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Immigrants Play a Key Role in STEM Fields

Immigrants hold a disproportionate share of jobs in science, technology, engineering, and math (STEM) occupations in the United States, meaning that they are important for maintaining the nation's pre-eminence in advanced industries, according to a new study by [Gordon H. Hanson](#) and [Matthew J. Slaughter](#). Their results are reported in **High-Skilled Immigration and the Rise of STEM Occupations in U.S. Employment** (NBER Working Paper No. 22623).

In 2013, foreign-born workers accounted for 19.2 percent of STEM workers with a bachelor's degree, 40.7 percent of those with a master's degree, and more than half—54.5 percent—of those with a Ph.D. Most of the foreign-born workers with advanced degrees obtained those degrees in the U.S. After completing their schooling, they chose to remain in the country rather than return to their home countries. They are particularly prevalent in software programming and other computer-related jobs.

The authors compare the wages of native-born and immigrant men, a stan-

dard practice in the literature on this topic. Immigrants earn less than native-born workers across most occupations, even after

Immigrants account for more than half of all STEM workers with Ph.D.s and are especially prevalent in software programming and other computer-related jobs.

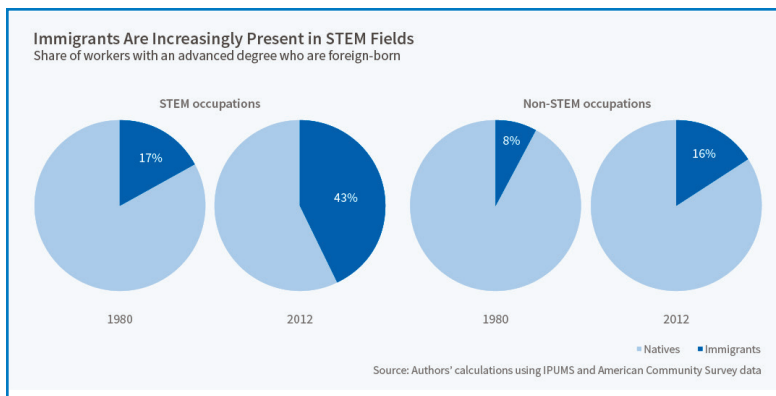
controlling for worker attributes such as age, education, and gender. But in STEM fields this pattern is weaker and may even reverse. In 1990, native-born STEM work-

ers who had been in the U.S. for less than five years earned on average 5.7 percent less than their native-born counterparts. However, immigrant STEM workers who had been in

the U.S. for at least six years earned more than their native-born counterparts. The researchers point out that these wage patterns cast doubt on concerns that visa programs like the H-1B program, which allows firms to bring skilled workers to the United States, have undercut the earnings of domestic work-

ers, at least in the STEM fields.

Immigration of STEM workers may be an important input to U.S. productivity growth. The researchers write that "In modern growth theory, the share of workers specialized in R&D plays a role in setting the pace of long-run growth.



ers earned more than immigrants both for those with advanced degrees and for those whose final degree was a bachelor's. In 2012, immigrant STEM workers earned more than their native counterparts.

The researchers also investigate how the wage gap between immigrant and

Because high-skilled immigrants are drawn to STEM fields, they are likely to be inputs into U.S. innovation.” The researchers point

out that an immigrant working in a STEM field is more likely to obtain a patent than a native-born worker in a similar field, and

is even more likely to get a patent that is commercialized.

— Laurent Belsie

Fed Strategies in the Great Depression and the Great Recession

Faced with economic contraction, deflation, and tanking markets, the Federal Reserve resorted to unorthodox means to lower interest rates and pump liquidity into the market.

Quantitative easing of 2008–09? No. That was U.S. monetary policy in 1932, as the central bank bought \$1 billion in Treasury securities over a period of two quarters and brought down interest rates dramatically. Had this policy remained in place for longer, or had the Fed adopted something like forward guidance, [Michael Bordo](#) and [Arunima Sinha](#) conclude that “the Great Contraction would have been attenuated significantly earlier.” In their new study, **A Lesson from the Great Depression That the Fed Might Have Learned: A Comparison of the 1932 Open Market Purchases with Quantitative Easing** (NBER Working Paper No. 22581), the researchers use the policy action in 1932 as a prism through which to analyze the effects of the Fed’s more recent quantitative easing (QE) policies.

