Inventing with the Enemy?

U.S. Policy toward Chinese and Indian Human Capital

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If the United States remains the world leader in technological innovation, it is also clear that innovation is increasingly a transnational endeavor. Over the past few decades, U.S. firms have established sprawling networks of R&D centers around the world, empowered by profound changes in information and communications technology (ICT) as well as rapid development in emerging economies. Since 1990, U.S. firms have also concluded more than 4,700 R&D partnerships with organizations in other countries (Thomson Reuters 2015). Perhaps the most intimate collaboration, however, stems from the fact that U.S. firms and universities import human capital from around the world. China and India are particularly important partners for the United States in this regard. As of November 2012, there were 163,390 foreign graduate students enrolled in science and engineering (S&E) fields at U.S. universities. China accounted for 36 percent of this total, while India accounted for 24 percent (U.S. National Science Foundation 2014, appendix table 2–28). If we turn to high-tech specialty workers, the story is similar, if more lopsided. Such workers are typically come to the United States through the H-1B visa program, created under the Immigration Act of 1990. Of the 153,000 such visas issued in 2013, nearly three quarters went to citizens of China or India, with India alone accounting for a whopping 65 percent of the total (U.S. Department of State 2014b).

What are the political underpinnings of this remarkable trade in brainpower between the United States and the world’s two most prominent rising powers? China and India support these flows of human capital as integral parts of their national development strategies. In both countries, worries about the “brain drain” have receded and enthusiasm for “brain circulation” has grown, and both China and India have come to see their diasporas as assets rather than liabilities (Zweig 2006, 192–193; Haniffa 2009). The
explanation for U.S. policy is less obvious. One might argue that U.S. policy reflects pro-globalization economic ideology, or perhaps the dominant state’s proclivity to promote economic openness (Krasner 1976). Yet if we look more closely, it is clear that the United States is more open in some areas than in others. The United States places no limit on the number of foreign students who can enroll at U.S. universities, but it does cap the number of H-1B visas it issues. Moreover, the H-1B visa cap has varied over time, with temporary increases in the late 1990s and early 2000s but no such increases during the past decade. Why does Washington’s openness vary across different policy domains and across time?

There are a variety of explanations for why rival states sometimes cooperate in the economic realm (Liberman 1996; Levy and Barbieri 2004; Powell 1991; Snidal 1991; J. D. Morrow 1997). Yet this literature has devoted little attention to varying levels of cooperation within such relationships. In addition, because much of this literature treats the state as a rational and unitary actor, little attention has been paid to how domestic politics may shape commerce between rivals. As Scott Kastner notes, this is an important gap in the literature, since domestic politics is a major focus in the broader study of foreign economic policy (Kastner 2009, 6). Lastly, since much of this literature has focused on trade, it has neglected other types of economic interactions such as foreign investment and immigration, both of which loom large in global innovation today.

Focusing on U.S. policy toward H-1B visas and student visas, this paper addresses all of these gaps in the literature. It begins by presenting a pluralist theoretical argument, one that focuses on the interests of “high-tech capital” – technology firms and research universities that benefit from liberal policies toward high skilled immigration –
and the level of opposition it faces from other interests in its quest for openness. It then tests this theory through three case studies that show how varying levels of opposition result in varying levels of openness. The article then considers alternative explanations for such variation in U.S. policy. The conclusion sums up the findings and considers their broader implications.

**The politics of skilled migration**

Scholars have often viewed immigration policy, particularly in the United States, through the lens of liberal international relations theory (Moravcsik 1997). Interest groups are often the central characters in these stories. While interest mobilization faces the classic collective action challenges, these can be overcome, particularly when immigration produces concentrated benefits and/or costs (Freeman and Tendler 2012, 327). Some scholars thus stress the role of beneficiaries, such as business or immigrant communities, in maintaining open policies in the face of hostile public opinion (Freeman 1995). More recent work has shown how business preferences can evolve in response to changes in the international trade and investment environment (Peters 2014). Still others emphasize the role of immigration opponents, such as labor or nativist groups, to explain changes in immigration policy (Briggs 2001; Zolberg 2006). In contrast to these models, the theory outlined below emphasizes the interaction between supporters and opponents of immigration.

Given that immigration may take many different forms, the focus here is on policy regarding legal flows of skilled workers. More specifically, it is on the flow of labor – or human capital - for technology-intensive sectors of the economy. In the United
States, it is useful to distinguish between two types of such labor. The first type is labor employed by the private sector: the workers who actually carry out corporate R&D. In the United States, this is the largest pool of S&E labor in the economy. In 2010, for-profit businesses employed 62 percent of the 5.4 million scientists and engineers who were employed in S&E occupations in the country (U.S. National Science Foundation 2014, 3-20). The second type is labor is that employed by universities and non-profit research organizations. While the most famous of these workers are luminary professors, the bulk of the labor pool consists of graduate students and post-doctoral researchers. In 2011, the U.S. had more than 450,000 full-time graduate students and roughly 44,000 post-doctoral researchers in S&E disciplines (U.S. National Science Foundation 2014, 5-31 and 5-32). The collaborative nature of scientific research means that these graduate students and post-docs are frequently crucial to the execution of important laboratory work.

