

POLICY PAPER SERIES

IZA Policy Paper No. 151

**An Auctions Approach to
Immigration Policy**

Pia M. Orrenius
Madeline Zavodny

FEBRUARY 2020

POLICY PAPER SERIES

IZA Policy Paper No. 151

An Auctions Approach to Immigration Policy

Pia M. Orrenius

Federal Reserve Bank of Dallas and IZA

Madeline Zavodny

University of North Florida and IZA

FEBRUARY 2020

Any opinions expressed in this paper are those of the author(s) and not those of IZA. Research published in this series may include views on policy, but IZA takes no institutional policy positions. The IZA research network is committed to the IZA Guiding Principles of Research Integrity.

The IZA Institute of Labor Economics is an independent economic research institute that conducts research in labor economics and offers evidence-based policy advice on labor market issues. Supported by the Deutsche Post Foundation, IZA runs the world's largest network of economists, whose research aims to provide answers to the global labor market challenges of our time. Our key objective is to build bridges between academic research, policymakers and society.

IZA Policy Papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available directly from the author.

ABSTRACT

An Auctions Approach to Immigration Policy*

Immigration reform is once again on Washington's policy agenda. Serious attention is being given to policies that would place more emphasis on merit than on family ties, which are favored by much of the current US immigration system. One way to determine merit is a point-based system. This paper argues that auctioning off visas would be preferable to a point-based system. Auctions would promote economic growth, increase government revenue, and lead to a more efficient allocation of visas while reducing discretionary decision making by government officials. This paper outlines several proposals for how to implement visa auctions that could serve as a starting point for designing a better immigration policy. We recommend replacing the current system of employment-based temporary and permanent visas with an employer-centered auction in order to increase the economic gains from immigration.

JEL Classification: F22, J61, J15, D44

Keywords: immigration, foreign workers, visa auction

Corresponding author:

Madeline Zavodny
University of North Florida
1 UNF Drive
Jacksonville, FL 32224
USA

E-mail: m.zavodny@unf.edu

* This paper originally appeared as a policy paper at The Center for Growth and Opportunity (CGO) at Utah State University. Zavodny thanks CGO for financial support. The views expressed here are solely those of the authors and do not reflect those of the Federal Reserve Bank of Dallas or the Federal Reserve System.

Amid widespread agreement that the current US immigration system is broken, new reform proposals continue to take shape. Gone are the bipartisan comprehensive immigration-reform plans of the past that would have expanded a mix of family- and employment-based immigration and created a pathway to legal status for unauthorized immigrants. Instead, the most recent plans argue either for drastic cuts in immigration, as in the Reforming American Immigration for Strong Employment (RAISE) Act, or for a transition to a more merit-based system instead of the current family-based system, as in the recent Trump administration proposal.¹ Also figuring prominently in recent proposals is a government-run point system that would select which immigrants to admit. Previous attempts at immigration reform in 2007 and 2013 likewise included a point-based system for selecting some immigrants. We argue in this article that point systems have serious drawbacks and that, instead of a point system, Washington should adopt an auction system to allocate employment- or skill-based visas.

As we discuss in this article, auctions offer several advantages over a point system in addition to advantages over the current system. The current system—and any system the United States is likely to adopt—imposes annual caps on most categories of permanent and temporary visas. Demand exceeds supply for many of those capped visa categories. The government therefore must decide how to allocate scarce visas among qualified applicants. It currently allocates visas through a combination of first-come, first-served systems, queues, and lotteries. Unlike those mechanisms, auctions would allocate visas to their highest-valued use at a point in time. Such an auction promises to increase economic efficiency. As we and other economists argue, auctions are the best way to allocate visas if the goal is to maximize immigrants' contribution to the US economy. Compared with the current system or a point system, auctions also would reduce any adverse effects on competing American workers and increase government revenues.

We first outline the main shortcomings of the current US immigration system, focusing on employment-based visas. We then discuss the advantages and disadvantages of using auctions to allocate those visas, followed by an explanation of why auctions are preferable to a point system. We close with summaries of several specific plans that have been put forth for how to structure visa auctions, including our own. While we are, of course, partial to our own plan and

¹ See <https://www.congress.gov/bill/115th-congress/senate-bill/354> and <https://www.whitehouse.gov/articles/president-trumps-bold-immigration-plan-21st-century/>.

recommend that it be adopted, any of these plans would be an improvement over the current system for allocating employment-based visas.

