in some fields of science and technology. This is also meant to be a measure to counter “economic espionage” and the theft of intellectual property. This policy again assumes everyone from China to be a potential threat to the US economy and national security. Senator Marco Rubio welcomed this new policy, tweeting, “Imposing limits on some Chinese visas may seem harsh, but it’s necessary. #China poses unprecedented threat. Student & academic visas are another weapon they use against us in their campaign to steal & cheat their way to world dominance.” These visa restrictions have been criticized by university lobby groups, because tuition from Chinese international students has become a financial lifeline for many US universities in the face of reduced public funding for higher education. The restrictions, however, have been largely overlooked by the progressive movement—and the lack of resistance is an open invitation to escalation against this population.

These trends must be examined in light of long-standing racist stereotypes about Chinese people and other Asians. In the United States and much of the Western world, Asians are seen as sources of pure labor power—maximally efficient workers in whom all human capacities that are useful for work (obedience, efficiency, self-discipline, self-denial, studiousness) are overdeveloped, while all other aspects of humanity that do not directly contribute to work (family life, play, creativity, emotion, friendship, autonomy) are degraded, underdeveloped or non-existent. This framework portrays Asians as a step removed from robots. This is especially true of East Asians, who are at the center of the ambiguous and inconsistent category of “Asian” in the US racial imagination.

These racist ideas show up throughout these anti-Chinese trends in both domestic and foreign policy. The racist image of Chinese people as a source of pure economic efficiency makes it easy to see them as little more than a competitive threat to other workers. The racist assumption that Chinese people lack capacities for autonomy or creativity makes it easy to see them as little more than appendages of the Chinese government. As we see in the quotes above, it is common to make Chinese people invisible as individuals, and to imagine them instead as parts of a faceless mass called “China.”

## A/T: R&D CP

### 2AC

#### The counterplan does not solve the advantage – immigrants are key – that is the ANDERSON evidence from the 1AC.

Perm – Do Both. Funding for Research and Development alone cannot solve without increased immigration.

BERNANKE ’11 (Ben S.; Former Chair of the Federal Reserve, “Promoting Research and Development The Government’s Role,” Issues in Science and Technology, v. xxvii, i. 4, Summer, http://issues.org/27-4/bernanke/)ww

Government support for R&D presumes sufficient national capacity to engage in effective research at the desired scale. That capacity, in turn, depends importantly on the supply of qualified scientists, engineers, and other technical workers. Although the system of higher education in the United States remains among the finest in the world, numerous concerns have been raised about this country’s ability to ensure adequate supplies of highly skilled workers. For example, some observers have suggested that bottlenecks in the system limit the number of students receiving undergraduate degrees in science and engineering. Surveys of student intentions in the United States consistently show that the number of students who seek to major in science and engineering exceeds the number accommodated by a wide margin, and waitlists to enroll in technical courses have trended up relative to those in other fields, as has the time required to graduate with a science or engineering degree. Moreover, although the relative wages of science and engineering graduates have increased significantly over the past few decades, the share of undergraduate degrees awarded in science and engineering has been roughly stable. At the same time, critics of K-12 education in the United States have long argued that not enough is being done to encourage and support student interest in science and mathematics. Taken together, these trends suggest that more could be done to increase the number of U.S. students entering scientific and engineering professions.

At least when viewed from the perspective of a single nation, immigration is another path for increasing the supply of highly skilled scientists and researchers. The technological leadership of the United States was and continues to be built in substantial part on the contributions of foreign-born scientists and engineers, both permanent immigrants and those staying in the country only for a time. And, contrary to the notion that highly trained and talented immigrants displace native-born workers in the labor market, scientists and other highly trained professionals who come to the United States tend to enhance the productivity and employment opportunities of those already here, reflecting gains from interaction and cooperation and from the development of critical masses of researchers in technical areas. More generally, technological progress and innovation around the world would be enhanced by lowering national barriers to international scientific cooperation and collaboration.

In the abstract, economists have identified some persuasive justifications for government policies to promote R&D activities, especially those related to basic research. In practice, we know less than we would like about which policies work best. A reasonable strategy for now may be to continue to use a mix of policies to support R&D while taking pains to encourage diverse and even competing approaches by the scientists and engineers receiving support.

We should also keep in mind that funding R&D activity is only part of what the government can do to foster innovation. As I noted, ensuring a sufficient supply of individuals with science and engineering skills is important for promoting innovation, and this need raises questions about education policy as well as immigration policy. Other key policy issues include the definition and enforcement of intellectual property rights and the setting of technical standards. Finally, as someone who spends a lot of time monitoring the economy, let me put in a plug for more work on finding better ways to measure innovation, R&D activity, and intangible capital. We will be more likely to promote innovative activity if we are able to measure it more effectively and document its role in economic growth.

#### The counterplan would have a negative effect on growth

CAMPBELL and SHIRLEY ’18 (Sheila; Principal Analyst in the Congressional Budget Office’s Microeconomic Studies Division AND Chad; CBO’s Deputy Assistant Director for Microeconomic Studies, 6/21, “Estimating the Long-Term Effects of Federal R&D Spending: CBO’s Current Approach and Research Needs,” https://www.cbo.gov/publication/54089)ww

Some studies have suggested that an increase in federal R&D spending could diminish research productivity in both the government and the private sector, particularly for defense research. That would occur if greater federal R&D spending increased the demand for scientists and led to higher salaries for scientists across both public and private sectors. A tight labor market for scientists would make that wage effect more likely, and could in turn have a negative effect on economic growth or alter the amount of spending on R&D by the private sector.

#### Government funding of R&D is crowds out private research and is net negative

KEALEY ’13 (Terence; Vice-Chancellor – University of Buckingham, “The Case Against Public Science,” 8/5, https://www.cato-unbound.org/2013/08/05/terence-kealey/case-against-public-science)ww

The contemporary economic evidence, moreover, confirms that the government funding of R&D has no economic benefit. Thus in 2003 the OECD (Organisation of Economic Cooperation and Development—the industrialized nations’ economic research agency) published its Sources of Economic Growth in OECD Countries, which reviewed all the major measurable factors that might explain the different rates of growth of the 21 leading world economies between 1971 and 1998. And it found that whereas privately funded R&D stimulated economic growth, publicly funded R&D had no impact.

The authors of the report were disconcerted by their own findings. “The negative results for public R&D are surprising,” they wrote. They speculated that publicly funded R&D might crowd out privately funded R&D which, if true, suggests that publicly funded R&D might actually damage economic growth. Certainly both I and Walter Park of the American University had already reported that the OECD data showed that government funding for R&D does indeed crowd out private funding, to the detriment of economic growth. In Park’s words, “the direct effect of public research is weakly negative, as might be the case if public research spending has crowding-out effects which adversely affect private output growth.”

The OECD, Walter Park, and I have therefore—like Adam Smith—tested empirically the model of science as a public or merit good, and we have found it to be wrong: the public funding of research has no beneficial effects on the economy. And the fault in the model lies in one of its fundamental premises, namely that copying other people’s research is cheap and easy. It’s not. Consider industrial technology. When Edwin Mansfield of the University of Pennsylvania examined 48 products that, during the 1970s, had been copied by companies in the chemicals, drugs, electronics, and machinery industries in New England, he found that the costs of copying were on average 65 per cent of the costs of original invention. And the time taken to copy was, on average, 70 per cent of the time taken by the original invention.

Copying is lengthy and expensive because it involves the acquisition of tacit (as opposed to explicit) knowledge. Contrary to myth, people can’t simply read a paper or read a patent or strip down a new product and then copy the innovation. As scholars such as Michael Polanyi (see his classic 1958 book Personal Knowledge) and Harry Collins of the University of Cardiff (see his well-titled 2010 book Tacit and Explicit Knowledge) have shown, copying new science and technology is not a simple matter of following a blueprint: it requires the copier actually to reproduce the steps taken by the originator. Polanyi’s famous quote is “we can know more than we can tell” but it is often shortened to “we know more than we can tell” because that captures the kernel—in science and technology we always know more (tacitly) than we can tell (explicitly). So in 1971, when Harry Collins studied the spread of a technology called the TEA laser, he discovered that the only scientists who succeeded in copying it were those who had visited laboratories where TEA lasers were already up and running: “no-one to whom I have spoken has succeeded in building a TEA laser using written sources (including blueprints and written reports) as the sole source of information.”

#### Private philanthropic funding would fill in absent the counterplan

KEALEY ’13 (Terence; Vice-Chancellor – University of Buckingham, “The Case Against Public Science,” 8/5, https://www.cato-unbound.org/2013/08/05/terence-kealey/case-against-public-science)ww

The strongest argument for the government funding of science today is anecdotal: would we have the internet, say, or the Higgs Boson, but for government funding? Yet anecdotage ignores crowding out. We wouldn’t have had the generation of electricity but for the private funding of Michael Faraday, and if government funding crowds out the private philanthropic funding of science (and it does, because the funding of pure science is determined primarily by GDP per capita, regardless of government largesse) then the advances we have lost thanks to government funding need a scribe—an omniscient one, because we can’t know what those lost advances were—to write them on the deficit side of the balance sheet. Which is also where the opportunity costs should be written: even if the government funding of science yields some benefit, if the benefit to society of having left that money in the pockets of the taxpayer would have been greater, then the net balance to society is negative.

What would the world look like had governments not funded science? It would look like the UK or the United States did when those countries were the unchallenged superpowers of their day. Most research would be concentrated in industry (from which a steady stream of advances in pure science would emerge) but there would also be an armamentarium of private philanthropic funders of university and of foundation science by which non-market, pure research (including on orphan diseases) would be funded.