The primary beneficiary of these flows is what I call “high tech capital” – the firms and universities that are major performers of R&D. These actors have a clear interest in accessing skilled foreign labor. Such access increases the overall labor pool and thus the supply and diversity of talent available to conduct R&D. This is true whether the labor in question is computer programmers, electrical engineers, or graduate students in scientific disciplines. Notably, the appetite for importing skilled foreign talent is not reduced by trade and capital openness, as is the case for low-skilled labor (Peters 2014). Even in an open environment, offshoring R&D work is considerably more complex and difficult than offshoring low-skilled labor. While U.S. firms are spending more and more on R&D abroad, they still spend roughly 80 percent of their R&D budgets
at home (U.S. National Science Foundation 2014, 4–27). Moreover, much of the R&D done abroad supports the work done at home - by adapting products to foreign markets, for example. And when R&D work is to be offshored, firms often find it useful for foreign workers to work in the headquarter country for a period of time before returning home. That is, skilled immigration is sometimes an enabler of offshoring, rather than an alternative to it. For this reason, the H-1B visa has been called the “offshoring visa” or the “outsourcing visa” (Lohr 2007). For universities, meanwhile, it is simply not practical to have S&E graduate students so far from their professors.

High-tech capital is thus a natural supporter of skilled immigration – especially immigration that supports their R&D efforts. The question, then, is how much resistance high-tech capital faces as it presses for open policies. I wish to highlight three distinct possibilities in this regard. First, high-tech capital may face little or no organized opposition. This may be because the potential opposition is not organized, or because the potential opposition does not perceive immigration as a threat. For example, some scholars maintain that skilled labor tends to oppose the immigration of additional skilled labor because it anticipates increased competition for employment, but a competing strand of scholarship has found no connection between concerns about labor market competition and immigration preferences (Scheve and Slaughter 2001; Mayda 2006; Hainmueller and Hiscox 2007; Hainmueller and Hiscox 2010). More recent research has found that high-skilled labor does sometimes oppose the entry of additional workers in the same industry, but how far this finding can be generalized remains to be seen (Malhotra, Margalit, and Mo 2013).
The second possibility is that high-tech capital will face organized opposition from labor. For the reasons given above, it is entirely possible – if not foreordained – that labor will perceive open immigration as a threat and therefore resist it. If so, policy will be influenced by the relative political strength of capital and labor. In general, high-tech capital is likely to be the more powerful force. High-tech companies in particular are wealthy, well aware of their interests, and (given the technical nature of their business) difficult to challenge in public argument. In contrast, unions have often been weak or divided on immigration issues in general (Peters 2014, 834). Their ability to mobilize around high-tech labor issues is particularly constrained, since union density among high-tech workers is often low. As a result, while labor may have some capacity to resist high-tech capital, this capacity is limited.

The third possibility is that high-tech capital will face resistance both from labor and from other well-organized groups. This is most likely when an expansion of skilled immigration is considered alongside other types of immigration. Resistance could come from nativist groups, specific racial or ethnic groups, environmental groups, or groups organized around a single issue. Whereas labor is motivated by economic concerns, these latter groups may be preoccupied with racial, moral, political, or environmental considerations. Whatever the motivation, there is greater potential for frustrating high-tech capital’s ambitions in this case.

It follows from this discussion that openness to skilled immigration will reflect the level of resistance high-tech capital faces. First, when high-tech capital faces little or no resistance in its push for openness, the state will presumably adopt an open approach. Second, when high-tech capital faces resistance from organized labor, policymaking will
be more contentious, but the outcome will still favor capital, given its greater capacity for influence. Third, when high-tech capital faces organized resistance from a wider array of organized groups, it should have more difficulty in its pursuit of openness than in the preceding two cases.

**Testing the Argument**

The following case studies test the propositions developed above by highlighting the varying resistance that high-tech capital has faced in its bid for liberal policies toward skilled immigration. The first case focuses on high-tech capital’s efforts to raise the cap on H-1B visas in 1998 and 2000. In this case, the main source of resistance came from labor. The second case explores high-tech capital’s campaign to raise the H-1B visa cap as part of comprehensive immigration legislation in 2007. In this case, high-tech capital encountered much stronger resistance to openness, as labor was joined by a large and well-organized anti-immigration movement. The third case considers the effort of high-tech capital to maintain an open student visa program after the September 11th attacks in 2001. In this case, little organized opposition materialized.

*Contested Openness: H-1B victories in 1998 and 2000*

The Immigration Act of 1990 created the H-1B visa program for specialty workers with a bachelor’s degree or equivalent experience. The visa was valid for three years, with the possibility of extension up to six years, and an annual limit of 65,000 new visas was imposed. Over the course of the 1990s, the program became a vehicle for funneling workers from India and (to a lesser degree) China to U.S. technology firms.
Starting in the mid-1990s, prominent technology firms began to lobby the U.S. government to expand the program. Microsoft opened its Washington office in 1995 (Glanz 2000). That same year, the Information Technology Association of America (ITAA) hired Harris Miller, a former Congressional staffer and professional lobbyist with expertise in immigration, as its President (Glanz 2000). A new lobbying group, American Business for Legal Immigration (ABLI), was set up with financial support from Microsoft, Cisco, Intel and other IT firms to focus specifically on the H-1B issue (Teitelbaum 2014, 57–58).

Technology firms were well-positioned to succeed. By the mid-1990s, lawmakers had discovered that high tech firms – and Silicon Valley in particular – could be lucrative sources of campaign funds. President Clinton had tapped into Silicon Valley for his 1996 re-election campaign, and the Democratic National Committee had benefitted from its largesse as well (Zengerle 1998, 21). Just as important, such firms had authority and access that was unrivaled. As one awed journalist wrote of TechNet in June 1998: “TechNet’s ability to gain intimate audiences with officials at the highest levels is truly impressive. Already, (it) has staged over 70 ‘issue briefings’ – small tete-a-tetes frequently likened to ‘graduate seminars on the new economy’ – between its members and various politicos, from Speaker New Gingrich to Vice President Al Gore.”