Shortcomings of the Current System

The US immigration system encompasses many categories of permanent resident visas (“green cards”) and temporary visas. Most green cards—about two-thirds of the one million issued in a typical year—are granted on the basis of family ties. Only about one in seven are awarded on the basis of a job offer or an immigrant’s skills. Permanent resident visas are also awarded to winners of a lottery for residents of underrepresented countries (the diversity visa lottery) and to qualifying humanitarian migrants (refugees and people granted asylum). With the exception of immediate relatives of US citizens, the number of permanent resident visas available each fiscal year is capped in each category and for each origin country. The total number of employment-based green cards is capped at 140,000 per fiscal year, and accompanying spouses and children count toward the cap.

In contrast to permanent resident visas, temporary visas (other than tourist visas) are awarded almost exclusively based on employment or skills. Categories of temporary visas include the H-1B visa for skilled workers in specialty occupations, the H-2A visa for seasonal agricultural workers, and the H-2B visa for seasonal nonagricultural workers, among others.² Most categories are capped, and the visas are valid only for a limited period.

Most of the permanent and temporary visa caps have been in place for decades with no adjustment for economic growth or population increase. The result is a widening gap between the demand for and supply of employment-based visas. This gap manifests in several ways. Annual allotments of H-1B and H-2B visas are used up long before the end of the year. In recent years, the Department of Homeland Security has received so many H-1B and H-2B applications during the first week of accepting petitions that it has held lotteries to select recipients randomly. The EB-3 category for permanent visas for skilled workers and professionals also is chronically oversubscribed, and the queue for those visas—and for most capped categories of family-based visas—extends for years or even decades for immigrants from populous nations that are affected by country caps, such as China, India, and the Philippines. A disconnect between the number of

² Some categories of temporary visitor visas are also awarded based on employment-related criteria, such as the B-1 temporary visitor visa. Visitor visas are outside the scope of all of the auction proposals discussed here.

employment-based permanent resident visas and H-1B temporary visas means an ever-growing queue for green cards among relatively skilled workers whom employers are willing to sponsor to remain in the United States. The long and uncertain wait prompts an untold number of valuable workers to move elsewhere instead of contributing to the US economy. The shortage of visas even prompts some businesses to open or expand operations abroad where workers or visas are more readily available.³

Fixed caps and queues also make the US immigration system less responsive to changes in labor demand, putting a brake on economic growth. The disconnect between the availability of visas and changes in labor demand makes it more difficult for employers to hire the workers they want when the economy is expanding. The queues also mean that visa issuances barely budge during a recession despite a drop in labor demand. During the depths of the 2007–9 Great Recession, the United States still hit the H-1B and H-2B visa caps and issued over one million green cards each year.

Like queues, lotteries are an inefficient way of allocating scarce visas. Lotteries award visas randomly rather than on the basis of employer need or migrants' relative economic contributions, and they therefore represent a misallocation of human capital that reduces potential economic output. Lotteries incentivize employers to submit more applications for more workers than they actually want to hire and, for companies with subsidiaries, to submit multiple applications for the same foreign worker. Large employers are better positioned than smaller ones to adopt these strategies, which reduces the fairness of a lottery.

A final consequence of the shortcomings of the current system worth noting here is unauthorized immigration. Until recently, illegal entries of workers across the US-Mexico border traditionally followed the US business cycle, with entries rising during good times and falling during downturns (Hanson 2007).⁴ Many of those workers would prefer to migrate legally instead of paying a smuggler, risking their lives to cross the border, and then earning less while

³ The most-cited example is Microsoft's opening of a center in Canada in 2007 in response to the lack of visas available in the United States. See <https://workpermit.com/news/microsoft-opens-canada-center-response-us-immigration-problems-20070710>.

⁴ This pattern came to an abrupt end with the housing bust and ensuing recession, and unauthorized immigrant failed to return to its pre-bust pace as the recovery gained steam due to a combination of improved economic conditions in Mexico, changing Mexican demographics, and tougher US immigration enforcement policies (Orrenius and Zavodny 2019).

working illegally (rather than legally) in the United States. However, temporary worker visas are scarce and many employers find the visa programs too cumbersome and costly to use.

Advantages of Visa Auctions

The central advantage of an auction is that it enables market forces to allocate visas to their highest-valued use, as demonstrated by willingness to pay. Current policy, in contrast, treats all employment-based visa applications within a given category the same and, for temporary visas, uses lotteries to award them randomly when demand exceeds supply. We focus here on advantages and then disadvantages associated with auctions of visas to US employers, not to potential immigrants themselves, and we discuss further below why we think employer-based auctions are preferable to auctioning visas directly to potential immigrants.