# NEG

## Innovation Advantage NEG

### Fast Growth Now

#### The economy is growing at unprecedented rates now

ARNOLD and SCHNEIDER ’18 (Chris and Avie; NPR, “U.S. Economy Surges To A 4.1 Percent Growth Pace In 2nd Quarter,” 7/27, https://www.npr.org/2018/07/27/632640711/u-s-could-see-blockbuster-economic-growth-number-today)ww

The U.S. economy had a blockbuster second quarter, with growth surging to a 4.1 percent pace, the Commerce Department said Friday. That was nearly double the first quarter rate of 2.2 percent and the strongest pace in nearly four years.

President Trump has been steadfastly claiming that his policies will catapult the U.S. economy into a much higher rate of growth — 4 percent over the next few years.

That would be about double the growth rate in recent years. And it would almost certainly mean a big boost in the standard of living for many Americans, with higher wages and better public services as the government raked in more tax dollars from a booming economy.

"We've accomplished an economic turnaround of historic proportions," Trump said in remarks at the White House Friday morning. "Once again, we are the economic envy of the entire world."

The president called the 4.1 percent rate "amazing" and said, "As the trade deals come in one by one, we're going to go higher."

Boosted by a 4-percent jump in consumer spending and a 13.3 percent surge in goods exports in the second quarter, the economy expanded at its fastest pace since the 4.9-percent rate of the third quarter of 2014.

"Consumers were really on a tear," said Ian Shepherdson, the chief economist of Pantheon Macroeconomics. Consumer spending, which accounts for nearly 70 percent of economic activity, has been growing at about 2.5 percent, he noted. "So to grow at 4 [percent] probably tells you people were spending the tax cuts that they enjoyed back in January, but that's extremely unlikely to happen again.

Peter Navarro, the top trade adviser to the president, told NPR Friday before the GDP report was released: "What we're seeing in the Trump economy is wages going up for the first time in a long time. We're seeing unemployment go down to levels we haven't seen since the 1990s. This is a strong economy. This president's economic policies are succeeding, and trade is a big part of that."

### Trade Wars Thump

#### Trade Wars will have a larger effect on the economy than immigration

COLVIN ’18 (Geoff; Fortune, “The End is Near for the Economic Boom,” 7/19, http://fortune.com/longform/economic-expansion-end-is-near/)ww

BY ITSELF, the Trump administration’s immigration policies may not be enough to stop growth in its tracks. But another federal policy is making even more trouble at the border—this time with America’s long-standing trading partners. Nascent trade wars with China, Europe, Canada, and Mexico—even if they don’t last—have become yet another comorbidity for our aging expansion. U.S. companies that do most of their business abroad grew faster and were more profitable than the rest last year, just as in previous years, FactSet reports. Waging a trade war thus disproportionately hurts America’s strongest engines of economic growth.

By the numbers, the trade-related skirmishes so far are insignificant in America’s $20 trillion-a-year economy. Even the tit-for-tat imposition of tariffs on $34 billion of trade by the U.S. and China in early July will not, by itself, noticeably reduce GDP. Yet the effects could easily mushroom, in two intertwined ways.

First, even the biggest wars typically start with minor battles that spark an unstoppable cycle of escalation. In the current trade war, that appears to be underway. Hostilities with China began in March when President Trump imposed tariffs on aluminum and steel imports, only about $2.7 billion of which come from Chinese producers. China responded with new tariffs on an equivalent amount of U.S. exports. The next day, Trump proposed tariffs on $50 billion of Chinese imports; China proposed retaliatory tariffs the day after that. On and on this went until the U.S. has now threatened tariffs on nearly all of America’s $500 billion of Chinese imports, and China has vowed to retaliate “at any cost.”

As the stakes get higher, the rhetoric gets more bellicose. China is “threatening United States companies, workers, and farmers who have done nothing wrong,” Trump said in June. China’s Trade Ministry called the speech “blackmail.” When the latest tariffs took effect in July, a Chinese Communist Party newspaper warned that “Washington has obviously underestimated the giant force that the world’s opposition and China’s retaliation can produce.”

As public threats become more explicit, backing down from them appears ever less likely. That’s how a piddling spat between the world’s two largest economies, jointly the foundation of global economic growth, could become a historic trade war.

But the second way the current dispute could damage the U.S. economy doesn’t even require that hostilities get worse. It requires only that people become less certain about where all this is headed. That effect—an “uncertainty shock,” as Bank of America Merrill Lynch economist Michelle Meyer called it in a recent note—is happening already, and it worries the Fed. “Contacts in some Districts indicated that plans for capital spending had been scaled back or postponed as a result of uncertainty over trade policy,” the Federal Open Market Committee reported from its June meeting, adding that “most participants” were concerned such uncertainty could depress “business sentiment”—confidence, that is—“and investment spending.”

Don’t expect much more clarity anytime soon. No one can predict where a large-scale trade war would lead. The last one occurred in the 1930s, when today’s intricate, light-speed global supply chains would have been nearly unfathomable. Which leaves business decisionmakers only to wonder how all this shakes out.

Uncertainty prompts paralysis—and that’s no good for growth.

### Alt Causes to Enrollment

#### Structural Factors other than immigration are causing declines in international enrollment

KHANNA ’18 (Guarav; assistant professor of economics at University of California San Diego’s School of Global Policy and Strategy, “Fewer international students could become a problem for US universities,” The Hill, 7/28, http://thehill.com/opinion/education/399311-fewer-international-students-could-become-a-problem-for-us-universities)ww

In the past few years, there has been a slight drop in new international enrollment. What contributes to this slowdown? Some commentators blame the recent socio-political climate in the United States, and possible difficulties with obtaining work visas after graduating. This may well be an important factor: as we found in earlier research, the prospect of joining the U.S. job market makes U.S. universities attractive to many. In the same light, impending future difficulties to get an H-1B visa may discourage many from applying.

Yet, the slowdown in enrollment from abroad started even before the 2012 U.S. election. Saudi Arabia played a major role in this slowdown because its government cut funding (in response to falling oil prices) for the lucrative King Abdullah Scholarship. But growth from China, while still strong, has slowed as well. Recent growth in China-based, high-quality universities at more affordable rates, a slowdown of income growth and currency appreciation, and a plateauing of school-leaving populations implies that this demand from abroad was never meant to last forever.

These recent developments, then, raise questions on how public universities will adjust to such flagging demand from abroad. While state budgets have somewhat stabilized, the secular decline in appropriations may continue, as it has since the 1970s. Unless states step to up to adequately fund public universities, these institutions will have to turn to other innovative methods of raising revenue, or resort to the uncomfortable choices of raising tuition and cutting expenditures.

### Circulation Good

#### Returnees still benefit the US

HAN et al ’15 (Xueying; Center for Nanotechnology in Society – University of California-Santa Barbara, “Will They Stay or Will They Go? International Graduate Students and Their Decisions to Stay or Leave the U.S. upon Graduation,” 3/11, http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0118183)ww

While the U.S. clearly pays a price when the best post-graduates repatriate to their home countries, the loss of talent is not necessarily total. Students who return home often become part of a global innovation network, continuing to work with their colleagues in the U.S. (and elsewhere), encouraging their own students to attend school in the U.S., and contributing to global innovation in which the U.S. plays the major role and reaps many benefits. As Luo and Wang (2002) demonstrate, the migration of talent can create networks of expatriates and returnees who work together to conduct research or build businesses in both countries.

### A/T: Basic Research Key

#### Reliance on university research doesn’t guarantee economic growth – the benefits only occur around centers of production, which aren’t necessarily in the U.S.

ADLER ’18 (David; economics researcher and writer whose work has appeared in City Journal, the Financial Times, and other publications, “The American Way of Innovation and Its Deficiencies,” American Affairs, Summer, v. 2, n. 2, https://americanaffairsjournal.org/2018/05/the-american-way-of-innovation-and-its-deficiencies/)ww

The United States has a second source of innovation, and that is government-funded basic research, mostly conducted at universities and often funded through darpa (Defense Advanced Research Projects Agency). Here, the United States has been more successful. Basic research has been the cornerstone of America’s ability to achieve scientific advances that expand the frontier of knowledge, build America’s defense capacities, launch new industries, and lead to the creation of entirely new fields.

But there are drawbacks to relying upon this system as the sole source of innovation: it largely excludes the late-stage, applied research needed for the mass deployment of new technology. Although universities may commercialize some of their research through licenses, they can play only a limited role, or more likely no role at all, when it comes to production.

Universities and defense agencies are not a perfect substitute for the vanished corporate system, which combined both advanced and applied research. Universities may create new ideas and technologies, but someone else has to apply those ideas and manufacture the products—and that increasingly takes place abroad. And this portends dire consequences for American jobs and the future dynamism of the U.S. economy.

Economic geographers Jennifer Clark and the late Susan Christopherson found that commercial spin-offs of technological innovations stemming from universities were unlikely to lead to large scale local job creation, at least without a skilled local labor force or venture capital system. Only a handful of U.S. regions, such as the San Francisco Bay Area, have the capabilities to absorb university innovations and build sizable industries around them.

Christopherson and Clark write that the “research on the commercialization of patents produced in universities shows that while universities in the periphery may be producing innovations, production is likely to migrate to the coastal centers.” They con­clude, “If we examine the potential economic contributions of the university in regional economic development . . . we see that universities can play only a limited role.”14

Entrepreneurs who commercialize university (and government-funded) research to create new products can profit handsomely. But the bulk of the jobs, both blue collar and middle class, go to where the product is manufactured, which might be in China. All that is left in the United States, aside from the financial and entrepreneurial overclass, is a servant class of private chefs and personal trainers; the middle-class jobs are located elsewhere.