The opponents of H-1B expansion could not match this level of influence. The main source of opposition came from organized labor, which was concerned that the H-1B program put downward pressure on wages and was open to abuse. Yet labor was weak: private sector union membership among men had dropped from 35 percent in the early 1970s to around 15 percent by 1999 (Western and Rosenfeld 2011, 516). The AFL-
CIO remained a significant and well-organized lobbying force, to be sure, and its campaign contributions and grass roots efforts remained important sources of support for the Democratic Party. In high-tech circles, however, the organization’s clout was constrained by low union density among technology workers. By one estimate, less than two percent of high tech workers were union members in the late 1990s (Milton 2003, 32). The lack of “worker voices in the advocacy space,” as the AFL-CIO’s former director of immigration policy put it, made grass roots action difficult (Avendano 2015).¹

While high-tech labor was not unionized, some workers belonged to politically active professional associations. Of these, the Institute of Electrical and Electronics Engineers-USA (IEEE-USA) was the most prominent in opposing H-1B expansion. The group had roughly 220,000 members as of 1998, but for several reasons it was poorly positioned to compete with high-tech firms in the political arena (Kostek 2015). First, and most obviously, financial constraints limited what it could spend on professional lobbyists or campaign contributions, particularly compared with technology companies. Nor was the group positioned to organize grass roots activism, since its membership tended to be politically disengaged and libertarian in outlook. The group also suffered from internal divisions, with academic members often unsympathetic to the concerns of those in industry. IEEE-USA was also pressured by the umbrella organization, IEEE, to moderate its position. As a global organization with members throughout the world, IEEE was concerned that criticism of the H-1B program would vilify some of its non-American members. Lastly, IEEE-USA could not rival the “star power” and public

¹ Ana Avendano was associate general counsel and director of immigration at the AFL-CIO from 2004 to 2009. From 2009 to 2014, she was assistant to the AFL-CIO’s President for immigration and community action.
credibility of those on the other side, such as Microsoft CEO Bill Gates. In short, IEEE-USA had only limited ability to compete with high tech capital in Washington.

H-1B expansion was also opposed by anti-immigration groups in 1998, but these groups were not positioned to significantly augment labor’s strength at that time. The oldest group, the Federation for American Immigration Reform (FAIR), claimed to have more than 70,000 members in March 1998, but others suggest its membership was probably substantially lower (PR Newswire 1998; Burghart and Zeskind 2012, 4). It also had a small lobbying budget, with $260,000 in expenditures that year (Center for Responsive Politics 2015b). Another group, Americans for Immigration Control, claimed to have roughly 250,000 members in the mid-1990s, but its lobbying expenses averaged merely $40,000 from 1998 to 2000 (Cummings 1995; Center for Responsive Politics 2015a). By comparison, Microsoft spent $3.9 million on lobbying in 1998 and nearly $5 million in 1999 (Center for Responsive Politics 2015c). A third group, NumbersUSA, was created in 1996. NumbersUSA would become a formidable force in immigration politics in the mid-2000s, as described below, but in the late 1990s it was still finding its feet and had no full-time lobbying office in Washington (Congress Daily 2000).

In sum, high tech capital faced resistance in its efforts to raise the H-1B cap in the late 1990s, but it was also well positioned to overcome this resistance. It was against this backdrop that high-tech firms would record impressive legislative victories in 1998 and 2000. In January 1998, Commerce Secretary William Daley stated that the Clinton administration did not support an increase in the H-1B cap, which he said was “politically not feasible” (Ewell 1998). Following a sustained lobbying effort, high-tech firms would
prove him wrong over the next several months. They would have an easy time in the Senate, where a bill to increase the cap to 95,000 in 1998 (and potentially to higher levels from 2000 to 2002) passed 78-20 on May 18. The effort to raise the cap would raise concerns in the House of Representatives and the White House, however. In July, in fact, President Clinton threatened to veto the legislation if it did not feature substantial protections for U.S. workers. Specifically, the administration wanted the legislation to fund training for U.S. workers as well, safeguards for U.S. workers. The latter were to that employers would recruit U.S. workers before applying for an H-1B worker, and that they would not lay off U.S. workers in order to hire an H-1B worker (Leopold 1998). The veto threat sparked a round of high-tech lobbying. The administration’s lead negotiator, Vice President Al Gore, took calls from officials at companies including Intel and Hewlett-Packard, while a number of CEOs sent letters to the White House (Simons 1998).

Ultimately, a solution emerged. The White House agreed to substantial increases in the H-1B cap: 115,000 would be allowed in FY 1999 and 2000 and 107,500 in 2001. In exchange, funding for worker training and education was provided through the imposition of new fees on visa applications. Worker safeguards, however, were limited to “H-1B dependent” firms. For firms with more than 50 employees, this would apply only if H-1B workers constituted at least 15 percent of their workforce. This provision ensured that the safeguards would not apply to most prominent U.S. firms, such as Microsoft and Intel, since these were large enough to employ many H-1B workers without reaching the threshold. After the White House signaled that it would accept these terms, the House passed the revised legislation 288-133 on September 24. The new
The rather lopsided “compromise” outcome was a resounding victory for high tech firms. Whereas in January the Clinton administration had resisted raising the cap, by July it was merely seeking a compromise solution, and in October the President signed a bill with safeguards that did not apply to the largest employers. Indeed, Jack Golodner, president of the AFL-CIO’s Department for Professional Employees, dismissed the safeguards in the bill as “cosmetic” (Branigin 1998). The Washington Post reported that “High Tech is King of the Hill” (Leibovich 1998).