The researchers observe some similarities between the economic circumstances of 1929–32 and 2008–09, though the magnitude of the problems differed greatly. Unemployment in both eras was high and rising by standards of the day (25 percent in 1932, 8.7 percent in March 2009) and the economy was contracting (down 20 percent in 1932, 4 percent in March 2009). In both periods, Treasury yields were historically low, and Congress and the public were eager for the

Fed to act. The size of the Fed’s intervention in 1932—bond purchases equal to about two percent of GDP, or \$16 billion in today’s dollars—was roughly proportionate (in

Unconventional policy tools employed by the central bank proved effective in both eras, though the tools were different.

terms of GDP) to the purchases of long-term Treasury securities in the first QE program, between November 2008 and March 2009.

difference from the situation in 2008–09, when the central bank delivered a drumbeat of communications as the Great Recession deepened. In 1932, the Fed’s portfolio was

more heavily concentrated in medium-term Treasury notes relative to bonds than it was in 2008–09. Financial markets were also much

more segmented than they were 80 years later. The segmentation was manifested in the fact that it was more difficult for households to access the markets for Treasury notes and bonds compared to institutional investors. This market segmentation meant that investors couldn’t easily substitute one type of government bond for another. Finally, the Fed used other unconventional policy tools in the 2008–09 period, such as the purchase of mortgage-backed securities, which it did not use in 1932.

Despite these differences, the researchers argue that the Fed’s Depression-era moves constitute an experiment in monetary policy that can be used to analyze the first QE program. Those moves allowed the Fed to engineer dramatic drops in interest rates in only two quarters. The interest rate on Treasury bills fell 90 basis points, yields on Treasury certificates and notes dropped 114 basis points, and Treasury bond rates declined 42 basis points.

The researchers simulate what might



There were some key differences, however. The U.S. was on the gold standard in 1932; in 2008 exchange rates floated freely. The Fed did not announce its 1932 intervention, nor did it give any indication of its duration or size. This was a significant

have happened in 1932 had the Fed announced the size and duration of its securities purchases ahead of time and held on to those securities for an additional two quarters before selling them off in the following two quarters. Under that scenario, output growth would have risen 0.5 percentage points. This exercise suggests that the Fed's 1932 purchases were effective in

reducing the risk premium for bond investors and thus bond yields.

Since the markets for Treasury securities today are far less segmented than they were in 1932, institutional investors are in a much better position to arbitrage away the difference between returns on long- and short-term bonds. As a result, the Fed in 2008–09 used other unconventional

tools, such as the issuance of forward guidance, to influence interest rates. In response to these Fed announcements, yields on 10-year government bonds fell 107 basis points during the period, by one measure, while five-year Treasury notes dropped 74 basis points, and one-year notes decreased 25 basis points.

—Laurent Belsie

Do Private Equity Funds Manipulate Reported Returns?

When it's time to raise money for a new fund, some private equity general partners (GPs) appear to manipulate the net asset value (NAV) of their current funds.

Some poor performers appear to overstate their NAVs, while funds at the top of the scale actually understate the net value of their funds, according to research by Gregory W. Brown, Oleg R. Gredil, and Steven N. Kaplan. They report these findings in **Do Private Equity Funds Manipulate Reported Returns?** (NBER Working Paper No. 22493). They also find that institutional investors usually see through the machinations.

“Overall, our results indicate that overstating interim returns has not been a winning strategy for GPs on average,” the researchers report. “While current fund performance impacts the odds of a successful fundraising, aggressive NAV marks are associated with a lower probability of raising a next fund. Consequently, GPs who are not underperforming should have an incentive to be truthful, or even conservative, with their unrealized investment valuations.”

When external investors, the limited partners, are considering committing capi-

tal to a new private equity fund, they do not know what investments the GPs will select and must rely on observable metrics, including the GPs' success in running cur-

rent funds, in making their decisions.