The resulting inequality that stems from this winner-take-all approach to innovation is not politically sustainable. And since consumer spending accounts for the vast majority of U.S. economic activity, this lack of middle-class job growth is not economically sustainable either.

### Funding Alt Cause

#### Declines in funding for scientific research are an alternative cause.

CAMPBELL ’18 (Matthew; Bloomberg, “If Trump Gets His Way, America Won’t Be No. 1 in Science Much Longer,” 1/24, https://www.bloomberg.com/news/articles/2018-01-25/in-science-u-s-won-t-be-first-for-long-if-trump-gets-his-way)

It’s hard to exaggerate the scale of America’s historic edge in science. Four of the top five institutions in the QS ranking of world universities, one of the most prominent indexes of global higher education providers, are American, led by MIT and Stanford. Of the five most valuable technology companies in the world, four are based on the U.S. west coast. Apart from China, which has nurtured the growth of tech giants like AliBaba Group Holding Ltd. and Tencent Holdings Ltd. by largely closing off its markets to outside firms, no country has been able to create tech companies that can compete with the scale and pace of innovation afforded by the U.S. ecosystem.

“Why is the U.S. the world leader today?” asks Jeremy Farrar, director of the Wellcome Trust, which funds global scientific research. “Because it has had, independent of political persuasion, sustained investment in the basic science and translational science base for 100 years.”

That dominance may be more fragile than it appears. A huge proportion of so-called basic research, which has no immediate industrial applications but can lead to transformative discoveries down the road, depends on billions of dollars in annual federal-government funding.

The Trump administration’s initial 2018 budget proposal envisioned a cut of almost $5.8 billion in support for the National Institutes of Health, representing 18 percent of the grant-making agency’s budget. Trump also proposed slashing another $841 million from the budget of the National Science Foundation. Lawmakers have so far rejected deep cuts to science programs in their draft budget legislation.

Global Competition

Yet even before the Trump-era, science funding was failing to keep pace with economic growth. Excluding defense, U.S. federal funding for research and development declined from 0.6 percent of GDP in the 1970s to less than 0.4 percent today, according to the American Association for the Advancement of Science.

### A/T: Heg Good

#### The international order is durable and independent of US leadership

IKENBERY ’08 (John; professor of Politics and International Affairs at Princeton University, “The Rise of China and the Future of the West Can the Liberal System Survive?” Foreign Affairs, Jan/Feb)ww

Second is the coalition-based character of its leadership. Past orders have tended to be dominated by one state. The stakeholders of the current Western order include a coalition of powers arrayed around the United States -- an important distinction. These leading states, most of them advanced liberal democracies, do not always agree, but they are engaged in a continuous process of give-and-take over economics, politics, and security. Power transitions are typically seen as being played out between two countries, a rising state and a declining hegemon, and the order falls as soon as the power balance shifts. But in the current order, the larger aggregation of democratic capitalist states -- and the resulting accumulation of geopolitical power -- shifts the balance in the order's favor. Third, the postwar Western order has an unusually dense, encompassing, and broadly endorsed system of rules and institutions. Whatever its shortcomings, it is more open and rule-based than any previous order. State sovereignty and the rule of law are not just norms enshrined in the United Nations Charter. They are part of the deep operating logic of the order. To be sure, these norms are evolving, and the United States itself has historically been ambivalent about binding itself to international law and institutions -- and at no time more so than today. But the overall system is dense with multilateral rules and institutions -- global and regional, economic, political, and security-related. These represent one of the great breakthroughs of the postwar era. They have laid the basis for unprecedented levels of cooperation and shared authority over the global system. The incentives these features create for China to integrate into the liberal international order are reinforced by the changed nature of the international economic environment -- especially the new interdependence driven by technology. The most farsighted Chinese leaders understand that globalization has changed the game and that China accordingly needs strong, prosperous partners around the world. From the United States' perspective, a healthy Chinese economy is vital to the United States and the rest of the world. Technology and the global economic revolution have created a logic of economic relations that is different from the past -- making the political and institutional logic of the current order all the more powerful. ACCOMMODATING THE RISE The most important benefit of these features today is that they give the Western order a remarkable capacity to accommodate rising powers. New entrants into the system have ways of gaining status and authority and opportunities to play a role in governing the order. The fact that the United States, China, and other great powers have nuclear weapons also limits the ability of a rising power to overturn the existing order. In the age of nuclear deterrence, great-power war is, thankfully, no longer a mechanism of historical change. War-driven change has been abolished as a historical process.

#### There is no statistical support for the notion that American leadership is necessary or beneficial to global order

FETTWEIS ’17 (Christopher J.; Associate Professor of Political Science at Tulane University, “Unipolarity, Hegemony, and the New Peace,” Security Studies, v. 26, n. 3)ww

To review, assuming for a moment that US leaders are subject to the same forces that affect every human being, they overestimate the amount of control they have over other actors, and are not as important to decisions made elsewhere as they believe themselves to be. And they probably perceive their own benevolence to be much greater than do others. These common phenomena all influence US beliefs in the same direction, and may well increase the apparent explanatory power of hegemony beyond what the facts would otherwise support. The United States is probably not as central to the New Peace as either liberals or neoconservatives believe.

In the end, what can be said about the relationship between US power and international stability? Probably not much that will satisfy partisans, and the pacifying virtue of US hegemony will remain largely an article of faith in some circles in the policy world. Like most beliefs, it will remain immune to alteration by logic and evidence. Beliefs rarely change, so debates rarely end.

For those not yet fully converted, however, perhaps it will be significant that corroborating evidence for the relationship is extremely hard to identify. If indeed hegemonic stability exists, it does so without leaving much of a trace. Neither Washington’s spending, nor its interventions, nor its overall grand strategy seem to matter much to the levels of armed conflict around the world (apart from those wars that Uncle Sam starts). The empirical record does not contain strong reasons to believe that unipolarity and the New Peace are related, and insights from political psychology suggest that hegemonic stability is a belief particularly susceptible to misperception. US leaders probably exaggerate the degree to which their power matters, and could retrench without much risk to themselves or the world around them. Researchers will need to look elsewhere to explain why the world has entered into the most peaceful period in its history.

The good news from this is that the New Peace will probably persist for quite some time, no matter how dominant the United States is, or what policies President Trump follows, or how much resentment its actions cause in the periphery. The people of the twenty-first century are likely to be much safer and more secure than any of their predecessors, even if many of them do not always believe it.

#### There is no reason to fear the decline of U.S. hegemony

FETTWEIS ’17 (Christopher J.; Associate Professor of Political Science at Tulane University, “Unipolarity, Hegemony, and the New Peace,” Security Studies, v. 26, n. 3)ww

The New Peace does not appear to be the result of unipolarity or US hegemony. While that conclusion might not sit well with many US analysts, the news is not all bad, for if the current generation of declinists is right and unipolarity’s days are numbered, the odds are good that the world will not descend into the atavistic chaos that haunts the neoconservative imagination. The United States can adjust its grand strategy without fear in the Trump years, perhaps even letting the “unipolar moment” expire, because the New Peace may well be unrelated to its dominance.6

### A/T: Decline = War

#### Economic decline doesn’t lead to war

CLARY ’15 (Christopher; Ph.D. in Political Science from MIT, Postdoctoral Fellow, Watson Institute for International Studies, Brown University, “Economic Stress and International Cooperation: Evidence from International Rivalries,” 4/22, <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2597712>)ww

Do economic downturns generate pressure for diversionary conflict? Or might downturns encourage austerity and economizing behavior in foreign policy? This paper provides new evidence that economic stress is associated with conciliatory policies between strategic rivals. For states that view each other as military threats, the biggest step possible toward bilateral cooperation is to terminate the rivalry by taking political steps to manage the competition. Drawing on data from 109 distinct rival dyads since 1950, 67 of which terminated, the evidence suggests rivalries were approximately twice as likely to terminate during economic downturns than they were during periods of economic normalcy. This is true controlling for all of the main alternative explanations for peaceful relations between foes (democratic status, nuclear weapons possession, capability imbalance, common enemies, and international systemic changes), as well as many other possible confounding variables. This research questions existing theories claiming that economic downturns are associated with diversionary war, and instead argues that in certain circumstances peace may result from economic troubles. Defining and Measuring Rivalry and Rivalry Termination I define a rivalry as the perception by national elites of two states that the other state possesses conflicting interests and presents a military threat of sufficient severity that future military conflict is likely. Rivalry termination is the transition from a state of rivalry to one where conflicts of interest are not viewed as being so severe as to provoke interstate conflict and/or where a mutual recognition of the imbalance in military capabilities makes conflict-causing bargaining failures unlikely. In other words, rivalries terminate when the elites assess that the risks of military conflict between rivals has been reduced dramatically. This definition draws on a growing quantitative literature most closely associated with the research programs of William Thompson, J. Joseph Hewitt, and James P. Klein, Gary Goertz, and Paul F. Diehl.1 My definition conforms to that of William Thompson. In work with Karen Rasler, they define rivalries as situations in which “[b]oth actors view each other as a significant political-military threat and, therefore, an enemy.”2 In other work, Thompson writing with Michael Colaresi, explains further: The presumption is that decisionmakers explicitly identify who they think are their foreign enemies. They orient their military preparations and foreign policies toward meeting their threats. They assure their constituents that they will not let their adversaries take advantage. Usually, these activities are done in public. Hence, we should be able to follow the explicit cues in decisionmaker utterances and writings, as well as in the descriptive political histories written about the foreign policies of specific countries.3 Drawing from available records and histories, Thompson and David Dreyer have generated a universe of strategic rivalries from 1494 to 2010 that serves as the basis for this project’s empirical analysis.4 This project measures rivalry termination as occurring on the last year that Thompson and Dreyer record the existence of a rivalry.5 Why Might Economic Crisis Cause Rivalry Termination? Economic crises lead to conciliatory behavior through five primary channels. (1) Economic crises lead to austerity pressures, which in turn incent leaders to search for ways to cut defense expenditures. (2) Economic crises also encourage strategic reassessment, so that leaders can argue to their peers and their publics that defense spending can be arrested without endangering the state. This can lead to threat deflation, where elites attempt to downplay the seriousness of the threat posed by a former rival. (3) If a state faces multiple threats, economic crises provoke elites to consider threat prioritization, a process that is postponed during periods of economic normalcy. (4) Economic crises increase the political and economic benefit from international economic cooperation. Leaders seek foreign aid, enhanced trade, and increased investment from abroad during periods of economic trouble. This search is made easier if tensions are reduced with historic rivals. (5) Finally, during crises, elites are more prone to select leaders who are perceived as capable of resolving economic difficulties, permitting the emergence of leaders who hold heterodox foreign policy views. Collectively, these mechanisms make it much more likely that a leader will prefer conciliatory policies compared to during periods of economic normalcy. This section reviews this causal logic in greater detail, while also providing historical examples that these mechanisms recur in practice.