In 2000, high-tech firms would make another push to raise the cap. To broaden their support, they allied with research universities, many of which had also used the H-1B visa program. Higher education lobbyists were initially reluctant to become involved because most of the additional visas would be allocated to industry, given the rules governing the program at the time. In response, the high-tech sector offered to modify their proposed legislation. Under the new proposal, H-1B visas granted to employees of universities and non-profit organizations would no longer count against the annual cap, which meant that higher education would no longer need to compete with industry for the limited number of visas. Higher education signed on and agreed to support the bill (Teitelbaum 2014, 113–114).

While resistance to H-1B visa expansion had been weak in 1998, it was weaker still in 2000. The AFL-CIO, to be sure, remained opposed to raising the cap. In mid-
February, the group had made an historic statement in which it called for legalizing undocumented foreign workers and other pro-immigrant measures, but the statement remained opposed to guest worker programs like the H-1B visa (AFL-CIO 2000). IEEE-USA, however, moderated its stance. The problem, the group argued, was that H-1B workers were like “indentured servants,” since they could not leave the employer that originally sponsored them if they wanted to secure a green card. Rather than simply opposing an increase, therefore, IEEE-USA argued that H1-B workers should be given expedited green cards.

In this context, the legislation passed fairly easily. In May, the Clinton administration proposed raising the cap to 200,000 over the next three years (Pear 2000). The movement then stalled after the Democrats pushed for amendments designed to appeal to Latino groups – a shrewd tactical move in an election year. After Democrats agreed to attach the amendments to a budget bill instead, however, the legislation passed quickly. On October 3, the Senate voted 96-1 in favor, while the House passed the bill just hours afterward in a voice vote. The new law raised the cap on H-1B visas to 195,000 for 2000, 2001, and 2003. It also delivered to higher education: foreign individuals working for higher education, government research, non-profit institutions would no longer counted against the cap. The law removed per-country limits – mainly a problem for applicants from India – on workers seeking permanent employment-based visas if additional visas were available in other employment-based categories. It created new programs to improve education and training of U.S. workers in science and technology, and it encouraged the Immigration and Naturalization Service to accelerate

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2 These included measures to extend an existing amnesty for Nicaraguans and Cubans to others from Latin America and to allow illegal immigrants who entered the United States before 1986 to apply for citizenship (Puzzanghera 2000).
the processing of all immigration-related applications (*American Competitiveness in the Twenty-First Century Act of 2000* 2000).

The role that high-tech firms played in crafting the bill was widely noted at the time. According to one legislator, in fact, many lawmakers were simply afraid to defy the technology firms. “Once it’s clear (the visa bill) is going to get through, everybody signs up so nobody can be in the position of being accused of being against high-tech,” said Senator Robert Bennett of Utah. "There were, in fact, a whole lot of folks against it, but because they are tapping the high-tech community for campaign contributions, they don't want to admit that in public” (Lochhead 2000). On National Public Radio, Lindsay Lowell of Georgetown University called the IT industry “a juggernaut” (*National Public Radio: Talk of the Nation* 2000).

In short, the outcome in this case can be understood in terms of the balance of interests for and against raising the H-1B cap. High-tech capital overpowered a weaker labor movement and succeeded in raising the cap on two occasions. The outcome was not ideal for high-tech capital, to be sure: new fees and regulations were introduced, the H-1B visas were still subject to an annual cap, and the increases in the cap were temporary. On balance, however, high tech firms and universities were remarkably successful in raising the cap on two occasions not long after the Secretary of Commerce had declared this to be “politically not feasible.”

*High-tech stalemated: the 2007 Immigration Fight*

Demand for H-1B visas fell following the bursting of the dot-com “bubble” in 2001. In fact, when the H-1B cap reverted to 65,000 in October 2003, the *Wall Street*
Journal reported that the cut stirred “relatively little unease” in Silicon Valley because demand for the visas had fallen along with the fortunes of technology companies (Valbrun and Thurm 2003). By 2004, however, competition for H-1B visas escalated once again. At the same time, President George W. Bush was beginning a push for comprehensive immigration legislation, hoping not only to increase H-1B visas but also make broader changes, including the creation a pathway to citizenship for some illegal immigrants. The White House was counting on businesses to lobby Congress in support of this comprehensive legislation (McKinnon 2005). Going forward, therefore, the primary focus would be on raising the H-1B cap as part of a broader effort to change the immigration system.

In this new context, high-tech capital would have to contend with far more formidable resistance than it had faced in 1998 and 2000. To be sure, labor was now divided: in 2005, the Service Employees International Union and several other groups broke away from the AFL-CIO, and these unions were more open to guest worker programs like the H-1B (Ludden 2006). The anti-immigration movement, however, was invigorated. NumbersUSA in particular had tapped into the Internet to expand its membership base and mobilize its activists. With immigration reform a hot topic in 2006 and 2007, the group’s membership soared from 16,000 in January 2004 to 529,000 in January 2008, and its email list had reached 1.5 million by mid-2007 (Beck 2015c; PR Newswire 2007). NumbersUSA was also highly organized in coordinating visits with members of Congress. In fact, the group would tailor office visits to maximize impact: if a particular member was known to be of a certain religious faith, for example,
NumbersUSA would send members of that denomination to the office make their case (Ball 2013a).

The anti-immigration movement’s growing clout became clear in 2006. In late May, the Senate passed a comprehensive bill that raised the H-1B cap and created a pathway to citizenship for illegal immigrants, among other changes. The bill quickly ran into opposition from a large number of House Republicans, who were backed up by NumbersUSA and other anti-immigration groups. Feeling the heat, Speaker Dennis Hastert invoked the “Hastert Rule” and insisted that he would not seek to pass legislation that did not command a majority of his caucus. One Republican Senator called this “a death blow” for immigration reform that year, which indeed it was (Babington 2006). In the wake of this defeat, pro-immigration advocates conceded that they had been outfought by the anti-immigration movement in 2006. “The restrictionists are very loud,” said Angela Kelly, Deputy Director of the National Immigration Forum. “They’re able to focus their numbers in a really powerful way by having lots of member contacts. And we don’t do that as well on our side” (Madden 2007).

