

Foreign Tech Workers in the U.S.: Failures and Remedies

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ASEE Engineering Deans Council Conference

February 9, 2016
(updated February 11)

<http://heather.cs.ucdavis.edu/ASEESlides.pdf>

Table of Contents

- 1 Setting the Stage
- 2 Why Do Employers Hire Foreign Students Instead of Americans?
- 3 Employer Claims of Lots of Job Openings
- 4 Data
- 5 Remedies (and Non-Remedies)
- 6 Conclusions

Concrete Examples: “Dan” and “Ike”

- Can't view the data unless you understand the qualitative side.
- Two older Americans in Bay Area. “Dan” and “Ike.”
- Can't get full-time work. (Occasional contract work.)
- Dan has MS from Top 5 university; Ike has TWO MS degrees, from Top 10 university.
- Have up-to-date skillsets.
- Articulate, team players etc.
- Over 35.
- But my foreign students **apply to the same firms, and get jobs.**

Concrete Example: “Jim”

- Son of Chinese immigrant parents.
- BSEE, MSCS from UCD, mid-1990s.
- At “household name” engineering firm, his innovative work was written up in the *Wall Street Journal*.
- But was later caught in big layoff.
- Never got steady engineering work after that.
- Today working as a technician, e.g. installing office PCs.
- The field of engineering lost this highly innovative engineer.
- I’ve seen **many, many** Dans, Ikes and Jims.

Table of Contents

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Two Central Issues

- Saving on labor costs.
- Having immobile workers.

The Wage Factor

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Employer
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Remedies)

Conclusions

- Hard data, consistent with economic theory.
- On average, the foreign tech workers are paid less than *comparable* (age, education etc.) Americans. **This is across the board, not just the “Infosyses” but also the “Intels.”**
- **Young** foreign tech workers are paid *a lot* less than otherwise comparable **older** Americans (age 35+).

Note: Unless stated otherwise, *American* means U.S. citizens (native, naturalized) and permanent residents.

The Age Factor

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- Job opportunities poor for those over age 35. See studies by NRC, American University etc.
- *Wall Street Journal*, Feb. 4, 2016:
Pete Edwards, EE; age 53; experience with 3-D printing!; having big difficulties finding work.
- The bottom line: **Employers are hiring young foreign tech workers instead of older Americans.**

The Immobility Factor

- Employers don't want engineers to leave for another firm in the midst of an urgent project.
- D. Swaim, former architect of Texas Instruments' immigration policy, now in private practice:
 - hireF-1students.com
 - **Don't hire Americans**, because they can leave you any time.
 - **Instead, hire a foreign student** (and sponsor him/her for a green card), because they must stay 7-12 years.
- Google admits it.
- See also NRC report, congressional testimony.

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“Lots of Job Openings”

- Often vaporware.
- Most jobs open for new or recent grads only.
- CEO at panel discussion says desperate to hire. NM offers to have wife, a software engineer, apply, to check CEO's claim. CEO backpedals; “No, she's probably too expensive!” Indeed.
- Intel:
 - TV panel discussion, NM and Intel rep.
 - NM offers (twice) to send CVs to rep. She greets the offer with silence both times.

Table of Contents

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Data Showing the Problems

- Hard data, consistent with economic theory.
- Supplemented with numerous interviews of CEOs, managers, HR people and recruiters, as well as engineers and programmers across the country.
- Various data sources: NRC, GAO, NCSG/NSF, BLS, NACE, etc.
- Easy to lie with data; even easier to **innocently misunderstand** — Ptolemy's epicycles.
- But I have a “statistical license.” :-) And I know how engineers are educated, hired and employed. No epicycles. :-)
- Key factors include: age, education, job type, **geographic region**.