## Internal Brain Drain Turn

### 1NC

#### Turn – The Plan creates an internal brain drain that discourages equally capable native students from entering research fields. The result is a net decrease in innovation.

MATLOFF ’13 (Dr. Norman; Professor of Computer Science – University of California-Davis, His commentary and analyses of high-skilled immigration issues have appeared in various academic journals and media outlets, and he has written extensively on the subject. “Are foreign students the ‘best and brightest’? Data and implications for immigration policy,” 2/28, https://www.epi.org/publication/bp356-foreign-students-best-brightest-immigration-policy/)ww

The famous David Halberstam phrase, “the best and the brightest,” has been used in many contexts, but perhaps none more than to describe the foreign-national engineers and programmers we are told the United States desperately needs in order to compete in the global economy. The debate involves the H-1B visa (which allows U.S. employers to temporarily hire foreign workers possessing at least a bachelor’s degree), employer-sponsored green cards (which grant permanent residency status), and other related facets of U.S. immigration policy. Recently the discussion has centered on proposals to grant automatic green cards to international students who earn advanced STEM (science, technology, engineering, and math) degrees at U.S. universities.

This latter group will be the major focus of this report, which analyzes data on former foreign students who are now working in the United States. Some are still on temporary work visas, while others have been granted U.S. permanent resident or naturalized citizen status.

The proponents of an expansive policy for foreign tech workers contend that H-1B workers, especially those hired from American campuses, are often “the best and the brightest” and thus are key to the industry’s ability to compete on the world stage. Consider, for instance (emphasis added):

“…[restrictive U.S. immigration policy is] driving away the world’s best and brightest”—Microsoft Chairman Bill Gates (Barlas 2008).

“We should not [send our] bright and talented international students…to work for our competitors abroad upon graduation”—National Association of Foreign Student Advisers (NAFSA 2007).

“…We should be stapling a green card to the diploma of any foreign student who earns an advanced degree at any U.S. university….The world’s best brains are on sale. Let’s buy more!”—New York Times columnist Tom Friedman (Friedman 2009).

“I personally don’t think you can have too many geniuses in America”—Rep. Zoe Lofgren, 1999, speaking in support of automatic green cards (McCullagh 1999).

Though the United States should indeed welcome the immigration of “the world’s best brains,” are the foreign students typically of that caliber? The tech industry has put forth little to support such assertions. It has pointed to some famous immigrant success stories in the field but, in most cases, the people cited, such as Google cofounder Sergey Brin, never held foreign-student (F-1) or work (H-1B) visas (Brin immigrated with his parents to the United States at age 6). And more importantly, neither the industry nor any other participant in this national debate has offered any empirical analysis documenting that the visa holders are of exceptionally high talent.

This report aims to remedy this lack of data. With an eye toward the green card proposals, it will focus mainly on those who first entered the United States as foreign students in computer science or electrical engineering (CS/EE)—the two fields that make up the bulk of the H-1Bs.1 It will also look at foreign tech workers in general.

The study finds that the tech industry’s “genius” claims for these groups are not supported by the available data. Compared to Americans of the same education and age, the former foreign students turn out to be weaker than, or at most comparable to, the Americans in terms of salary, patent applications, Ph.D. dissertation awards, and quality of the doctoral program in which they studied.

For some readers of this report, perhaps the most surprising result here will concern work in research and development (R&D). The industry has emphasized that it needs foreign workers in order to keep its innovative edge over other countries, yet the data show that the former foreign students are significantly less likely to work in R&D than the Americans.

In other words, H-1B and related programs are not raising U.S. levels of talent and innovation in the tech fields, and are in some ways reducing them.

These results are for the industry as a whole. There is a perception, however, among some in Congress and by some academics that Indian and Indian-American outsourcing firms operating in the United States abuse the H-1B visa, while mainstream American firms use the visa to hire outstanding talent (Cha 2010).2 Yet the analysis here effectively excludes the outsourcing firms, so the report’s findings of a lack of a best/brightest trend apply to the mainstream firms.

Thus, the first (and main) part of this report will demonstrate that Rep. Lofgren’s “can’t have enough geniuses” remark was unwarranted hyperbole. But what about a slightly modified version of Lofgren’s statement: Isn’t it good to have as many engineers as possible, even if they aren’t geniuses? The answer is no, because the H-1B and green card programs have been causing an internal brain drain of tech talent in the United States. As will be shown here, these programs squeeze out U.S. citizens and permanent residents from the field and make the field unattractive to this country’s most talented young domestic students. The second part of this report will cover this urgent issue.

Given that the foreign students are not producing a net gain in talent level, the internal brain drain suggests that the foreign-tech-worker programs should be reduced in scope, not expanded. Proposals for reform are presented in the third and final part of this report.

### Link Extensions

#### Immigrants crowd out and create a disincentive for native enrollment in STEM fields

ORRENIUS and ZAVODNY ’13 (Pia M.; Federal Reserve Bank of Dallas AND Madeline; Agnes Scott College, “Does Immigration Affect whether U.S. Natives Major in a STEM Field?” January, http://conference.iza.org/conference\_files/AMM\_2013/zavodny\_m2692.pdf)ww

Turning to the choice of major, there are several reasons why immigration might reduce the likelihood that college graduates majored in a STEM field. First, immigrants may compete with natives in the same age cohort for educational resources. When natives attend school with more immigrants, natives’ academic preparedness in math and science may decline, either absolutely or relative to immigrants, resulting in natives being less willing or able to major in STEM fields. For example, attending K-12 school with more immigrants who need intensive English education may reduce the quantity or quality of math and science preparation that natives receive, reducing the likelihood they ultimately major in those fields in college. Levine and Zimmerman (1995) show that high school preparation in math and, to a lesser extent, in science affects the likelihood of majoring in a technical field in college. Alternatively, attending K-12 school or college with more immigrants may increase the competition for high grades in math and science classes. Barnett, Sonnert, and Sadler (2012) report that immigrants earn higher grades, on average, than U.S. natives in college calculus classes, which are crucial gateway courses for STEM majors. Natives who move down in the grade distribution may be less likely to major in STEM fields.

Even if the distributions of immigrants and natives by ability or achievement are the same, immigration may reduce natives’ academic preparedness if educational resources are relatively fixed. At the K-12 level, dividing fixed resources across more students may reduce the average student’s preparedness and ultimately reduce the likelihood of majoring in a STEM discipline. At the college level, immigrants may crowd natives out of STEM majors if the number of slots available is inelastic in the short run.6

For example, natives may have more difficulty getting into necessary introductory math and science classes their first year of college as the number of foreign-born college students increases. Natives may become more likely to major in other disciplines as a result. Bettinger (2010) reports that students who take more STEM classes their first semester of college are more likely to persist in STEM majors, although the direction of causality is unclear.

Second, immigration may reduce the relative returns to STEM occupations, reducing the incentive for natives to major in those disciplines. Expected returns affect students’ choice of college major (e.g., Arcidiacono, Hotz, and Kang 2012). Inflows of highly skilled immigrant workers trained in STEM fields may reduce earnings or employment opportunities in STEM occupations. Students also may perceive higher immigrant shares in their own age cohort as increasing the competition for STEM jobs in the future, reducing their willingness to major in STEM disciplines. The literature on the effect of immigration on natives’ earnings and employment is hotly divided, with some studies finding evidence of substantial negative effects among college graduates (e.g., Borjas 2003) and other studies finding little evidence of adverse effects (e.g., Ottaviano and Peri 2011).