Ensuring that visas go to their highest-valued use would boost economic growth by helping reduce labor market bottlenecks and admitting higher-skilled immigrants. Employers would be willing to bid the most for workers who contribute the most to their bottom lines, ensuring that the most productive workers enter rather than just those who win a lottery or are near the head of the line. Employers also would be likely to seek out foreign workers who are complementary to US natives, perhaps because such workers are unavailable domestically, which would further boost productivity in the workplace.

The market forces that are the chief advantage of visa auctions point to another benefit: changes in visa prices provide a signal of the underlying demand for foreign workers. The government can use changes in prices as a signal of whether to increase or decrease the number of visas available. Immigration then would be more closely synced with labor market conditions, which would raise efficiency and output. In a downturn, the government even could buy back visas in order to funnel funds to employers (with a side benefit to some domestic workers of reducing labor market competition). The government could do this via reverse auctions, where it would solicit bids by employers willing to sell back their visas and then buy visas from sellers with the lowest prices. Despite its economic appeal, this buyback scheme likely would get little political support since it would effectively subsidize firms that hire foreign workers.

Auctions also would increase government revenue. In addition to the revenue from the auctions, tax receipts would rise since the average earnings of immigrants presumably would increase. The additional funds could be put toward vouchers for training programs available to

workers who are particularly likely to compete with immigrants for jobs or used to offset costs borne by state and local governments in immigrant-intensive areas.

Some competing domestic workers would benefit from auctions because they effectively impose a tax on hiring foreign workers. By raising the cost of hiring foreign workers, auctions would increase employers' demand for domestic workers.

Disadvantages of Visa Auctions

While visa auctions offer several advantages over the current system, they are not without downsides. Auctions may seem complex, particularly initially, and small businesses may be especially reluctant to participate in them.⁵ Uncertainty about future auction prices and visa quantities also may make some employers reluctant to participate in auctions. Of course, all of these concerns apply to the current system as well, particularly regarding temporary worker visas. A well-designed auction that includes a secondary, or resale, market would help ameliorate these concerns.

Another concern about auctions—and immigrant workers more broadly—is possible downward pressure on wages. Would employers reduce foreign workers' compensation in order to recoup the cost of purchasing a visa, and would other workers in similar jobs see their compensation fall correspondingly? This is unlikely to occur for two main reasons. First, visa portability—the ability of foreign workers to move readily across employers—would cause employers to compete for foreign workers and protect workers from exploitation.⁶ Second, market competition for visas would keep their prices relatively high. The total cost of hiring a foreign worker would not be less than the cost of hiring an American worker, and likely it would be higher. Relative demand for American workers then would increase. But there is a trade-off: higher costs of hiring workers, whether native- or foreign-born, mean higher costs for businesses, which reduces the total number of US jobs.

⁵ If the government is concerned about small businesses' ability to compete for visas in an auction, it can subsidize small businesses, covering some of the cost of the visas for them. The government also could set aside a fixed number of visas to be made available to small businesses at the conclusion of an auction at market price, akin to how the US Treasury sets aside some of each new bond issuance for individual investors. Any plan that treats small businesses differently from other businesses creates a market distortion that reduces economic efficiency, although it may increase political expediency.

⁶ A resale market in visas helps make employers more willing to purchase visas even though employers are not allowed to lock foreign workers into long-term employment contracts. An employer whose foreign worker moves to another employer (which must buy a visa) can then hire another foreign worker or sell the visa in the resale market.

A final concern is whether the immigrants who enter under an auction system would integrate into the US economy and succeed over the long run. An auction would tend to admit foreign workers with skills that are in demand right now, and those skills might not remain as valuable in the future. This concern applies to any employment- or skill-based admission system. Auctioning only temporary, not permanent, visas and requiring temporary visa holders to leave if they lose their job and cannot find another might help address concerns about skill obsolescence, although temporary visas also reduce employers' incentive to invest in their workers' human capital. Typically, with permanent workers, skill obsolescence is less of a problem because employers offer their workers on- or off-the-job training and benefits such as tuition reimbursement. If not, workers themselves tend to seek out the skills training required for them to keep their existing job or find another.