Despite the defeat in 2006, the mid-term elections in November offered a new opportunity to pass a comprehensive bill. The Democratic Party took control of both Houses of Congress, and President Bush remained committed to the reform effort. On May 9, Senate majority leader Harry Reid introduced the “Secure Borders, Economic Opportunity and Immigration Reform Act of 2007.” As the 2006 legislation had, this bill created a pathway to citizenship for some illegal immigrants. The bill also raised the H-1B cap to 115,000, with the limit potentially rising to as much as 180,000 depending on demand. The bill also exempted from the limit all foreign students with advanced STEM
degrees from U.S. universities. While these changes were welcome to high-tech firms, companies were upset with the increased fees and new regulations associated with the program (Moscoso 2007). For their part, anti-immigration groups were ardently opposed to the bill, decrying what they called “amnesty” for illegal immigrants in particular (Paulson, Bowers, and Wood 2007). In response, Senate Republicans asked for more time to offer additional amendments. On June 7, however, Senate Majority leader Harry Reid attempted to end debate on the bill. Three cloture votes on the bill failed by wide margins, however, with the first two attracting no Republican votes and the last one attracting only six (GovTrack.us 2007a).

Following lobbying from the White House, the Senate would take up the matter again later in the month. The bill was re-introduced with a few modifications, including more funding for border security to entice wavering Republicans (Stanton and Yachnin 2007). Reid also opened the door to a limited number of amendments. Technology companies worked hard to seize the opportunity. In fact, The New York Times reported that Microsoft executives Bill Gates and Steve Ballmer were leading “a small army of high-tech executives to Capitol Hill” in an effort to shape the evolving legislation (Pear 2007a). This effort met with some success: technology companies were able to craft compromise language on fraud and abuse of the H-1B system that the industry could support (Greenfield 2007a).

At precisely this moment, however, the anti-immigration movement escalated its efforts to block the legislation. NumbersUSA was particularly active. President Roy Beck would claim that his group flooded Congress with more than two million faxes arguing against the immigration overhaul in May and June (Kiely 2007). On June 28 –
the day that the Senate was scheduled to vote on cloture – anti-immigration activists inundated Congress with angry phone calls that shut down the Capitol switchboard (Weisman 2007). The protest prompted Republican Senator John Ensign of Nevada to remark: “The intensity level and the passions on this bill, we’ve never seen anything like it. Not even close” (Kiely 2007).

NumbersUSA also targeted key Senators. Senate minority leader Mitch McConnell and Senate minority Whip Trent Lott – prominent Republicans in favor of reform – were particular targets. In particular, NumbersUSA mobilized grass-roots efforts against the bill in McConnell and Lott’s home states of Kentucky and Mississippi – both of which were home to sizable numbers of NumbersUSA activists (Beck 2015a; Schreiner 2007). The effort included protests, radio coverage, and television advertisements. Lott, for one, was impressed. "Those really pushing for the bill have not been as effective as those pushing against it," the Senator said in late June (Gaouette 2007). In the end, Lott would prove to be a hard target. He was evidently not planning to run for re-election: he had toyed with retiring before his 2006 re-election, and he would actually retire from the Senate in late 2007 (Rothenberg 2006). Despite NumbersUSA’s pressure, therefore, Lott would vote in favor of cloture on June 28.

McConnell was another matter. The Senator did plan to run for re-election in 2008, and he was sufficiently vulnerable that it would prove to be a close contest. In response to the grass-roots pressure, McConnell disappeared from view in the days leading up to the vote (Milbank 2007). In the end, he would show up on June 28 and vote against the bill – a remarkable turnaround for a key ally of the President. McConnell subsequently explained that the resistance within his home state was too much to ignore. “I heard from
a lot of Kentuckians. Thousands of smart, well-informed people called my offices to talk about this bill. They did not like (this bill)… . And to every one of them, I say today: your voice was heard” (McConnell (KY) 2007, S8674). NumbersUSA President Roy Beck later recalled hoping to stop the bill even if McConnell had voted for it, but the minority leader’s about-face made its defeat a certainty (Beck 2015a). In the end, the cloture motion gained only 46 votes, with 53 against (GovTrack.us 2007b).

Not surprisingly, the coalition in favor of reform was upset with the outcome. ITAA President Phil Bond said he was “tremendously disappointed” (Greenfield 2007b). Yet the pro-reform camp also recognized that they had been outfought once again – by NumbersUSA in particular. “NumbersUSA initiated and turbocharged the populist revolt against the immigration reform package,” said Frank Sharry, executive director of the National Immigration Forum and a prominent proponent of reform (Pear 2007b). Years later, Sharry would recall, “(NumbersUSA) generated a huge volume of opposition to the bill, and it was a big factor in our defeat” (Ball 2013b).

In sum, the outcome here reflected a very different balance of interests than was evident in the first case. Whereas in 1998 and 2000 high-tech capital had faced resistance only from labor, in 2007 it also had to contend with an invigorated anti-immigration movement. This movement would prove remarkably effective in blocking the comprehensive legislation that would have raised the cap on the H-1B visa program.