#### Immigration creates a negative perception that drives away native students

ORRENIUS and ZAVODNY ’13 (Pia M.; Federal Reserve Bank of Dallas AND Madeline; Agnes Scott College, “Does Immigration Affect whether U.S. Natives Major in a STEM Field?” January, http://conference.iza.org/conference\_files/AMM\_2013/zavodny\_m2692.pdf)ww

The high concentration of immigrants in STEM fields may affect natives’ willingness to major in STEM fields even if labor market outcomes, educational opportunities, and natives’ academic preparedness do not change as a result of immigration. Natives may perceive STEM fields as primarily filled by immigrants and therefore be less inclined to major in them. Natives may have difficulty finding role models “like them” in STEM fields as the proportion foreign born increases in those fields.7 Almost 29 percent of college graduates living in the U.S. who majored in a STEM field are foreign born, versus 13 percent of non-STEM majors.8

#### Foreign students crowd out domestic STEM majors

ORRENIUS and ZAVODNY ’13 (Pia M.; Federal Reserve Bank of Dallas AND Madeline; Agnes Scott College, “Does Immigration Affect whether U.S. Natives Major in a STEM Field?” January, http://conference.iza.org/conference\_files/AMM\_2013/zavodny\_m2692.pdf)ww

This study examined whether higher immigration reduces the probability that natives who graduated from college did so with a STEM major. The results suggest that non-Hispanic whites are less likely to major in a STEM field the higher the immigrant share in their age cohort and in the labor force, although the estimated effects are small. This negative result is driven by data from the year 2000, the culmination of a period of strong economic growth, changes in immigration policy, and an Internet boom that led to a surge in inflows of highly skilled immigrants. Higher immigrant shares also appear to discourage Asian women from STEM majors, but they are positively related to the probability that Hispanics major in a STEM field. The immigrant share of college students appears to have the most adverse effect on whether natives major in STEM, suggesting that foreign students crowd out some natives from STEM majors.

#### Foreign Students crowd out domestic students in high demand majors

BOUND et al ’16 (John; Professor of Economics – University of Michigan, Research Professor – Population Studies Center, Faculty Associate – Survey Research Center, “A Passage to America: University Funding and International Students,” March, https://www.psc.isr.umich.edu/pubs/pdf/rr16-859.pdf)ww

The dramatic increase in the number foreign undergraduates on U.S. campuses over the past decade raises questions about the impact of this influx. Beyond impacts on the number of instate students, and the concentration of foreign students in certain majors such as business, engineering, and economics, it is possible that some universities may experience domestic student crowd-out or reductions in per-student instructional resources in these majors. Also, some evidence suggests that the rapid expansion in the number of foreign students has generated institution-level administrative challenges, while others have questioned how well foreign students are integrated in U.S. universities, even as their student bodies are more internationally diverse (Jordan, 2015; Redden, 2014; Gareis, 2012). Finally, the substantial increase in the number of foreign undergraduate students in the U.S. may impact the both domestic and home country economies. While beyond the scope of this paper, these issues are worthy of future investigation.

### A/T: Foreign Students Superior

#### Foreign students aren’t superior to their domestic counterparts.

MATLOFF ’13 (Dr. Norman; Professor of Computer Science – University of California-Davis, His commentary and analyses of high-skilled immigration issues have appeared in various academic journals and media outlets, and he has written extensively on the subject. “Are foreign students the ‘best and brightest’? Data and implications for immigration policy,” 2/28, https://www.epi.org/publication/bp356-foreign-students-best-brightest-immigration-policy/)ww

Gavin (2005) summarized the connection made by Richard Freeman of Harvard:

In his paper, Freeman argues that fewer American-born workers pursue science and engineering not only because they have more career choices than foreign workers, but also because some choices offer better wages. Average annual salaries for lawyers, for example, amounted to more than $20,000 above those for doctoral-level engineers and $50,000 more than those for life scientists with doctorates, according to Census data that Freeman cites in the paper….

U.S. companies, he added in an interview, have been quite willing to encourage a foreign supply of technical workers. This has allowed them to pay lower wages, but it has also created conditions that make science and engineering less attractive to Americans.

“You can’t say, ‘I want more visas’ and ‘I expect more Americans to enter the field,’” Freeman said. “The thing that always strikes me about these business guys is they never say, ‘We should be paying higher salaries.’”20

This internal brain drain might have been justified if the foreign workers were of higher caliber than the Americans, but, as shown earlier, this is not the case. The consistent theme in the results here has been that the immigrant engineers and programmers who first come to the United States on student visas—the group the industry lobbyists claim are most talented—are quite similar to the Americans in talent, or are of lesser talent than the Americans, contrary to the “genius” image projected by the industry.

### Innovation Impact

#### Immigrants are less innovative than domestic students

MATLOFF ’13 (Norman; Professor of Computer Science – University of California-Davis, “Immigration and the tech industry: As a labour shortage remedy, for innovation, or for cost savings?” Migration Letters, v. 10, n. 2, May, http://heather.cs.ucdavis.edu/MigLtrs.pdf)ww

Much (though by no means all) of the innovation in the tech industry comes from those working in research and development (R&D) positions. I thus investigated the proportions of US versus immigrant workers who hold such jobs. Here I used a logistic regression model for the probability of working in R&D. with the following results: [TABLE OMITTED]

The former foreign students in CS are significantly less likely to be working in R&D than the Americans. In the EE case, again, the former foreign students are less likely than comparable Americans to be working in research and development. So we find that under this measure the former foreign students are on average less innovative than the Americans.

## Espionage Turn

### 1NC

#### Turn – China uses students as spies to obtain information on technological innovation

GERTZ ’18 (Bill; Washington Times, “China Using Students as Spies,” 4/25, https://www.washingtontimes.com/news/2018/apr/25/china-uses-students-as-spies/)ww

A senior U.S. counterintelligence official recently said publicly what many officials and experts have been warning privately for years: China is using its large student population in the United States to spy.

Bill Evanina, director of the National Counterintelligence and Security Center, a DNI agency, said recently that China poses a broad-ranging foreign intelligence threat that includes the use of academics, students, cyberespionage and human agents to steal secrets from the government and private sectors.

“I look at the China threat from a counterintelligence perspective as a whole-of-government threat by China against us,” Mr. Evanina told a conference last week at The Aspen Institute.

“We allow 350,000 or so Chinese students here every year,” he said. “That’s a lot. We have a very liberal visa policy for them. Ninety-nine point nine percent of those students are here legitimately and doing great research and helping the global economy. But it is a tool that is used by the Chinese government to facilitate nefarious activity here in the U.S.”

Mr. Evanina said the Trump administration is more engaged in counterintelligence than the Obama administration, based on the fact that many current leaders had more experience in the private sector. A particular concern driving greater counterespionage against China is Beijing’s spending of $80 billion annually on investment in the United States, he said.

“I believe our administration now, due to the makeup, is more interested in that number and how that impacts across the U.S. country than the previous administration,” Mr. Evanina said. “If the Chinese government is buying up key aspects of our critical infrastructure and our technology base, is that a long-term national security threat for our country? I believe it is.”

Michelle Van Cleave, a former counterintelligence official, testified to a House subcommittee earlier this month that China poses the most significant threat to steal advanced American technology from universities and other research centers.

“It’s not just that there are a lot of Chinese nationals working in American companies or laboratories, or studying or teaching at American universities, picking up whatever happens to come their way,” Ms. Van Cleave said. “No. As the Defense Department has reported, China has a government-directed, multifaceted secret program whose primary task is technology acquisition.”

Michael Wessel, chairman of the U.S.-China Economic and Security Review Commission, also told Congress that China in 2006 launched two programs seeking to recruit up to 4,000 foreign specialists, mainly among ethnic Chinese, in such programs as “Project 111” and “Thousand Talents Program.”

Mr. Wessel said about 20 percent of the staff at the Berkeley Artificial Intelligence Research (BAIR) Lab at the University of California Berkeley, which conducts research in advanced machine learning, are Chinese nationals.

At the University of Maryland’s Bing Research Group, 30 of the 38 postdoctoral researchers and graduate students are from China, Mr. Wessel testified.

### Link Extension

#### Universities are at risk for foreign espionage

SWANSON and BRADSHER ’18 (Ana and Keith; New York Times, “White House Considers Restricting Chinese Researchers Over Espionage Fears,” 4/30, https://www.nytimes.com/2018/04/30/us/politics/trump-china-researchers-espionage.html)ww

In America, research institutes look particularly vulnerable to espionage. According to Defense Department statistics, nearly a quarter of all foreign efforts to obtain sensitive or classified information in 2014 were routed through academic institutions. At a congressional hearing in April, Michelle Van Cleave, a former national counterintelligence executive, said the freedom and openness of the United States made the country a “spy’s paradise.” Chinese and Russian agents both come to the United States with “detailed shopping lists,” she added.

#### China targets every member of the diaspora for recruitment

NEWMAN ’11 (Alex; Freelance Journalist, The Diplomat, “China's Growing Spy Threat,” 9/19, https://thediplomat.com/2011/09/chinas-growing-spy-threat/?allpages=yes)ww

Beijing fiercely denies it. Much of the world ignores it. But according to analysts and officials, the communist-controlled People’s Republic of China operates the single largest intelligence-gathering apparatus in the world—and its growing appetite for secrets has apparently become insatiable.

From economic and military espionage to keeping tabs on exiled dissidents, China’s global spying operations are rapidly expanding. And, therefore, so is the threat. Some analysts even argue the regime—which is also gobbling up such key natural resources as farmland, energy, and minerals—has an eye on dominating the world.

Estimates on the number of spies and agents employed by the communist state vary widely. According to public statements by French author and investigative journalist Roger Faligot, who has written several books about the regime’s security services, there are around two million Chinese working directly or indirectly for China’s intelligence apparatus.

Other analysts say it would be impossible to count the exact number. ‘I doubt they know themselves,’ says Richard Fisher, a senior fellow on Asian military affairs at the Washington-based International Assessment and Strategy Center. Regardless, the number is undoubtedly extraordinary. ‘China can rightly claim to have the world’s largest, most amorphous, but also most active intelligence sector,’ he says.