Comparison to a Point System

With an auction, market forces determine who immigrates. The government does not need to determine which attributes are more important than others among potential immigrants. A point system, in contrast, requires that government officials determine the relative value of various characteristics, such as education, occupation, age, and English-language ability. It risks admitting immigrants that look good on paper but do not have the skills that employers actually require. It cannot reward unobservable “soft skills” that many employers—and broader society—value, such as perseverance and empathy, at all. A successful point system requires that program administrators have the foresight to know what attributes will be valuable not only now but also in the future and that they can observe changes in the labor market readily and adjust point allocations correspondingly.

Other countries' experiences with point systems amply demonstrate these administrative challenges. Canada and Australia, two pioneers in point-based admissions, have ended up with large shares of highly educated immigrants holding low-skilled jobs because qualifications acquired elsewhere often are not recognized or valued in those destination countries (Reitz et al. 2014; Kifle et al. 2019). To reduce that problem, most countries with point systems have placed more emphasis in their immigrant selection systems on an applicant having a job offer (National Academy of Sciences, Engineering and Medicine 2015; Papademetriou and Hooper 2019). In

Denmark, highly educated immigrants' outcomes were so poor that the country repealed its point system altogether (Papademetriou and Hooper 2019).

A point system is attractive in large part because it allows government officials to reward qualities that they believe society prioritizes but that employers might not. For example, new immigrants' ability to speak English might be more important to the American public than it is to employers. But can government administrators really do a better job of picking workers than prospective employers can? We think that is unlikely to be the case. Further, the qualities that the American public values also tend to be the qualities that employers value: industriousness, initiative, intelligence, and English-language skills, among others.

Of course, a point system can be designed to prioritize employment by awarding most of its points to having a job offer or by admitting immigrants in descending order by salary offer until no more visas are left. The latter might replicate the results of an auction, but it lacks the advantage of increasing government revenues. It also lacks an advantage we explain in more detail below: a secondary market that enables employers to buy and sell their rights to hire a foreign worker when their labor demand changes.

The United States already has an employer-led system that allocates most employment-based visas on the assumption that employers are the best deciders of which foreign workers should be admitted. Employers are in the best position to evaluate potential immigrants' skills and productivities and to determine the quality of the employer-employee match (Cox and Posner 2012). They typically also have the best information about the availability of other workers and the relative costs and benefits of, in effect, importing a foreign worker instead of hiring a US worker or some other alternative. Admittedly, all of that information usually is imperfect—employers may not know in advance whether a potential immigrant will work out as expected. But because employers have strong incentives to make the right choice and they know their business area, technology, and labor needs, employers are better positioned than government officials to choose potential immigrant workers.

Summary of Auction Proposals

While several notable economists have advocated that the US government auction off visas, including Barry Chiswick (1982), Gary Becker (1987), Julian Simon (1989), and Richard Freeman (2006), only recently have economists advanced detailed proposals for how such

auctions might be structured. Proposals for the United States have focused on auctioning visas to employers, but some proposals are aimed at individual migrants. None of those proposals has been adopted thus far, but Australia and the UK are among the countries that have considered using auctions to allocate some visas.

Orrenius and Zavodny (2010) propose a two-step process in which the government first auctions off permits to employers that would then be allowed to hire foreign workers, who subsequently would receive provisional work visas.⁷ They recommend creating three sets of auctions—one for high-skilled workers with permits valid for five years, one for less-skilled workers with permits also valid for five years, and one for seasonal workers with permits valid for one year.⁸ They propose replacing the current employment-based temporary and permanent visa system, along with the diversity visa lottery and some categories of family-based visas, with this system. Holders of provisional work visas would be able to work only for employers that hold a permit (at least until they apply for and receive permanent residency, which would occur after a minimum of five years for high-skilled workers and ten years for less-skilled workers). Importantly, immigrant workers holding provisional work visas would not be tied to their initial employer—they could move to any employer that holds a permit. That important provision preserves labor market flexibility and reduces employers’ monopsony (or lack of market competition) power over workers, which helps prevent abusive and unfair labor practices.

In addition to auctioning off permits quarterly, the government would maintain an electronic secondary market that would allow employers to buy and sell permits as their labor demands change. Having tradable permits would ensure that employers who most value a permit could purchase one at any time, which is important for reducing labor market bottlenecks. The resale market also would prevent permit prices from being too low, which is an essential part of incentivizing employers to try to hire American workers before turning to foreign workers.

