U.S. Immigration Policies and the STEM Entrepreneurial Workforce

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Considerable attention has been directed to immigrant entrepreneurs and the potential role of "startup visas" or special "parole status" to enable them to start high-growth companies in the U.S., overlooked in the debate has been the impact of U.S. immigration policies on the high-skilled entrepreneurial workforce. These policies impact not only immigrant entrepreneurs, but also U.S. citizen entrepreneurs who rely upon high-skilled immigrant workers to grow. In this study, we examine how U.S. immigration policies might hinder startups' ability to hire highly-skilled immigrant workers.

Startups face a number of challenges to grow and compete against established firms. First, startups have limited resources and managerial attention as they grow, and thus recruiting and retaining talent is a major activity of founders. In addition, many high-growth technology ventures require rather specialized talent, which is often difficult to find. These challenges may create additional constraint for startups seeking to hire immigrant workers. On the demand side, the costs associated with sponsoring an immigrant work visa – either H-1B or EB1 – can exceed $5000 for filing fees plus attorney fees per employee, and take several years to receive. When combined with the time and effort required to prepare the forms, these costs can place a considerable burden on rapidly growing startups relative to established firms. On the supply side, immigrant workers may be reluctant to take jobs in startups given the higher risk of firm failure that would necessitate restarting their work visa process at a new employer. In addition, large firms may be more willing to sponsor immigrant for a work visa. Together these challenges may make it exceptionally difficult for startups to find and hire the workers they need to rapidly grow, especially in STEM fields where a greater share of the workforce is comprised of immigrants.

Using a novel survey that follows a cohort of 2,283 science & engineering doctorates from U.S. research universities through their first full-time employment, we report on three key findings. First, we find that during graduate school foreign-born doctorates are significantly more likely to be interested in working in a startup relative to their U.S. counterparts. At the

same time, after graduation immigrant doctorates are 52% less likely to work in a startup (relative to working in an established firm) in comparison to U.S. doctorates. This disparity persists even when controlling for ability, degree field, and other individual characteristics. Among our sample, only 6.4% of foreign-born doctorates are employed in startups, compared to 13.9% of U.S. citizens.

Second, in the aggregate we find no significant difference in the wages of immigrant and U.S. workers, which runs counter to the notion that immigrant workers might be paid less in exchange for visa sponsorship or might otherwise be willing to work for lower wages than U.S. workers. Moreover, among startup employees we find that immigrant workers earn significantly more – not less – than U.S. workers, on average $118,000 relative to $99,200, respectively. Immigrant workers in established firms also earn more than U.S. workers – $121,200 compared to $111,200 – although the difference is not significant.

Finally, regarding work visa status, among our sample of immigrant doctorates in large established firms nearly half (48%) are on an H-1B, while 26% on an employer sponsored green card, and 18% on OPT. In startups, on the other hand, only 6% of immigrant workers are on H-1B, while 47% are on an employer sponsored green card, 24% are on a spousal sponsored green card, and 24% are on OPT. These numbers illustrate the considerably differences in visa status between startup and established firm immigrant workers, with H-1B being the primary visa for established firm immigrant workers while startup workers rely more heavily on "self-sponsored" visas such as OPT and spousal green cards.

The findings of this study could have important implications for current policy debates on immigration reform, in particular policies that would lower the costs to startups to sponsor highly-skilled immigrant worker for permanent resident work visas. Although these results are preliminary and this study is still under development, the findings suggest that there is a large untapped pool of immigrant doctorates potentially willing to work in startups that instead work in large established firms. While more work needs to be done to identify the cause of this paradoxical results, findings suggest that legislation such as retaining the extended duration of OPT, the STEM Jobs Act and the proposed "staple green card" could be essential to startups to ensure they can hire the best and brightest STEM doctorates, thereby increasing their ability to grow and contribute to the U.S. economy.