That’s partly because it operates very differently from most. ‘When you consider that China’s intelligence community views any foreign-deployed Chinese citizen, any Chinese delegation, all Chinese criminal networks, and all overseas Chinese with any tangible affinity or connection to the Motherland as a target for recruitment, then you have to find a different way to measure,’ Fisher explains. ‘This has to start with the consideration that any Chinese, especially those from China, from student to CEO, are potential active intelligence assets.’

### A/T: Status Quo Solves

#### Loopholes make current safeguards ineffective

SWANSON and BRADSHER ’18 (Ana and Keith; New York Times, “White House Considers Restricting Chinese Researchers Over Espionage Fears,” 4/30, https://www.nytimes.com/2018/04/30/us/politics/trump-china-researchers-espionage.html)ww

Fueling the push are instances like the one involving Ruopeng Liu, a Chinese citizen and a promising student at Duke who was helping to develop a cloak that shields objects from a broad spectrum of wave frequencies. The professor leading the Pentagon-funded lab, David R. Smith, became suspicious of Mr. Liu, who seemed intent on collaborating with old colleagues in China, and even invited them to tour the lab and photograph Duke’s equipment.

It became clear to Mr. Smith that Mr. Liu was trying to share the cutting-edge technology he was studying in the United States with colleagues in China. The institute he founded on his return to China eventually received millions of dollars of investment, registered thousands of patents and even played host to President Xi Jinping of China.

Mr. Liu did not respond to interview requests, but in past interviews, he has maintained that he did nothing wrong, beyond taking advantage of an open and collaborative university atmosphere. Like many projects in the United States, most of Mr. Smith’s work at Duke was early-stage research that was not classified or categorized as a deemed export.

Daniel Golden, who tells Mr. Liu’s story in his book, “Spy Schools,” said Mr. Liu exploited a gray area that allows a large amount of sensitive, taxpayer-funded technology to flow to foreign governments. “Globalization has transformed American universities into a front line for espionage,” Mr. Golden said.

### Innovation Impact

#### Chinese espionage threatens U.S. innovation and technical leadership

WU ’18 (Annie; Epoch Times, “White House Limits on Chinese Visas Highlights Academic Espionage Problem,” 6/7, https://www.theepochtimes.com/white-house-limits-on-chinese-visas-highlights-academic-espionage-problem\_2553263.html)ww

In recent years, U.S. federal authorities have prosecuted several Chinese nationals working in American academia who stole proprietary technology on behalf of entities in China.

Beginning June 11, the U.S. State Department will begin implementing these limits, including restricting Chinese citizens studying in certain fields—such as robotics, aviation, and high-tech manufacturing—to one-year visas.

Those are fields the Chinese regime has said are high-priority goals for its manufacturing sector, outlined in its economic 10-year plan, Made in China 2025. This industrial policy was also the target of the recent Office of the U.S. Trade Representative’s (USTR) investigation into China’s intellectual property theft practices, commissioned by President Donald Trump. It found that China strategically directs private and state-owned firms to acquire foreign tech companies in order to obtain their technological innovations; eventually, China wants to dominate global tech supply chains and displace foreign competitors.

To this end, some Chinese nationals working at U.S. universities have stolen technology beneficial to the Chinese regime.

#### Chinese Espionage allows for the theft of economic and military secrets

NEWMAN ’11 (Alex; Freelance Journalist, The Diplomat, “China's Growing Spy Threat,” 9/19, https://thediplomat.com/2011/09/chinas-growing-spy-threat/?allpages=yes)ww

The theft of trade secrets, technology, and corporate information is another one of China’s specialties. ‘When it comes to economic espionage, China is universally recognized as at the top,’ says Juneau-Katsuya, who now serves as the CEO of security consulting firm The Northgate Group. ‘What we know is that, by far, they are at the top when it comes to stealing information.’

Oftentimes the line between military and economic espionage is blurry. The case of engineer Dongfan ‘Greg’ Chung, sentenced last year, is just one example among many. Chung was caught passing sensitive US aerospace and rocket secrets to China that he stole while working for defence contractors Boeing and Rockwell International.

In other cases, the foreign technology stolen by Chinese spies is used to further oppress the population. A revealing lawsuit filed by US software maker Cybersitter, seeking more than $2 billion in damages, accused China and other conspirators of stealing its proprietary filtering code. The software was then apparently used to help censor the web in China.

‘They have a multitude of goals all at once: To catch up on the difference in technology, to gain influence around the world, to know more about where the competition is, and definitely to not have to pay for research and development,’ says Juneau-Katsuya. The R&D element is key.

Often, the motivation for stealing trade secrets is purely economic. In addition to saving unfathomable amounts of time and capital, using stolen information crucial to a company’s survival can actually lead to shutting down China’s foreign competition.

So, partly because the return on investment from spying is so much greater than from R&D, experts say the budgets of Chinese intelligence agencies have soared in recent years. That trend is expected to continue indefinitely.

But while it may be cost effective for China, the price tag paid by others is massive. Precise figures are, of course, impossible to calculate. But in 1995, when Juneau-Katsuya was at CSIS, he tried to get an estimate: It was somewhere in the neighbourhood of $10 billion to $12 billion per year. Since then the problem has only grown.

In Germany, the cost is high, too, Berthold Stoppelkamp of the German Association for Security in Industry and Commerce (ASW) told the press in 2009. He estimated the damages from economic espionage—primarily Russian and Chinese—at around €20 billion every year. But it could be closer to €50 billion, he noted.

An estimate on the cost of economic espionage to the US economy was offered by FBI Director Robert Mueller in 2003: over $250 billion per year. And counterintelligence officials with the Bureau and other experts agree that China is by far the most serious threat.

‘This espionage saps US companies of their industrial lead in the new technologies and materials,’ notes Wortzel. ‘And often the Chinese incorporate what they have learned into new weapon systems that can be used against the US, its allies, and friends.’

### A/T: This is Racist

#### The Chinese Espionage Threat is real – Empirics, Experts and Defectors Confirm – If anything, it’s underestimated

NEWMAN ’11 (Alex; Freelance Journalist, The Diplomat, “China's Growing Spy Threat,” 9/19, https://thediplomat.com/2011/09/chinas-growing-spy-threat/?allpages=yes)ww

Though the evolving threats are more advanced and dangerous today than ever before, Chinese espionage is nothing new. In fact, it began centuries ago—well before the communist regime rose to power.

‘China has a history of organized intelligence-gathering operations that goes back to the 15th century—perhaps even earlier,’ says Joseph Fitsanakis, a senior editor with Intel News who teaches classes on espionage, intelligence, and covert action at King College’s Department of History and Political Science. The Chinese, however, took it to a new level.

Up until two to three decades ago, the regime’s spying was largely domestic in nature, Fitsanakis explains—primarily targeting perceived enemies and dissidents within China. But in the post-1980s era, with economic reforms and growing affluence pacifying much of the internal unrest, Chinese intelligence collection efforts began to focus more on the outside world.

Today, according to experts and former counterintelligence officials, Chinese spying represents one of the largest threats to US security. And the sheer size of the regime’s espionage apparatus ‘is proving a good match for the more advanced automated systems used by its less populous regional rivals, including Taiwan, South Korea, and Japan,’ adds Fitsanakis.

Public awareness of the hidden menace is indeed on the rise. But available evidence indicates that the danger is still underestimated—and growing quickly.

‘The Chinese are the biggest problem we have with respect to the level of effort that they’re devoting against us versus the level of attention we are giving to them,’ former US counterintelligence chief Michelle Van Cleave told CBS during an interview. Officials with the US Immigration and Customs Enforcement (ICE), meanwhile, labelled China’s ‘aggressive and wide-ranging espionage’ the ‘leading threat to US technology.’

According to former Chinese intelligence officials who defected to the West, the United States is indeed China’s main target for espionage. But as China steps up its spying around the world, it’s becoming clear that no nation, company, military, or exiled dissident is immune.

## R&D CP

### 1NC

#### The United States federal government should substantially increase funding for basic research and development and create a permanent volume-based tax credit for research and development.

#### Federal R&D funding is key to innovation

KEANE ’17 (Christopher; Vice President for Research and Professor of Physics, Washington State University, “When the federal budget funds scientific research, it’s the economy that benefits,” 7/26, https://theconversation.com/when-the-federal-budget-funds-scientific-research-its-the-economy-that-benefits-80651)ww

Emergency: You need more disposable diapers, right away. You hop into your car and trust your ride will be a safe one. Thanks to your phone’s GPS and the microchips that run it, you map out how to get to the store fast. Once there, the barcode on the package lets you accurately check out your purchase and run. Each step in this process owes a debt to the universities, researchers, students and the federal funding support that got these products and technologies rolling in the first place.

By some tallies, almost two-thirds of the technologies with the most far-reaching impact over the last 50 years stemmed from federally funded R&D at national laboratories and research universities.

The benefits from this investment have trickled down into countless aspects of our everyday lives. Even the internet that allows you to read this article online has its roots in federal dollars: The U.S. Department of Defense supported installation of the first node of a communications network called ARPANET at UCLA back in 1969.

As Congress debates the upcoming budget, its members might remember the economic impacts and improved quality of life that past congressional support of basic and applied research has created.

Federal dollars do more than fund labs

Here in the state of Washington, federally funded research at both my employer, Washington State University, and the University of Washington has led to transformational innovations. It’s helped spawn not only new products that save and improve lives, but productivity growth through new businesses and services.

Just a few examples include new kinds of composite-based lumber, smart home technology for the aged, kidney dialysis machines, airport explosive detectors and new varieties of wheat, potatoes and other agricultural crops that we enjoy at our tables and in numerous products.

All these inventions relied on federal investment combined with university research lab expertise. The important final step was commercialization. Together it all led to positive economic impacts.

We see this pattern again and again.