Using data on more than 200 investment programs, including pension funds,

ing fund's NAV while raising money for a new fund, then at some point that fund's performance will fall when investors cash out and discover the exaggeration. The

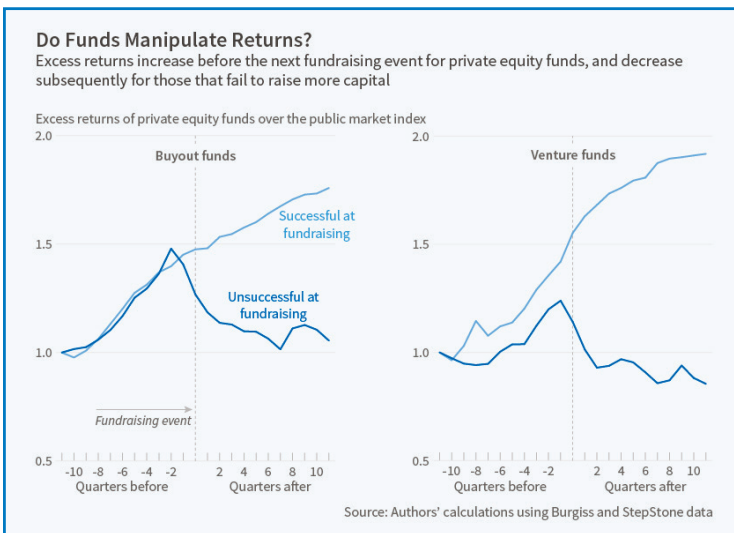
Underperformers may overstate interim returns, while high performers may be conservative in valuing their unrealized investment valuations.

researchers examine returns around the time a firm begins raising money for a new fund, or, absent a new fund, near the end of

the current fund's term, when, presumably, a GP would be considering the creation of a successor fund. They find that performance of average buyout and venture funds falls around these events. Then, they calculate the probability of fundraising success based on excess returns and distributions to investors. They find that during the period when GPs are making a final push to attract investors to a new fund, the excess returns of their current funds rise. These returns fall in the final years of the funds.

“This evidence is suggestive of attempts at manipulation that are not successful since investors are not willing to commit to a next fund,” the researchers say.

—Laurent Belsie



endowments, foundations, and institutional investors, as well as a database of 12,545 U.S. dollar-denominated private equity firms between 1969 and 2016, the researchers look for telltale biases in the funds' NAVs.

For example, if a GP inflates an exist-

Matchmaker, Matchmaker, Watch Out for... Who?

Those who have gone through the sometimes arduous mating ritual know that it's not always a case of romantic love at first sight. Some might even argue that the idea of a parental matchmaker intervening, as is common in some cultures to this day, might have its merits.

In Love, Money, and Parental Goods: Does Parental Matchmaking Matter? (NBER Working Paper No. 22586), Fali Huang, Ginger Zhe Jin, and Lixin Colin Xu provide new evidence on the consequences of such matchmaking. They find that parental involvement in matchmaking in China can lead to relationships that economically and emotionally favor the parents, not necessarily young couples. The income, independence, love, and marital bliss of those in parent-matched marriages can suffer as a result.

Cross-country patterns suggest that parents tend to meddle more in marriage arrangements if old-age care is not offered by society. In China, where the onus of old-age care usually falls upon a son and his wife, there is a long tradition of parents engaging in matchmaking marriages, particularly in rural areas.

The researchers studied the various financial and emotional trade-offs, both to parents and couples, of parental matchmaking by collecting and analyzing data from the Study of the Status of Contemporary Chinese Women, compiled by the Population Institute of the Chinese Academy of Social Science and

the Population Council of the United Nations in the early 1990s. The study included extensive interviews with thousands of married men and women from

Parental matchmaking in China often leads to relationships that economically and emotionally favor the parents relative to the young couples.

seven Chinese provinces.

The survey data reveal that 48 percent of rural couples and 14.5 percent of urban couples were married through parent-involved matchmaking, with the rest meeting and marrying either through their own searches or through friends.

parent-involved marriages are associated with more submissive wives, a greater number of children, a higher likelihood of having a male child, and a stronger belief of the

husband in providing old-age support to his parents. These marriages also display less marital harmony within the couples and lower market income of the wives.

Some parents put a higher altruistic premium on their adult children's love and harmony, while other parents are more focused on marriages that can provide them with adequate support in their old age and are particularly careful in how they network, screen, and nudge males and females into marriages. In the case of adult children, particularly males who are expected to provide care for their parents, they are often aware of the costs associated with parent-

involved marriages and can either choose to "self-search" or rely on parental help in searching for spouses, particularly if the time, effort, expenses, and emotional strain of self-searching is deemed too great or too risky.

The researchers conclude that parental matchmaking involves a trade-off: "On the one hand, it entails agency costs in terms of less love within the couple. On the other hand, it helps to ensure parental goods for the matchmaking parents, and a more harmonious inter-generational relationship."