A One-sided Contest: Student Visas after 9-11

For decades, the U.S. government has placed no cap on the number of foreign students who can study at U.S. universities, and the United States has enrolled more
students from abroad than any other country in the world. By 2013-2014, in fact, more than 886,000 international students were enrolled at U.S. colleges and universities (Institute for International Education 2014a). Foreign students are particularly prominent in graduate S&E programs. In 2011, foreign students on temporary visas received 36 percent of all S&E doctorates granted by U.S. universities (U.S. National Science Foundation 2014, 2–33). In some fields, particularly engineering, computer sciences, and economics, such students received half or more of all doctorates awarded. China and India, meanwhile, have become the largest sources of foreign graduate students in S&E fields, representing 36 and 24 percent of the total in 2012, as noted earlier.

High-tech capital in the United States has developed a strong interest in maintaining flows of students from abroad. For universities, foreign students represent a lucrative stream of revenue, particularly since such students often pay higher tuition fees and receive substantial funding from sources outside the United States (Institute for International Education 2014b). In addition, many graduate S&E programs would find it difficult to continue without foreign students, as the numbers above suggest, given their contributions as sources of revenue or sources of labor. Technology companies also have a keen interest in maintaining the flow of S&E students from abroad. In both information technology and biotechnology, foreign students represent a potentially valuable source of future labor (Silber 2001). Foreign students are allowed to work in the United States after graduation for a limited period of time through the Optional Practical Training Program, after which they may be sponsored for an employment-based visa like the H-1B. Some companies even cultivate relationships with promising foreign S&E students while they are still in school in hopes of hiring those students after graduation.
The terrorist attacks of September 11, 2001 had dramatic implications for the politics surrounding flows of foreign students to the United States. One of the Al Qaeda hijackers, Hani Hanjour, had entered the United States on an F-1 student visa to study English, but never attended class and was never reported missing. Two other hijackers converted their visitor visas to vocational student visas inside the United States and then enrolled in flight school in Florida. These revelations led to a pronounced shift in favor of tighter immigration policies following the attacks. As Congressman Tom Tancredo, a prominent advocate of restricting immigration, said shortly after the attacks: “We are winning. That is different” (Edsall 2001).

The immediate challenge high-tech capital faced was particularly dire: the prospect of a temporary ban on foreign students altogether. On September 27, 2001, Senator Diane Feinstein proposed a six-month moratorium on student visas to give the Immigration and Naturalization Service (INS) time to fix the many problems in the system. Feinstein’s proposal was not the most severe: longer moratoriums were proposed in the House of Representatives. But it was particularly important, since the Senator was then chair of the Senate Judiciary Committee’s Subcommittee on Technology, Terrorism, and Government Information. Feinstein also called for funding for an electronic student tracking system, new admission procedures, greater security at ports of entry, and other measures. The proposed moratorium naturally attracted the most attention, setting off what the Boston Globe called a round of “intense lobbying” (Rodriguez 2001b).

It may have been intense, but the lobbying was also quite one-sided. Universities naturally led the charge against the proposed moratorium. Traditionally, the American Council on Education (ACE) has been the most prominent of the “Big Six” associations
representing U.S. higher education, and it led the charge in this case (Murray 1976, 82–83). On October 2, ACE President David Ward wrote to a letter to the Senate Judiciary Committee, one that was co-signed by 29 other higher education organizations, in response to Feinstein’s proposal (Ward 2001). The letter “vigorously oppose(d)” the moratorium. It argued that it the ban would be ineffective, since student visas were only two percent of all visas granted overall, and that it would do “enormous” damage to a range of national interests. The letter further argued that it would take “decades” to undo the damage that even a short-term ban would impose. The letter concluded by signaling a willingness to work with the government toward an effective monitoring system. The letter’s points were driven home in meetings between Feinstein and higher education officials, including representatives from public and private universities in the Senator’s home state of California (Sherman 2001).

The lobbying effort paid off: on October 5, Feinstein said that the moratorium “may not be necessary” (Sherman 2001). As her press security put it, the Senator decided to “pull back” following her dialogue with higher education representatives (Rodriguez 2001b). At the heart of the decision was a deal: no moratorium on visas in exchange for cooperation from higher education on more effective monitoring. Feinstein’s office explained this in a statement: "if we can get cooperation from schools with regard to student visa reporting requirements, the moratorium will not be necessary” (Sherman 2001). Even so, the retraction of the proposal was described in the press as “a major victory” for universities with large numbers of foreign students (Rodriguez 2001a).

High tech capital’s victory was not surprising. Simply put, it faced little organized opposition in this case, and what little opposition it did face was too slow and
too weak to compete. The clearest opposition came from the anti-immigration group, FAIR. In mid-October, FAIR President Dan Stein appeared on CNN and criticized the decision to drop the moratorium. FAIR would later propose an annual ceiling on student visas on its website, arguing that foreign students created greater competition for domestic students in admissions and funding (Federation for American Immigration Reform 2012). Yet FAIR was isolated and weak. The most obvious potential ally - domestic student organizations - were more concerned about student freedoms than foreign competition after September 11. In an interview in late October, for example, the United States Student Association’s Legislative Director did not question the need for so many foreign students. Instead, she expressed concern about the “web of suspicion cast over international students” and charged that student privacy was “clearly being compromised” (Drew 2001). FAIR also had little support from other anti-immigration groups. Mark Kirkorian, executive director of the Center for Immigration Studies, stated in 2002, “actually, we haven’t done much on foreign students, and it’s actually a big hole, I think, in our examination of the whole of immigration policy is that almost nobody has looked at foreign students.” Nor was NumbersUSA an ally. In fact, NumbersUSA President Roy Beck would later say that his organization had no interest in limiting foreign students, calling higher education “one of our great exports” (Beck 2015b). Nor could FAIR work with the AFL-CIO on this issue, as it had at times in resisting the H-1B program, and the lack of an alliance with labor deprived FAIR of a principal means through which the group had been able to exert some influence in the past (Haus 1995). In short, FAIR’s stance notwithstanding, high-tech capital faced decidedly little
opposition as it resisted the proposed moratorium on student visas and to sustain this decision thereafter.