For instance, next time you’re on Google, remember it was founded by two Stanford University doctoral students who were funded in part by National Science Foundation Graduate Fellowships. Fast forward 20 years and here in my backyard, the company is busy building a new campus in downtown Seattle that may house 3,000-4,000 workers by 2019. Many of those hired will likely be graduates from both WSU and UW.

The fact is that thousands of companies can trace their roots to federally funded university research. And since the majority of federally funded research takes place at America’s research universities – often in concert with federal labs and private research partners – these spinoff companies are often located in their local communities all across the country.

Just one of these firms, headquartered in Broomfield, Colorado, employs over 2,800 workers and started with researchers at the University of Colorado who create instruments, data exploitation solutions and technologies for civil, commercial, aerospace and defense applications. Another in Audubon, Pennsylvania develops rapid, noninvasive “liquid biopsy” tests for cancer screening and early detection based on research from the University of Pennsylvania. And another company with 85 employees in Madison develops high-density DNA microarrays for pharmaceutical research based on research from the University of Wisconsin.

The list goes on and on.

A Washington state case study

Focusing federal research funding on research universities who enjoy strong corporate and business partners has strategic value. There is little doubt that the state of Washington’s recent economic successes, for example, comes down to a cycle of innovation and discovery that feeds additional economic growth and private-public-university relationships. Federal R&D funding is a key ingredient.

Our two public research universities have strong relationships with federal funding agencies. Together Washington State University and the University of Washington – the largest recipient of federal research funding in the nation among public universities – form the technological and intellectual pillar around which many of our state’s successful businesses are built and sustained. Both universities graduate thousands of undergraduate and graduate students who provide a constant supply of educated, trained workers. In turn, the universities and federal R&D investment benefit from the active engagement and monetary support of business leaders and professionals. Innovative ideas and knowledge percolate back and forth between federally funded research and the private sector.

A recent milestone provides an example.

Federal research dollars helped solidify a collaboration aimed at solving a big problem: the high carbon emissions from air travel, a contributor to climate change. WSU worked together with the UW and a host of other regional public research institutions, the U.S. Department of Agriculture, Alaska Airlines, Weyerhaeuser Corp., Gevo, Inc. and a large alliance of private industry to develop a renewable, affordable source of jet fuel.

Each collaborator brought unique expertise to the innovation table. USDA provided the funding and the policy commitment to the development of biofuels that spurred matching investment from private partners. Alaska Airlines brought the need to reduce its carbon emissions and its leadership in applying clean technologies to improve its environmental performance. WSU contributed decades of pertinent experience in both basic science and applied research. UW researchers demonstrated the fuel’s potential reduction in life cycle greenhouse gas emissions. And, Gevo, Inc. brought its private-sector skills and patented technology in developing bio-based alternatives to petroleum-based products. The sum of these parts created a strong, successful partnership that took a big step toward sustainable aviation.

Individual researchers with their deep expertise remain the bedrock of the research enterprise. But teams of scientists – drawn from research universities, government and the private sector – all working on multidisciplinary problems are having an increasing impact.

Recipe for amplifying R&D investment

Importantly, this phenomenon is not unique to the state of Washington. The nation’s most active innovation hubs and successful regional economies have similar factors that drive economic growth and resiliency, including:

Top-tier research institutions supported by federal, state and private funding;

A concentration of talented and diverse workers;

An ecosystem of firms, entrepreneurs and intermediaries;

Accessible pools of risk capital;

A global orientation; and

Communities that take advantage of the area’s unique assets and advantages in creating a desirable quality of life.

We see these conditions coming together around the country: in Silicon Valley, the Raleigh-Durham Research Triangle Park, Boston’s metro area and other innovation hubs in cities like Boulder, Colorado; Madison, Wisconsin; Austin, Texas; and Gainesville, Florida.

It’s this cooperative model and leveraging of federal R&D dollars that have long been this nation’s competitive advantage. With fewer federal dollars allocated to scientific R&D, the next Silicon Valley – with its potential for an economic renaissance for a new area not even on our innovation map yet – may not emerge as quickly.

#### Reforming the R&D tax credit promotes investment

MARKOVICH ’12 (Steven J.; Council on Foreign Relations, “Promoting Innovation Through R&D,” 11/2, https://www.cfr.org/backgrounder/promoting-innovation-through-rd)ww

The federal government also promotes R&D through its tax policy. An incentive known as the Research and Experimentation (R&E) tax credit encourages private sector R&D by allowing corporations to take unlimited deductions for qualified research spending. Many economists and businesses generally support the credit and its goal of raising private sector R&D investment to a more socially optimal level.

The R&E tax credit (PDF), however, has always been a temporary program--it has expired and been renewed thirteen times since 1981—and critics suggest this has weakened its effectiveness. Many experts note that businesses are reluctant to change their behavior given the historic uncertainty associated with the credit.

Today many countries have incentive programs far more generous than that of the United States. A recent study by the Washington-based Information Technology and Innovation Foundation ranked the United States twenty-seventh out of forty-two countries in R&D tax incentive generosity (assuming that the U.S. incentive is reauthorized.)

While the U.S. R&E tax credit is an incremental tax credit, other nations have used volume-based (e.g. Brazil, Canada, China, France, India) or hybrid systems (e.g. Japan, Korea) to calculate credits. Volume-based approaches reward firms for all R&D activities, so they are generous and expensive but simple to administer. The greater complexity of an incremental system like the United States’ creates costs for both companies and the tax authority—costs that could be high enough to dissuade some firms from pursuing the credit.

While tax credits allow a direct deduction from taxes payable, some nations use enhanced tax allowances (e.g. Denmark, United Kingdom) that reduce the tax liability. The value of a tax allowance depends upon the corporate tax rate. Some nations tie R&D tax credits more explicitly to jobs with a payroll withholding tax credit for R&D wages (e.g Belgium, Netherlands), while others give more generous incentives to small businesses (e.g. Canada, Japan, Korea, United Kingdom).

One innovative policy gaining traction is the "patent box." In 2013, the United Kingdom will follow the Netherlands, Belgium, Spain, and Luxembourg in adopting a patent box system that taxes firms at a lower rate on income related to domestically-developed patents.

### Solves Innovation

#### Increased funding for R&D is necessary for the US to maintain a comparative advantage

MARKOVICH ’12 (Steven J.; Council on Foreign Relations, “Promoting Innovation Through R&D,” 11/2, https://www.cfr.org/backgrounder/promoting-innovation-through-rd)ww

The federal government is the primary funder for basic research in the United States, the great majority of which is conducted at top colleges and universities (PDF). For decades, the U.S. government has spent more as a percent of GDP on directly funded R&D than other national governments. This is still true; in 2008 no other OECD nation had more (PDF) direct government R&D funding as a percentage of GDP. But, this competitive advantage is eroding as growth of federal R&D investment wanes. From 1953 to 1987 the real annual growth rate in federal R&D spending was 4.9 percent, but from 1987 to 2008 federal R&D expenditures grew at just 0.3 percent.

#### Federal R&D is low now and will decline in the future. It is critical to innovation.

ANDES ’16 (Scott; The Brookings Institution, “Maximizing the local economic impact of federal R&D,” 10/26, https://www.brookings.edu/research/maximizing-the-local-economic-impact-of-federal-rd/)ww

Federally funded research and development (R&D) is a hallmark of the U.S. economy. Two-thirds of the most influential technologies of the past 50 years were supported by federal R&D at national laboratories and universities.1 Smartphones, autonomous vehicles, personalized medicine, and other transformational innovations owe key technical components to public R&D. Moreover, this federal commitment does more than produce new products. By fostering innovation, it translates into productivity growth, the most important mechanism for ensuring economic growth and broadly shared prosperity. Most federal R&D does not happen in Washington, but these investments “come to ground” in communities across the country, and these regions should share in the economic benefits of research. To maximize and make apparent the economic returns from R&D, the Trump administration should seek to improve the local economic impact of federal R&D.

Despite the critical nature of scientific discovery, federal R&D is under siege. As a share of GDP it is less than half what it was in the mid-1960s,[2] and, while the United States once led the world in government-funded R&D intensity, we now rank 12th.[3]

Even at historically low levels, current federal R&D may face greater cuts in the future. As mounting debt and mandatory spending squeeze discretionary spending across the federal budget, federal R&D is likely to come under increased scrutiny. According to Congressional Budget Office projections, discretionary spending will shrink from one-third of the federal budget to 22 percent by 2026.[4]

In the middle of the 20th century, members of Congress and the voters who elected them saw federal R&D as a necessary condition for achieving important national objectives like space exploration, disease eradication, and addressing looming energy crises. Today, for many Americans, these missions have taken a back seat to the growing demand for high economic returns-on-investment. State legislators, mayors, governors, and members of Congress rally when the possibility of a military base closure threatens jobs, but they are silent or perhaps clueless when cuts in research funds for the national laboratories and universities within their jurisdiction undermine regional innovation, jobs, and growth.

To maximize and make apparent the economic returns from R&D, the next administration should seek to improve the local economic impact of federal R&D.

In the United States and around the world, scientific and R&D-intensive firms situate themselves in proximity to universities and national laboratories to enjoy myriad “ecosystem” benefits. Local economic clusters, often anchored by cities and urbanized research parks, emerge to concentrate knowledge flows, specialized workers, and supply chains in a way that encourages innovation and leads to higher productivity.[5]

The next administration should direct the largest federal R&D funding agencies—the Department of Defense (DOD), the Department of Health and Human Services (DHHS), and the Department of Energy (DOE)—to adopt policies to better support local economic development. Not only do these departments represent the majority of federal investments in R&D, but they also have unique investment vehicles that can be leveraged by cities at different points in the development process and through different mechanisms.

