Globalization and Selecting the Best and the Brightest Immigrants

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Synopsis

- Past skilled migration numbers have been generous, and the likely future is that the relative number of skilled immigrants will remain generous.

- Immigrants make solid contributions, but targeted policy is needed to attract the best and the brightest.

- The challenge is to create policies and incentives that are competitive and targeted to select the truly best and brightest.
Do we admit too few STEM workers?

- Evidence of past shortages in STEM
  - If supply is inadequate, has high demand resulted in large wage gains?

- Evidence of numerical restriction
  - Are immigrant shares of skilled workers small?

- Projects of future shortages
  - Will current levels of STEM immigration meet projected employment?
Foreign-Born Share of Education and Age Group, 2003

Source: Lowell, tabulations NSCG03 microdata
Foreign Student (F) State Visa Issuances & IIE Enrollments, All Fs & without China 2000-2009

Source: State Dept., Open Doors
STEM workers experienced negative wage changes. “[This] is striking… These occupations had “by far the largest increase in “relative demand… it is difficult to understand”… Lemieux, T. “The Changing Nature of Wage Inequality.”
BLS projection computing & engineering jobs: estimated trend supply of natives and residual supply of immigrants (~ current avg inflow)

Source: BLS occupational projections and author's estimates
What Effect does Globalization have on Skilled Migration?

- Incentives and the drivers of migration
  - Do high costs & risks “select” for better STEM workers?
  - The elite – Nobel prize winners
  - The rest – STEM workforce
Nobel Prize Winners

- Nobel laureates are the cream of the crop.

  - Decline in immigrant share of Nobel prizes over time (globalization);

  - today, immigrants are less likely to be Nobel winners than natives.

- Hunter et al. 2009
Foreign-Born of Nobel Laureates

Source: Hunter et al., 2009.
Foreign-Born of Nobel Laureates and STEM PhDs

Source: Hunter et al., 2009, and author's calculations 30 year old PhDs
Foreign STEM workers

- Making migration pay
  - Migrants are better educated than natives, in STEM foreign workers need the degree to compete;
  - migrants advantage has lessened over time, both in terms of education & pay (globalization).

- Lowell, tabulations of US Census data
Comparative college education: ratio immigrant to natives BS+, 1950-2009

Source: US Census microdata
Comparative earnings: ratio foreign to natives, 1950-2000

Source: US Census microdata
Are Immigrants uniquely Innovative?

- Do immigrants generate jobs, is the law of supply and demand old hat?

  - These data imply that a one percentage point rise in the share of immigrant college graduates in the population increases patents per capita by 6%. Hunt, 2008. “How much does Immigration Boost Innovation?”

  - We find that about 16% of the companies... had at least one foreign-born person among the founding team. This estimate is lower than that found in most previous studies. Hart et al., 2009. “High-tech Immigrant Entrepreneurship in the United States.”
Immigrant corporate leadership

- Are immigrants more likely than natives to run their own or manage high tech business?

- How many STEM workers need be admitted to find these stars?
Foreign-born share of owners, top management and STEM workers in ICT industries, USA 2005-2007

Foreign-born share of owners, top management and STEM workers in ICT industries, Silicon Valley 2005-2007

Source: ACS microdata.
PHILOSOPHIES OF ADMISSION

(1) Set large admission numbers & let the visa market self-regulate

Approach of Senate S.2611 and current round of reform
Assumes that STEM degree is a measure of quality
Assumes that employer sponsorship ensures quality

(2) Long-term strategies should target optimal numbers

A limited number of high quality workers are available abroad
High numbers can undermine domestic supply
High numbers may undermine the quality of foreign supply

(3) Long-term strategies should restrict numbers

The U.S. has an over-supply of highly skilled workers
Restricted supply of immigrants will boost wages & domestic supply
Domestic supply confers greatest competitive advantage