—Jay Fitzgerald

Parental Matchmaking and Couple Outcomes

	Parent-matched	Self-matched
Number of children	1.9	1.5
Wife's years of schooling	5.7	8.2
Index of couple harmony	0.97	1.04

Source: Authors' calculations using the Study of the Status of Contemporary Chinese Women, not controlled for possible causes other than parental matchmaking

For rural couples, the lack of societal old-age and health care, as well as a lack of jobs and higher incomes, helped drive the tradition of parental matchmaking by both parents and their adult children. In contrast, urban couples, who lived in areas with more plentiful job opportunities, higher incomes, and societal welfare, relied less on parental matchmaking.

Boring down into the details of the extensive Study of the Status of Contemporary Chinese Women, the researchers extrapolate from the data that

Chicago's Experiment in Achieving Diversity in Elite Public Schools

In the wake of Supreme Court rulings frowning on race-based admissions policies, Chicago's elite public high schools switched to using the socioeconomic condition of prospective students' neighborhoods to achieve diversity in their student bodies. The approach reflects guidelines issued by the federal government following the court's rulings.

Researchers [Glenn Ellison](#) and [Parag A. Pathak](#) examined the new Chicago policy in part because it "is held up as a national model for achieving racial and ethnic diversity in selective public schools."

They found that, judged against race-based affirmative action programs, the neighborhood-based program imposed a substantial cost on academic credentials. Their research is presented in **The Efficiency of Race-Neutral Alternatives to Race-Based Affirmative Action: Evidence from Chicago's Exam Schools** (NBER Working Paper No. 22589).

In 2010, the highly competitive Chicago exam high schools switched from a system that capped the number of white students in each school to a system that based admissions in part on the socioeconomic status of the city's neighborhoods. Every census tract in the city was assigned to one of four tiers, each containing roughly the same number of school-age children.

In the 2013–14 school year—the year the researchers study—the index used to establish the tiers incorporated six factors: median family income, adult educational levels, average test scores at local

schools, and the percentages of home ownership, single-parent households, and non-English speakers.

Northside and Payton high schools,

Using neighborhood socioeconomic status rather than race to achieve racial diversity increases the academic 'cost' of promoting diversity.

on which the researchers focused, had the most rigorous admission criteria in the city. Admissions policies reserved the first 30 percent of slots for applicants who had achieved the highest composite scores, as derived from grades and the results of sev-

through the new system at greater sacrifice to academic standards than under racial quotas. The study found that even if all the slots were allocated under the tier process,

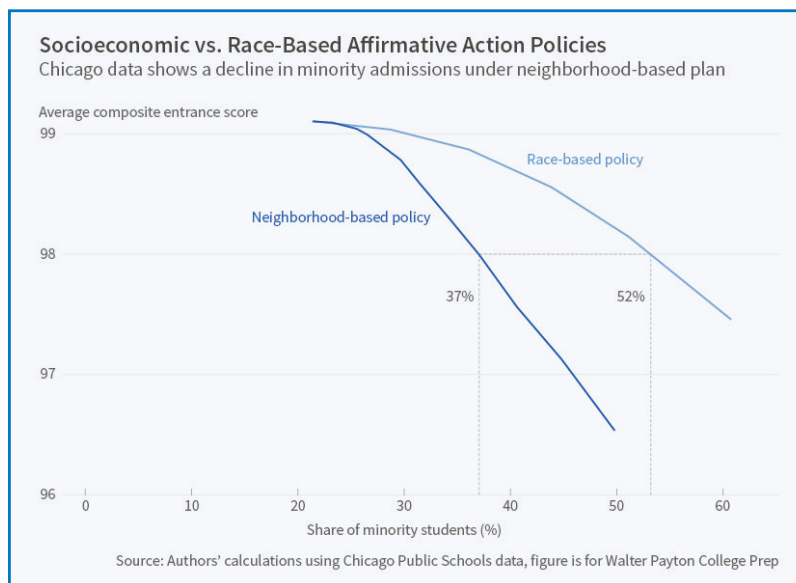
the two schools still would not obtain 50 percent minority representation. By contrast, a race-based plan would have cleared that bar while keeping average student composite scores at 98 on a scale of 0–100. The tier-based process also led to a larger academic gap between majority and minority students than did the race-based one.

The inefficiency of the neighborhood tier-based process was less pronounced at Payton—which is more centrally located and closer to heavily minority neighborhoods—than at Northside. But Payton still would have achieved much greater diversity under a racial quota system. The tier policy produced a class that was 37 percent minority

and had an average composite score of 98. By contrast, a race-based policy could have led to a class that was 52 percent minority with the same average composite score. The tier-based program also produced a less economically diverse class than would one using racial quotas, based on an analysis of students who received free or reduced-price lunches.