Peri (2012) proposes implementing an auction system similar to that developed by Orrenius and Zavodny (2010) but kicking it off by auctioning off H-1B and H-2 temporary foreign worker visas instead of replacing the existing system wholesale. Peri proposes ultimately

⁷ Any US employer with an employer identification number issued by the Internal Revenue Service would be eligible to bid in the auctions. In theory, advocacy organizations could buy permits and “retire” them until they expire if their goal is to reduce the number of foreign workers.

⁸ Orrenius and Zavodny (2010) recommend distinguishing between high- and less-skilled workers on the basis of pay or job characteristics, such as occupation lists.

allowing foreign workers to buy their permit from their current employer. Those immigrants could then work for any employer, work for themselves, or presumably stop working entirely.

Casella and Cox (2018) also propose a similar auction system for temporary worker visas but with several tweaks. First, they propose that employers be able to store permits for future use after purchasing them in an auction. The clock starts ticking on a permit's time limit only after the employer hires a foreign worker, which could be years into the future. Second, they propose that the employer's right to hire a foreign worker and the foreign worker's right to work in the United States be severable. Once the foreign worker is in the United States, the worker can look for another job. If the worker finds a more desirable job, that new employer can, in effect, buy the worker's permit from the existing employer at the current price of permits in the secondary market, prorated based on the permit's expiration date. They propose that the government act as an intermediary in that resale market, with the new employer paying the government and the government reimbursing the existing employer the same amount.⁹

The three proposals outlined above involve auctions to employers, not to immigrants themselves. Vedder (2015) instead proposes auctioning visas directly to immigrants. As Casella and Cox (2018) explain, auctioning visas to immigrants themselves would favor the wealthy (or those with access to credit and high potential earnings).¹⁰ It would not necessarily result in the workers that employers value the most entering the country and therefore would have a smaller impact on economic output than employer-based auctions. We therefore believe that employer-based auctions would be preferable to auctioning visas directly to immigrants. After all, a primary reason to adopt an auction system is to promote efficiency and economic growth.

Further, auctioning large numbers of visas directly to immigrants is unlikely to be popular with the American public and risks reducing public support for immigration. We believe the United States should be admitting more immigrants, not fewer, and reduced public support for immigration would make that more challenging. One of the benefits of an auction system is

⁹ All of the resale mechanisms discussed here involve administrative costs. Those administrative costs could be covered by imposing a fee on buyers or sellers, or they could be borne by taxpayers (and offset by visa auction revenues). None of the proposals discussed here detail how to cover those administrative costs.

¹⁰ Auctioning visas directly to immigrants also would make the visa system accessible to entrepreneurs and investors, who would be excluded from employer-based auctions unless they are allowed to form US companies that would purchase their own visas. None of the auction proposals discussed here devote much attention to entrepreneurs and investors. The United States currently does not have a visa aimed at entrepreneurs, and it awards fewer than ten thousand EB-5 investor visas annually to people willing to make a million-dollar investment in the country.

that, over time, public support for immigration should increase as people see the economic and fiscal benefits of auctions. That support would make it more tenable to increase the number of visas up for auction.

Another challenge if visas were auctioned directly to immigrants would be ensuring that less-skilled workers are able to legally enter the United States. Although high-skilled immigrants make larger economic and fiscal contributions than less-skilled immigrants on average, less-skilled immigrants nonetheless are a vital part of the US economy. They help fill gaps in the less-skilled labor market and enable US workers to become more specialized in their own comparative advantages. Auctioning visas directly to immigrants or auctioning off all visas to employers in a single auction would result in only people with considerable wealth or high earnings acquiring visas. Less-skilled workers and their employers would be left out. Creating separate auctions for different pay or occupation groups does create distortions that reduce efficiency, but this seems preferable to effectively excluding less-skilled workers altogether. Importantly, visa auctions are unlikely to result in a dramatic reduction in unauthorized immigration unless they include a substantial increase over current programs in the number of visas available to less-skilled workers. Other policy changes would be necessary as well, such as an enforced nationwide mandate that all employers use E-Verify to check workers' employment eligibility.

All of these auction plans require that some administrative body—either a government agency or an appointed independent commission—determine the number of visas. Current visa numbers offer a starting point, and the number of visas then should be increased or decreased regularly in response to changes in visa prices and macroeconomic conditions. In particular, the resale market would be a source of timely information about changes in demand. Holding frequent auctions would enable administrators to adjust the number of visas available, especially when combined with the possibility that the government could buy back visas if it wanted to reduce the total quantity of them. Frequently adjusting the number of visas available is an important part of increasing the economic gains from immigration.