### A/T: Kealey

#### History shows that government funding for R&D is necessary

HARDEN ’13 (Victoria; founding Director of the Office of NIH History and the Stetten Museum at the National Institutes of Health, “History Supports Government Funding for Public Health,” 8/7, https://www.cato-unbound.org/2013/08/07/victoria-harden/history-supports-government-funding-public-health

Kealey also argues that if government funding for science was halted, “there would be an armamentarium of private philanthropic funders of university and of foundation science by which non-market, pure research (including orphan diseases) would be funded.” I counter that this model has already been tried and found wanting, at least as it applies to medical research in the United States. Beginning early in the twentieth century, as leading scientists hoped to exploit the germ theory of infectious disease to save lives, medical research was regarded as an activity that could produce public good, and the private philanthropic sector was indeed first to lend support. In 1904, John D. Rockefeller opened the Rockefeller Institute in New York City; in 1911, the Otho S. A. Sprague Memorial Institute was founded in Chicago. The first experience of U.S. scientists with government-coordinated research came in 1917, when the U.S. Army created a Chemical Warfare Service to fund projects by chemists at universities and other institutions aimed at defending troops from gas attacks. This military research effort played a large role in changing the minds of U.S. scientists about whether government could support peacetime scientific research without impeding their freedom to pursue novel scientific ideas related to the work.

After the war, chemists pressed for the creation of a privately funded institution to conduct chemical research that would benefit medicine. This effort foundered because of many conflicting interests: academic chemists and pharmacologists refused to associate with their industrial colleagues. Existing institutes, such as the Rockefeller and the Sprague, opposed support for a competing institute. Chemists, pharmacologists, and physicians disagreed about which discipline should have administrative control of any institute. Industry was reluctant to commit resources to basic medical research. Eventually, supporters turned to the U.S. Congress, which in a 1930 act expanded and renamed an existing public health laboratory as the National Institute of Health.

After World War II, as Kealey notes, the U.S. government greatly expanded support for science through the National Science Foundation and the grants program of the National Institutes of Health (the NIH became plural with the creation of new institutes in 1948). Kealey’s argument that society would have benefitted more during the last sixty years by leaving money in the pockets of taxpayers than by investing in government-funded science is based on his belief the private sector would have performed all the basic research needed for the good of the public. I would like to take the example of research that underlay the response to the pandemic of acquired immune deficiency syndrome (AIDS) as refutation of that argument.

A society can respond to epidemic disease only on the basis of medical knowledge it has accumulated by the time the epidemic occurs. In the case of AIDS, the basic medical knowledge rested on the fields of molecular immunology and virology, which had become fruitful research areas in the 1970s. The mechanism by which the AIDS virus destroyed the immune system was not completely understood in 1981, when AIDS was first recognized as a new disease, but molecular immunology provided the mental model via which the disease was defined and initially addressed. Knowledge about human retroviruses was stunningly recent (1979 and 1980 were when the first two human retroviruses were definitively demonstrated), and without their discovery, it is unlikely that physicians would even have considered the possibility that a retrovirus might be the cause of AIDS.

With the serendipity that sometimes happens in basic medical science, much of this knowledge emerged not from infectious disease research but from U.S. government funding for cancer research. A Special Virus Cancer Program begun in the 1960s had sought to identify viruses as a cause of cancer. The program was largely shut down in the mid 1970s after no virus could be conclusively linked to a human cancer. Of course, shortly afterwards, hepatitis B was linked to liver cancer and the human papilloma virus to cervical cancer. In December 1971, however, U.S. government-funded cancer research had expanded greatly with enactment of the National Cancer Act. Under the auspices of this legislation, research on human retroviruses continued in National Cancer Institute (NCI) laboratories in Bethesda, Maryland. Every one of the retrovirologists involved in the identification of the human immunodeficiency virus (HIV) as the cause of AIDS either directly trained or spent time working with colleagues in Bethesda. Furthermore, a screening program established under the National Cancer Act to test large numbers of compounds for their cancer-fighting potential was repurposed to test candidate drugs against AIDS. Research utilizing this program identified the first drugs with any effectiveness against AIDS—AZT, ddI, and ddC. Could all this work have been produced by privately funded science? Possibly, but given the uncertainty regarding results inherent in basic science and the impetus to pursue only activities with near-term profit possibilities, it is doubtful that medicine could have responded to AIDS as quickly as it did on the basis of basic knowledge built up through government funding.

### A/T: Private Crowd Out

#### By using tax credits, the counterplans spurs rather than deters private R&D

MARKOVICH ’12 (Steven J.; Council on Foreign Relations, “Promoting Innovation Through R&D,” 11/2, https://www.cfr.org/backgrounder/promoting-innovation-through-rd)ww

Experts agree that research and development (R&D) is the backbone of a globally competitive, knowledge-driven economy. R&D investment helps develop new products and services that drive growth, create jobs, and improve the national welfare. For decades the U.S. government and private sector have spent more than any other nation on R&D. But that advantage is eroding as other nations increase public and private R&D investments at a faster rate, causing the global U.S. share of this critical investment to decline.

Government creates the policies that stimulate R&D activity in the private sector. At the moment, individual firms are often unable to harness all the benefits of innovation and, therefore, are underinvesting in R&D. Tax incentives like the Research and Experimentation tax credit are one tool to encourage investment, and experts say policymakers should do more to support U.S. innovation by aligning other relevant policies related to education, patent law, and immigration.

#### Government funding is necessary for innovative research

MARKOVICH ’12 (Steven J.; Council on Foreign Relations, “Promoting Innovation Through R&D,” 11/2, https://www.cfr.org/backgrounder/promoting-innovation-through-rd)ww

Without government intervention, "the private market would not adequately supply certain types of research," Federal Reserve Chairman Ben Bernanke said at a conference on jobs and growth in May 2011. "The declining emphasis on basic research is somewhat concerning because fundamental research is ultimately the source of most innovation, albeit often with long lags."

These lags exist because of the distance between basic research and human needs. Applied research helps bridge this gap by solving practical problems that benefit humanity with a commercial objective. While determining the structure of DNA was an exercise in basic research, efforts to determine a link between genetics and breast cancer would be applied research. Once that link is understood, the development phase of R&D puts the new knowledge into designing products and services. Creating a quick test for a genetic sequence linked to breast cancer would be development. Development is lower risk and yields patentable innovations with direct commercial objectives, so business R&D spending dominants in this phase. Notably, most government development funding is for defense.

### A/T: Immigrants Key

#### Funding for R&D will ensure that immigrants continue to choose the US

McDANIEL ’14 (Paul; American Immigration Council, “How Immigration Is Good for Science Research in U.S.,” 3/4, http://immigrationimpact.com/2014/03/04/how-immigration-is-good-for-science-research-in-u-s/)ww

Research and knowledge are becoming key to economic growth worldwide, increasing the importance of intellectual work. And for the United States in particular, immigrants play an important role in science and engineering (S&E) research. Indeed, a February report from the National Science Board of the National Science Foundation (NSF), Science and Engineering Indicators 2014, notes that the United States is the world’s preeminent producer of scientific research thanks partially to immigrants. Writing for Pacific Standard, Michael White, a systems biologist at the Washington University School of Medicine in St. Louis, summarized the report’s findings. As he put it, the U.S. “funds the most research in academia and business, it publishes more science than any other nation, and its scientific papers are disproportionately among the world’s best.” And immigrants play a crucial role in those activities.

The NSF report found that a large proportion of workers employed in science and engineering fields in the United States are foreign born. “Compared to the entire college-educated workforce, college graduates employed in S&E occupations are disproportionately foreign born,” the report states. According to the 2011 American Community Survey, over 26 percent of all college-educated workers in engineering and science occupations were foreign born. Additionally, over 43 percent of workers in these occupations holding doctorate degrees are foreign born. But as White points out, these numbers understate the “crucial role these scientists play in sustaining U.S. preeminence in basic research.” He notes that “a better number is 49 percent: foreign scientists fill nearly half of the mid-level positions that make up the backbone of the scientific labor force at U.S. research universities.” These postdoctoral researchers are fulfilling an important role in the larger research process while honing their skills and expertise necessary for more advanced positions. As White states, “Most higher-level jobs in scientific research require some postdoctoral experience after graduate school, so university faculty can easily staff their labs with well-trained, newly minted Ph.D.-holders” in exchange for career mentorship.

White also explains that foreign postdocs come to the United States

because of the international reputation of U.S. universities, but they themselves are a big reason for that reputation. Because of the federal government’s major investment in academic research over the past six decades, well-funded U.S. universities successfully compete for the best scientific talent around the world. Many of these talented scientists remain here in higher-level research jobs in academia and industry. Those that leave still maintain relationships with colleagues they met, which helps keep U.S. science well-connected internationally.

While the U.S. has had little trouble attracting international talent in the past, global competition for scientific talent is growing as more places increasingly transition to knowledge economies. While the U.S. continues to fund more research and development than any other country, its global share is shrinking. According to the NSF report, knowledge economies “rely on sustained investment in research and development that produces useful innovations” as well as on higher education to prepare students to develop and use their skills. Science and research are collaborative enterprises. They are most successful through the exchange of ideas. As White concludes: “Science has always been most successful when countries exchange ideas, talent, and resources, which is why one of the National Research Council’s ‘ten breakthrough actions’ recommended to Congress is to ‘ensure that the United States will continue to benefit strongly from the participation of international students and scholars in our research enterprise.’ Our scientific preeminence relies heavily on migrant scientists, and that’s a good thing.”