Some Findings

- H-1B tech workers earn less than comparable Americans (Hunt, 2011; Matloff, 2012).
- Employers admit that they pay H-1Bs less than comparable Americans (NRC, 2001; GAO, 2011).
- Immigrants suppress the wages of U.S. PhDs (Borjas, 2006). (Correctly forecast by NSF, 1989.)
- Older tech workers have much more trouble finding jobs (NRC, 2001; Brown, 1998 and Brown, 2009).
- Brown (UCB Econ) attributes this to the influx of young foreign students.
- Foreign workers experience a big spike in earnings when they receive their green cards and become free agents (Mukhopadhyay, 2012).
- No STEM labor shortage, including in CS (Salzman, 2013; Costa, 2012).
- Wages essentially flat, both generally (BLS) and for new grads (NACE).

Quality of the Foreign Workers

The average quality of the former foreign students now in the U.S. workforce is substantially lower than that of U.S. natives (Bound, 2009; Hunt, 2011; Matloff, 2013).

Compared to U.S. natives of the same age, education etc., the former foreign students

- are less likely to file patents;
- are less likely to be in R&D;
- if they earn a doctorate, then on average it is at a less-selective university

Given the indirect and direct displacement of Americans, this says **we are replacing more-talented people with workers of lesser talent** — an alarming situation for our national economy etc.

Quality Examples

- “Ike” was rejected for a job in a group in which the workers (a) all were recent foreign students and (b) all came from very “ordinary” schools, e.g. University of Cincinnati. Good workers, surely, but likely not “the best and the brightest” — and probably not as good as Ike.
- A 2009 *Washington Post* column highlighted a worker from India hired by Microsoft, with an MS from the University of North Texas, and working in Quality Assurance. So, likely a person of ordinary talent, doing ordinary work — hardly supporting the column’s claim that the foreign workers are “the seeds of tomorrow’s innovation.”
- The same column profiled another student from India, with an MS from UVa, hired by TI as a test engineer — again, hardly consistent with the “innovation” claim.

Pro-Industry “Research”

- Most research with findings favorable to the industry are by researchers with financial ties to the industry (e.g. Zavodny “Each H-1B creates 2.62 jobs”), Peri, the Brookings people).
- Much of this research cuts ethical corners, e.g. Zavodny paper.
- Bias is clear: Most bibliographies have NO citations to research counter to their goal.
- Common flaw: Failure to look at per-capita rates, e.g. in patenting and entrepreneurship.

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Remedies

- Industry claims the H-1Bs are either brilliant or possess rare skills.
- So, require employers to pay more. Set the legal wage floor for foreign workers at Level IV (67th percentile).
- Ban ageist practices, e.g. auto rejection of experienced U.S. workers.
- Have OPT revert to the original 12-month “training” period.
- Broaden the “best and brightest” categories (O-1 work visa, National Interest Waiver for green cards).

NON-Remedies

- Do NOT add funds for enforcement. Most abuse is LEGAL.
- Do NOT just ban *replacing* Americans by H-1Bs; ban hiring H-1Bs *instead of* Americans.
- Do NOT enact “Staple a Green Card.” (Auto green cards to foreign STEM grad students.)

Just Say No to Staple-a-Green-Card

- Most new grads are YOUNG. So, would exacerbate the already-awful age issue.
- Would reduce PhD production.
- NSF (1989): Staple-a-Green-Card would drive Americans away from grad study.

1989 Internal NSF Report

See E. Weinstein, NBER, 1998. (Quotes paraphrased.)

- “Need to hold down STEM wages.”
- “Do this by flooding market with foreign students.”
- “Attract the foreign students with Staple-a-Green-Card.”
- “Stagnant wages will **discourage Americans from pursuing graduate study.**”
- Happened anyway due to big influx of foreign students after H-1B enacted in 1990.
 - Salary premium for MS over BS only \$10-15,000 (ASEE *Prism*, January 2016). Financial disincentive for domestic students considering grad school!
 - As NSF predicted, many PhD and even MS programs now 50% foreign or more.
- Would be even worse with SAGC.

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The Bottom Line

- Thanks to ASEE for inviting me.
- I hope to challenge your unquestioned assumptions about foreign students and the tech job market.

- I leave you with this question:

Do we want foreign-worker programs that discourage Americans from going to grad school?

- These slides available at
<http://heather.cs.ucdavis.edu/ASEESlides.pdf>