A final variant of visa auctions is from DeVoretz (2008), who proposes allowing domestic workers to auction off job vouchers—their right to work, in essence—to foreign workers. Under his proposal, which was aimed at Canada, a Canadian worker could put a job voucher valid for one year up for auction to prospective foreign workers; the Canadian worker

would not be eligible to work legally in the country for that year if a prospective foreign worker bought the voucher. Buying the voucher would entitle the prospective foreign worker to seek jobs in Canada, but it would not obligate employers to hire him or her. This auction scheme has two major advantages. First, it compensates native-born workers directly since they, not the government, receive the auction revenues. Second, the government or an independent commission does not determine the number of visas available for auction. Market forces would instead determine both visa prices and quantities. As visa prices rise, more native-born workers would be willing to auction off job vouchers.

Allowing Americans to auction off job vouchers to foreign workers is an intriguing idea. It offers many of the advantages of other auction designs with the added advantage of directing auction revenues to some of the lowest-income Americans, who presumably would be the most willing to auction off job vouchers.¹¹ Potential downsides, however, include externalities on other Americans and a less efficient allocation of visas than in employer-based auctions with the quantity set by the government. When deciding whether to sell job vouchers, people would not consider the effects on society as a whole, potentially resulting in too many or too few visas from a social-welfare standpoint if there are externalities. The potential negative externalities associated with immigration include congestion effects from having more people and the costs of providing publicly funded goods and services to immigrants, while the potential positive externalities include agglomeration economies from having more workers, an expansion in the tax base, and increases in innovation and entrepreneurial activity as a result of immigration.¹² While there are downsides to having government officials determine the number of visas available for auction, administrators could, in theory, take some of those externalities into account when setting the number.

Employer-based auctions probably would lead to an allocation of visas different from individual auctions. Prospective foreign workers presumably would bid for visas based on the difference between what they would earn if they migrated and what they earn at home.

¹¹ Lokshin and Ravallion (2019) model a scenario in which US citizens can sell their right to work to Mexicans. They predict that the price would be about \$20,000 per year, about thirty million workers would participate, and the US poverty rate would fall.

¹² For a general discussion of agglomeration economies, see Glaeser (2010). For a discussion of agglomeration economies specific to immigration, see Kerr et al. (2017). For evidence on immigration boosting innovation and entrepreneurial activity, see, for example, Kerr and Lincoln (2010), Hunt and Gauthier-Loiselle (2010), Kerr and Kerr (2017), and Akcigit, Grigsby, and Nicholas (2017).

Employers, in contrast, would bid based on their expected profits if they hired a foreign worker versus if they did not. The workers who migrate under individual auctions therefore might be different from the ones employers would choose if they themselves were bidding. Either way, however, a visa auction likely would result in higher-skilled, higher-paid migrants and a boost to economic output.

Our Recommendation

We recommend that the current system of temporary and permanent employment-related visas be scrapped and replaced with employer-centered auctions. As explained above, we propose the federal government hold quarterly auctions for employers to purchase permits to hire foreign workers. An employer that has a permit chooses a foreign worker, who receives a provisional visa after passing a background check. The auctions would operate in a sealed-bid, single-price format much like Treasury securities auctions.¹³ Unexpired permits could be resold in an electronic market overseen by the federal government, so employers could buy and sell permits at any time. Foreign workers on provisional visas would be able to move between employers that hold a permit.

Separate auctions are needed for permits aimed at relatively high-skilled and relatively low-skilled workers in order to ensure that employers of less-skilled workers are not squeezed out of the market. US employers bring in hundreds of thousands of less-skilled foreign workers via temporary visa programs plus employ millions of unauthorized immigrants. Effectively eliminating those employers' ability to legally bring in foreign workers would create major economic dislocations in the short run, particularly if auctions are combined with a requirement that all employers use E-Verify, as we recommend. Foreign workers who enter on a high-skilled provisional visa would be eligible to adjust to permanent resident status after working in the United States for five years, while those who enter on a less-skilled or seasonal provisional visa would be eligible after ten years. The number of permanent resident visas available to workers

¹³ We also recommend setting a minimum, or reserve, price. Employers would submit sealed bids indicating how many permits they would like to purchase in an auction and the price they are willing to pay. Permits then would be allocated from highest to lowest price until the total number of permits is filled or the reserve price is hit, whichever happens first. Winners pay the price of the lowest filled bid, so there is a single price for all permits of the same type sold at a given auction. Most permit holders thus end up paying less than their actual bid. This auction structure helps reduce concerns about the "winner's curse." The fact that most bidders will pay less than their bid makes them more willing to participate in the auction and to bid their true willingness to pay.

adjusting status would be uncapped, which would eliminate the queues for employment-based immigrants that plague the current system.