There were more challenges to come in the wake of 9/11. While there was no moratorium, the issuing of visas for students and academic visitors became a considerably more vexed process after the attacks. The denial rate for F-1 visas rose from 20 percent in FY2000 to more than 27 percent in FY2002, and it remained above 25 percent in 2003 (Yale-Loehr, Papademetriou, and Cooper 2005, 176). The denial rates for Chinese and Indian F-1 and J-1 applications were especially high: 42 and 43 percent, respectively, in 2003 (Yale-Loehr, Papademetriou, and Cooper 2005, 178). More generally, applications were delayed more frequently, sometimes causing students to miss their programs or to start their studies late, and returning students often encountered challenges in trying to re-enter the country. Academic institutions found it difficult to predict which applications would require more time, making the delays difficult to manage. More rigid enforcement of existing rules also created new challenges for foreign students after they arrived in the United States. These and other challenges, combined with the perception that the United States was less welcoming than in the past, undermined the country’s image as an attractive destination for overseas study (Yale-Loehr, Papademetriou, and Cooper 2005, 178).³ As a result, applications for F-1 visas dropped by nearly 100,000 from FY2001 to FY2004. Applications for graduate study declined by 28 percent in 2004 and then 5 percent in 2005, with notable declines in applications from Chinese and Indian students in particular (Yale-Loehr, Papademetriou, and Cooper 2005, 177–178). Graduate engineering programs were particularly hard hit,

³ Other challenges included greater competition from other countries and rising tuition costs. University officials also noted the weaker U.S. economy at the time as well (Testimony of Martin Jischke 2004).
given that these were particularly reliant on inflows of Chinese and Indian students (Steakley, Rubin, and Reina 2004).

Faced with these challenges, Yale University President Richard Levin stated in late 2003 that eliminating barriers to student visas had become the top priority for his and other American universities in Washington (Collier 2003). On May 12, 2004, the heads of 24 higher education, science, and engineering organizations jointly published a “Statement and Recommendations on Visa Problems Harming America's Scientific, Economic, and Security Interests.” The statement charged that “visa-related problems are discouraging and preventing the best and brightest international students, scholars, and scientists from studying and working in the United States.” It predicted that “the misperception that the United States does not welcome international students, scholars, and scientists will grow” in the absence of action to correct it. It warned that the damage to the country’s “higher education and scientific enterprises, economy, and national security would be irreparable.” The statement proceeded to single out six specific problems and made recommendations regarding how each one could be addressed. To drive the points home, university presidents highlighted the statement in testimony before the Senate Foreign Relations Committee in October (Testimony of Martin Jischke 2004, 5–7).

For their part, technology companies worried that reduced numbers of foreign S&E students to the United States would limit their access to foreign talent. “We’re concerned this could hurt the pipeline of masters and Ph.D.s in engineering in the years to come,” one manager at a high-tech multinational told the Far Eastern Economic Review in November 2002. “This could have a serious impact on industry” (Hiebert 2002). Or
as ITAA President Harris Miller told CNN earlier in the year, “Half of all graduate students in the math and science programs (in the United States) are foreign students. When a company is looking for the best and brightest, particularly people with advanced degrees, master degrees and Ph.D.s, frequently, many of those candidates are born abroad.” In short, while universities took the lead, technology companies were worried about the reduced flow of foreign students as well.

The Department of State responded to these concerns. From 27 percent in 2002, the refusal rate for F-1 visas fell to 20 percent in 2005 and 2006 (U.S. Department of State 2014a). The Department also made a concerted effort to reduce delays. It turned out that the time required to adjudicate a visa request depended heavily on whether the applicant had to undergo an interagency security check known as Visas Mantis. First introduced in 1998, the process was designed to ensure that visas were denied to individuals who would promote the transfer of controlled technologies to countries deemed state sponsors of terrorism and other “countries of interest.” After September 11, the number of such checks skyrocketed, and the review process became much slower as a result. In 2003, the Government Accountability Office (GAO) noted that the Mantis reviews took an average of 67 days to complete (U.S. Government Accounting Office 2004, 2). Reviews for applicants from China, India, and Russia were particularly slow, with many cases pending 60 days or more. By late 2004, however, the average Mantis review took 15 days, thanks to a concerted effort to streamline the process (U.S. Government Accountability Office 2005, 2). Moreover, the denial rate remained low: only 2 percent of all cases (U.S. Government Accountability Office 2005, 7). There was also a broader effort to expedite student visas more generally: in July 2004 the
Department issued a cable indicating that applicants for F, J, and M visas were to be given priority in scheduling, since such applicants often faced deadlines for arrival in the United States (U.S. Government Accountability Office 2007, 13).

In short, high tech capital was highly successful in this case. In the immediate aftermath of 9-11, it blocked a moratorium on student visas that would have greatly disrupted inflows of foreign students. Over the next few years, the influx of foreign students would nonetheless decline, thanks in part to delays and other challenges in the issuing of student visas and the negative perceptions these problems generated abroad. Yet higher education officials and high-tech firms worked to address these problems and were ultimately successful. Facing little organized opposition, high tech capital has been able to sustain an uncapped flow of foreign students to U.S. universities.