The researchers conclude that "eliminating race-consciousness in admissions comes at a cost."

— Steve Maas



eral tests. After that, slots were divided equally among the four tiers, going to the highest-scoring remaining students living in the census tracts assigned to each tier. Thus a lower-scoring student residing in a tier with few high-scoring students could be admitted over a higher-scoring student from a tier with overall stronger students.

The researchers found that higher-scoring students were more likely to be displaced under this race-neutral plan than would have been the case under the racial quota system. Diversity was achieved

Are Publicly Insured Children Less Likely to Be Hospitalized?

Children covered by private health insurance are more likely to be admitted to the hospital after a visit to the emergency room than children covered by a public health plan, such as Medicaid or the State Children's Health Insurance Program. This is the conclusion of [Diane Alexander](#) and [Janet Currie's](#) study, **Are Publicly Insured Children Less Likely to Be Admitted to Hospital Than the Privately Insured (and Does It Matter)?**

(NBER Working Paper No. 22542). The study is based on an analysis of the health records of all children between the ages of three months and 13 years treated at a New Jersey hospital emergency room between 2006 and 2012.

Hospitals typically are paid more per patient-day by private health insurance plans than by Medicaid or state health plans. This

creates an incentive for hospitals to allocate beds first to the privately insured, and then, after meeting private insurance demand, to those with public insurance.

The researchers recognize that there

may be differences between privately and publicly insured patients other than type of insurance that could explain the differential

Yes, but this may reflect excessive admission of those who are privately insured rather than under-admission of those who are publicly insured.

hospitalization rates. Therefore, they rely on exogenous variation in the demand for hospital beds generated by local swings in

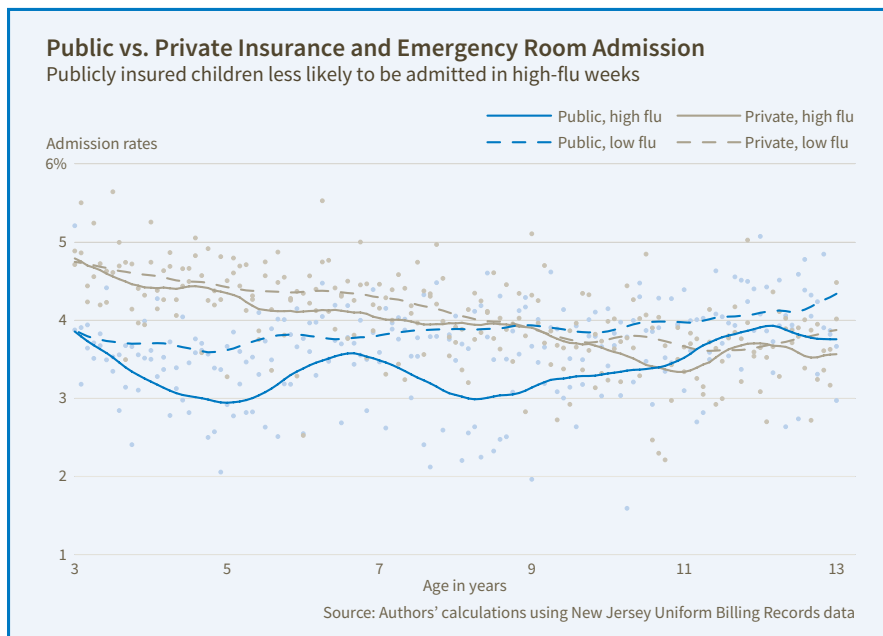
privately insured patients grows for both flu patients and all other diagnoses. These differences persist even after controlling for

detailed diagnostic categories, and when comparing publicly and privately insured patients at the same hospital.

Despite the differences in hospitalization rates, the researchers find no discernable differences in health outcomes, such as future hospitalizations or the likelihood of a repeat visit to the emergency room. They therefore conclude that "our results raise the possibility that instead of too few publicly insured children

being admitted during high flu weeks, there are too many publicly and privately insured children being admitted most of the time."

— Matt Nesvisky



the intensity of influenza outbreaks to separately identify the effects of hospital and patient behavior. When hospitals are overwhelmed with adult flu patients, the gap in admission rates between publicly and

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