Determining the number of permits available for auction is one of the most difficult aspects of designing the auction. The starting point for quarterly auctions could be one-fourth of the annual number of temporary foreign worker visas issued in recent years.¹⁴ Adjusting those numbers frequently in response to changes in economic conditions is a vital component of creating a more flexible, nimble immigration system that enhances the economic gains from immigration. The government officials or independent commissioners that determine those numbers should be insulated from political pressures as much as possible.

Another difficult aspect of auctions—or any change in immigration policy—is how to deal with people who are already in the queue for permanent resident visas and unauthorized immigrants. Orrenius and Zavodny (2010) recommend granting provisional visas that do not require working for an employer that holds a permit to people already living in the United States who are approved for a green card and waiting for one to become available. Those people would be eligible to adjust to permanent resident status after an additional five years of working in the United States. Provisional visas also would be granted to unauthorized immigrant workers currently living in the United States, with a pathway to permanent resident status after ten years, conditional on a background check and paying a fine. We believe the benefits of legalization outweigh the costs, and the focus should be on implementing reforms that would reduce future unauthorized immigration. This requires a universal, enforced mandate that all employers verify workers' legal status and that E-Verify encompass biometric measures, not just paper documents.

Auctioning permits to employers should result in employers selecting the most productive foreign workers, which in turn is most likely to boost economic growth and efficiency and benefit US natives on net. We believe employer-centered auctions are preferable to auctioning visas directly to immigrants. Employer-centered auctions would better align immigration with the US economy and workforce needs, and they would be less controversial than immigrant-centered auctions, which would prioritize wealthier immigrants or those with

¹⁴ For high-skilled visas, we recommend basing this number on issuances of H-1B, H-1BA, L-1, TN, O1, E1, E2, and skilled categories of J-1 visas plus the number of principal immigrants entering the United States (not adjusting status) on EB-1, EB-2, and EB-3 green cards. For low-skilled and seasonal visas, we recommend basing the numbers on H-2A, H2B, and less-skilled categories of J-1 visas.

better access to credit. For similar reasons, we do not recommend a system in which US citizens directly auction job vouchers to potential immigrants.

Conclusion

While near-unanimous agreement exists that the current immigration system is broken, little agreement has emerged on exactly how it is broken and even less on how to fix it. Visa auctions would support several goals on which policy makers are likely to agree: auctions would admit the immigrants who contribute the most to the economy, increase government revenues, and minimize any adverse impact of immigration on competing American workers. They also likely would strengthen public support for immigration more generally, at least relative to alternative systems, enabling the government ultimately to increase the number of immigrants admitted.

Immigrants already make important contributions to the US economy. They account for one-sixth of workers, and they and their children constitute the lion's share of labor force growth. Immigrants are more likely than US natives to establish new businesses and, among college graduates, to create new inventions. Immigrants help fill jobs across the skill spectrum and across the country. Immigration benefits US natives by easing labor market bottlenecks and boosting economic growth and by increasing the variety of products and services available and reducing the prices of some of those products and services.

No matter what form immigration reform takes, it is unlikely to involve open borders. The issue is how best to determine who gets to enter. The United States is fortunate to have far more people who want to come work here than it is feasible to admit and hence is in the enviable position of having the opportunity to be selective. Auctions as we have laid them out are the most effective tool in that regard. Auctions would admit the workers who are the most valued by employers, which is in turn a good proxy for what most benefits the economy.