**Alternative explanations**

There are a variety of alternative explanations for the pattern of U.S. policy described above, yet each of them suffers from serious weaknesses. First, other scholars have argued that political ties shape economic relations, and that friendlier states are more likely to cooperate in the economic sphere (Gowa and Mansfield 1993). Scholars have also argued that democracies are more likely to trade with each other than with non-democracies (James D. Morrow, Siverson, and Tabares 1998). Both of these perspectives imply that the United States will be more open to collaboration with India than with China. The United States clearly enjoys better political relations with India, even offering to sell India advanced military equipment in recent years while maintaining an arms embargo against China. The two countries have also celebrated their shared
democratic values. Yet U.S. policy is less open with regard to H-1B visas – where India has always loomed much larger than China – than it is with regard to foreign students, where China has often been more prominent than India. In other words, U.S. policy is the opposite of what one would expect if it were driven by political ties or shared democratic values.

A second alternative explanation concerns the strength of the leading actors in the political coalition pressing for openness. In this view, the more powerful the leading actors, the more successful the coalition should be in shaping policy. While this is a reasonable contention, it does a poor job of explaining the varying outcomes in these cases. The pro-openness coalition has been most impressive in the H-1B arena, where highly profitable high-tech firms have taken the lead and universities have played an occasional supporting role. Since 2004, however, high tech capital has failed to increase the H-1B visa cap, even when it has allied with other groups in favor of immigration reform. In contrast, high-tech capital has been more successful in maintaining the flow of foreign students to U.S. universities, even though universities took the lead here and high-tech firms remained in the background. Once again, U.S. policy is the opposite of what one would expect based on this point of view.

A third explanation concerns the fact that it is easier to defend the status quo than to make changes to U.S. federal legislation, particularly given the multiple veto points involved (MacIntyre 2003). New legislation is required to raise the H-1B visa cap, but not to maintain the uncapped flow of foreign students or to ease their entry into the United States. In this view, then, we should expect high-tech capital to have more difficulty on the H-1B issue, as indeed it has. Nonetheless, this explanation only helps to
illuminates part of the variation of interest here. In particular, it cannot illuminate the varying outcomes within the H-1B arena over time: high-tech capital was far more successful pressing for increases in the cap in 1998 and 2000 than it was in later years. The theory advanced in this study can explain this outcome – as well as the differences between the H-1B and the foreign student cases.

A final potential objection to the argument made here concerns relative gains. In this view, U.S. policymakers need not worry about relative gains in these cases because the best and brightest foreign students and H-1B workers find ways to remain in the United States, particularly through the green card system. In other words, the status quo favors the United States. There are several problems with this perspective. For one, it is unclear why the United States would limit H-1B visas (both in number and in duration) if its motive were to maximize its absorption of talent from other countries. In addition, it is far from easy for foreign students and workers to stay in the United States indefinitely – receiving a green card can take more than a decade, during which time the individual (and their family) is in limbo. Such uncertainty, combined with brighter prospects at home, has prompted more Chinese and Indian S&E students and workers to leave the United States in recent years (Wadhwa et al. 2009). Lastly, Chinese and Indian individuals in the United States often contribute to their home country’s development through scholarly exchanges, business relationships, and other kinds of exchanges; they are not simply “gains” for the United States. Indeed, it is for this reason that China and India have embraced their diasporas as assets rather than liabilities in recent years. In short, it is hard to see U.S. policy as designed to maximize the country’s relative gains.
Conclusion

U.S. collaboration with China and India in innovation has important long-term implications for power politics, but the policies considered in this study are not driven by realpolitik considerations. Instead, the cases explored here suggest that domestic interest groups play a key role in shaping U.S. policy. Technology firms and universities support liberal immigration policies with regard to technology workers and students, with firms taking the lead on the former and universities taking the lead on the latter. The level of openness that ensues depends on the amount of resistance they face from other groups. Where high tech capital has encountered the least resistance – on student visas – it has succeeded in maintaining an uncapped flow of foreign talent. Where high tech capital has encountered resistance from labor – raising the H-1B cap in 1998 and 2000 – it has prevailed, but it has had to live with only temporary increases and the persistence of a cap. Where high tech capital has encountered resistance not only from labor but also from a large and well-organized anti-immigration movement – as in its subsequent attempts to raise the H-1B cap – it has failed to increase the level of openness.

These findings resonate with the work of other scholars who have emphasized the role of firms in immigration policy (Peters 2014) and of “internationalist economic interests” in fostering commerce between rival states (Kastner 2009). But it also extends these studies in two key ways. First, it highlights the possibility and importance of effective resistance to pro-globalization interests. Organized labor is one source of resistance, but its political power with regard to these issues in the United States is limited. The more potent source of resistance identified in this article is nativist organizations, which in 2006 and 2007 played an important role in defeating immigration
legislation that would have raised the H-1B visa cap. Second, this study illuminates how the politics of high-skill immigration differ from the politics of low-skill immigration. Other scholars have argued that firms decrease their demand for low-skill immigration in response to trade and investment liberalization (Peters 2014). This dynamic is not apparent in high-skill immigration policies observed here. Indeed, firms and universities have sought to expand the H-1B visa program even in an era of relatively open trade and investment policies. Offshoring R&D work is considerably more challenging than offshoring low-skilled labor, and when it is to be done, firms often find it useful to bring foreign workers to the United States before sending them back overseas.

This study also points to a neglected area of research in international relations: the political economy of power transitions. Traditionally, power transition theorists have simply asked whether dominant states and rising powers can avoid fighting each other (Organski and Kugler 1981; Lemke 2002). In contrast, questions surrounding their cooperation in the economic realm have largely escaped scrutiny. In today’s era of globalization, and particularly global innovation, this is clearly an important gap in the literature. This study suggests that dominant states can be driven more by domestic politics than by strategic concerns when collaborating with rising powers. How broadly this finding can be applied, and whether it is portable to other historical periods, remains to be seen.
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