How Reducing Immigration Affects Innovation: Evidence from the Closing of America's Borders to Southern and Eastern Europe

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Before 1921, the United States had nearly open borders with Europe and Russia. By 1924, policy restrictions designed to end the historic inflow of Southern and Eastern European immigrants had reduced immigration from the British Isles by only nineteen percent, while reducing immigration from Italy by ninety percent. Some U.S. cities and states, especially those that had relied on Southern and Eastern European immigrants, experienced drastic declines in immigration after the policy change. Other U.S. cities and states, especially those that had relied on Northern and Western European immigration, experienced smaller declines in immigration. By comparing people living in these two regions before and after the shock, we estimate the causal effect of large, sudden declines in immigration on one's lifetime innovative output.

A high rate of immigration may cause expansions in the rate of economic activity, increased exposure to highly skilled peers, and other agglomeration effects which increase the opportunity for (and the returns to) inventive activity. On the other hand, a high rate of immigration may cause congestion in complementary goods that cannot expand immediately, such as schools, real estate, and other public goods; these effects could reduce the opportunity for inventive activity.

Existing research has begun to examine the impact of the era of great migration to the United States on inventive activity, but it has focused on locations as the unit of observation (Sequeira, Nunn, and Qian, 2017). In contrast, we focus on individuals as the unit of observation. As Edward Glaeser has pointed out: what is good for Buffalo as a city may not be good for the people living in Buffalo themselves (Glaeser, 2007). We focus on three groups of individuals: (1) people who were already inventing before the shock; (2) cohorts born before and after the shock; and (3) cohorts of immigrants who arrived before and after the shock.

The first group of individuals already had established a pattern of inventions before the shock; we examine how this pattern changes after the shock. The second group of individuals experienced differential numbers of years exposed to a high flow rate of immigrants during their youth; we compare those who experienced many such years to those who experienced few. The third group of individuals came to the U.S. with varied skills and accomplishments; we observe how policy restrictions affected selection towards or against high skilled migration. Depending on the group, these individuals can be further subdivided according to pre-existing education, pre-existing occupation, and gender. Taken together, the results can tell us how immigration rates effect inventive activity, as well as the mechanisms through which this effect occurs.

Preliminary results suggest that individuals who had already been patenting before the large decrease in immigration applied for fewer patents after the shock than they otherwise would have. Furthermore, cohorts of children who during childhood experienced more years of exposure to a sudden decline in immigration produced fewer lifetime patents than cohorts of children who during childhood experienced less exposure to a sudden decline in immigration.

The base data for this study are the complete count U.S. Censuses (with names) of 1880, 1900, 1910, 1920, 1930, and 1940. This base data is merged to complete U.S. patent data from the PATSTAT database using the methodology of (Doran, 2017).

References

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Figure 1: States which had high levels of Southern and Eastern European immigration prior to 1924 (as a proportion of their 1910 total population) faced a bigger decline in immigration following the 1924 Quota than did other states