References

- Akcigit, Ufuk, John Grigsby, and Tom Nicholas. 2017. "Immigration and the Rise of American Ingenuity." *American Economic Review* 107 (5): 327–31. <https://doi.org/10.1257/aer.p20171021>.
- Becker, Gary S. 1987. "Why Not Let Immigrants Pay for Speedy Entry?" *Business Week*, March 2.
- Casella, Alessandra, and Adam B. Cox. 2018. "A Property Rights Approach to Temporary Work Visas." *Journal of Legal Studies* 47 (S1): S195–S227. <https://doi.org/10.1086/694166>.
- Chiswick, Barry R. 1982. "The Impact of Immigration on the Level and Distribution of Economic Well-Being." In *The Gateway: U.S. Immigration Issues and Policies*, edited by Barry R. Chiswick, 289–313. Washington, DC: American Enterprise Institute.
- DeVoretz, Don. 2008. "An Auction Model of Canadian Temporary Immigration for the 21st Century." *International Migration* 46 (1): 3–17. <https://doi.org/10.1111/j.1468-2435.2008.00434.x>.
- Freeman, Richard B. 2006. "People Flows in Globalization." *Journal of Economic Perspectives* 20 (2): 145–70. <https://doi.org/10.1257/jep.20.2.145>.
- Glaeser, Edward L., ed. 2010. *Agglomeration Economics*. Chicago: University of Chicago Press.
- Hanson, Gordon H. 2007. "The Economic Logic of Illegal Immigration." Council Special Report No. 26, Council on Foreign Relations, New York.
- Hunt, Jennifer, and Marjolaine Gauthier-Loiselle. 2010. "How Much Does Immigration Boost Innovation?" *American Economic Journal: Macroeconomics* 2 (2): 31–56. <https://doi.org/10.1257/mac.2.2.31>.
- Kerr, Sari Pekkala, and William R. Kerr. 2017. "Immigrant Entrepreneurship." In *Measuring Entrepreneurial Businesses: Current Knowledge and Challenges*, edited by John Haltiwanger, Erik Hurst, Javier Miranda, and Antoinette Schoar, 187–249. Chicago: University of Chicago Press. <https://www.nber.org/chapters/c13502.pdf>.
- Kerr, Sari Pekkala, William Kerr, Çağlar Özden, and Christopher Parsons. 2017. "High-Skilled Migration and Agglomeration." *Annual Reviews of Economics* 9: 201–34. <https://doi.org/10.1146/annurev-economics-063016-103705>.
- Kerr, William R., and William F. Lincoln. 2010. "The Supply Side of Innovation: H-1B Visa Reforms and U.S. Ethnic Invention." *Journal of Labor Economics* 28 (3): 473–508. <https://doi.org/10.1086/651934>.

- Kifle, Temesgen, Parvinder Kler, and Christopher M. Fleming. 2019. "The Assimilation of Australian Immigrants: Does Occupation Matter?" *Applied Economics* 51(17): 1841–54. <https://doi.org/10.1080/00036846.2018.1529398>.
- Lokshin, Michael, and Martin Ravallion. 2019. "A Market for Work Permits." NBER Working Paper No. 26590, National Bureau of Economic Research, Cambridge, MA.
- National Academy of Sciences, Engineering and Medicine. 2015. *Immigration Policy and the Search for Skilled Workers: A Workshop Summary*. Washington, DC: The National Academies Press.
- Orrenius, Pia M., and Madeline Zavodny. 2010. *Beside the Golden Door: U.S. Immigration Reform in a New Era of Globalization*. Washington, DC: American Enterprise Institute Press.
- Orrenius, Pia M., and Madeline Zavodny. 2019. "The US Needs Workers, Not a Wall." AEI Economics Perspectives. <https://www.aei.org/wp-content/uploads/2019/03/The-US-Needs-Workers-Not-a-Wall.pdf>.
- Papademetriou, Demetrios G., and Kate Hooper. 2019. "Competing Approaches to Selecting Economic Immigrants: Points-Based vs. Demand-Driven Systems." Washington, DC: Migration Policy Institute. <https://www.migrationpolicy.org/research/selecting-economic-immigrants-points-based-demand-driven-systems>.
- Peri, Giovanni. 2012. "Rationalizing U.S. Immigration Policy: Reforms for Simplicity, Fairness and Economic Growth." Hamilton Project Policy Brief 2012–01, Brookings Institution, Washington, DC.
- Reitz, Jeffrey G., Josh Curtis, and Jennifer Elrick. 2014. "Immigrant Skill Utilization: Trends and Policy Issues." *Journal of International Migration and Integration* 15 (1): 1–26. <https://doi.org/10.1007/s12134-012-0265-1>.
- Simon, Julian L. 1989. *The Economic Consequences of Immigration*. Cambridge, MA: Basil Blackwell.
- Vedder, Richard K. 2015. "Immigration Reform: A Modest Proposal." *The Economics of Immigration*, edited by Benjamin Powell, 145–66. New York: Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780190258788.003.0006>.