

SKILLS DEMANDS, SHORTAGES (?), AND PUBLIC POLICY FOR THE MANUFACTURING WORKFORCE

Paul Osterman

NTU Professor

MIT Sloan School

Joint with Andrew Weaver, PhD student, MIT Sloan School

THE QUESTIONS WE ASKED

What are the skill needs of manufacturers? Are these rising so rapidly that they are out of reach without extensive education?

Are manufacturing firms experiencing serious difficulties obtaining workers with good skills? Is this holding back growth and profits?

What policies are appropriate?

WHAT WE DID

- Interviewed firms throughout the country
- Surveyed a large nationally representative sample of manufacturing establishments. Extensive questions on skills, hiring, competitive strategy, and human resource practices.

We think the survey is unique in its coverage
- Visited community colleges, high schools, and labor market intermediaries

THE SURVEY

Many questions were asked about the entire establishment but skill, hiring, training, and vacancy questions were directed at the group of production workers most central to the establishment's manufacturing process.

Questions were fact based and concrete. Opinion questions were also asked but we tried to be as factual as possible.

THE PERCENT OF ESTABLISHMENTS
DEMANDING SPECIFIC SKILLS AND
CAPACITIES.....

	ALL ESTABLISHMENTS	HIGH TECHNOLOGY ESTABLISHMENTS
Skill demands growing	41%	45%
Basic Reading	76%	88%**
Basic Writing	60%	62%
Basic Math	73%	75%
At least some computer	73%	81%**
Teams and cooperation	62%	64%
Some advanced math	38%	35%
Some advanced reading	53%	76%**
Some advanced computer	42%	49%**
Ability to keep learning	50%	53%

IT'S NOT ROCKET SCIENCE

A bundle of at least one advanced math, at least one advanced reading, and every day computer

all = 17%

high tech = 22%

And the “advanced” attainments are well within community college levels

For example breaking down “advanced math”:

algebra/geometry/trig 31%

probability/statistics 13%

calculus 7%

SHORTAGES

There has been a great deal of concern about shortages and mismatch.

But consider:

- Millions of former manufacturing employees are still unemployed
- Wages have not risen as one would expect if there was a shortage

IN GENERAL LABOR SUPPLY AND HIRING NOT A PROBLEM

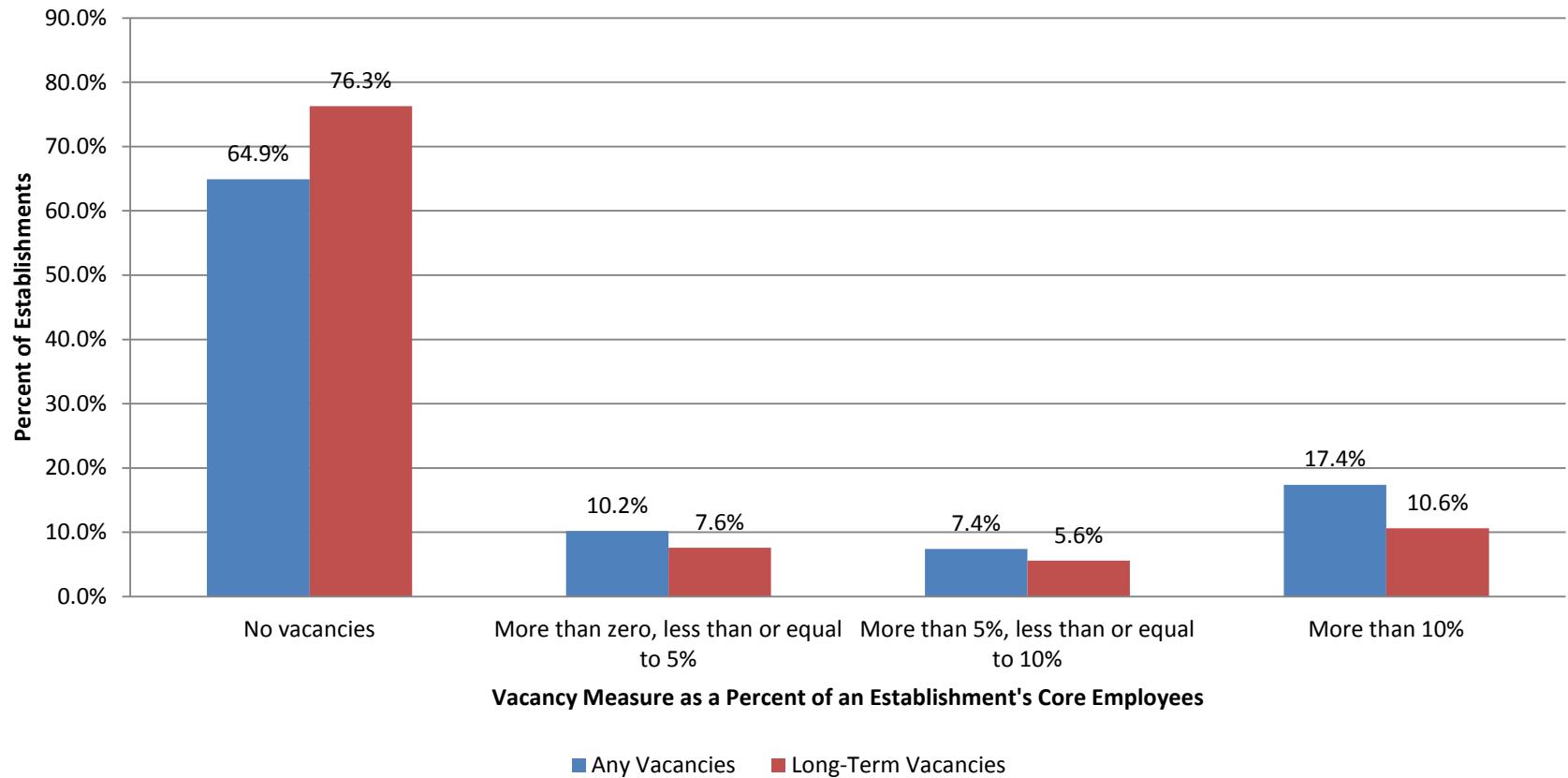
- In our survey median time to identify a candidate is four weeks
- Once a candidate identified hiring success rate is 85 percent.

But.....

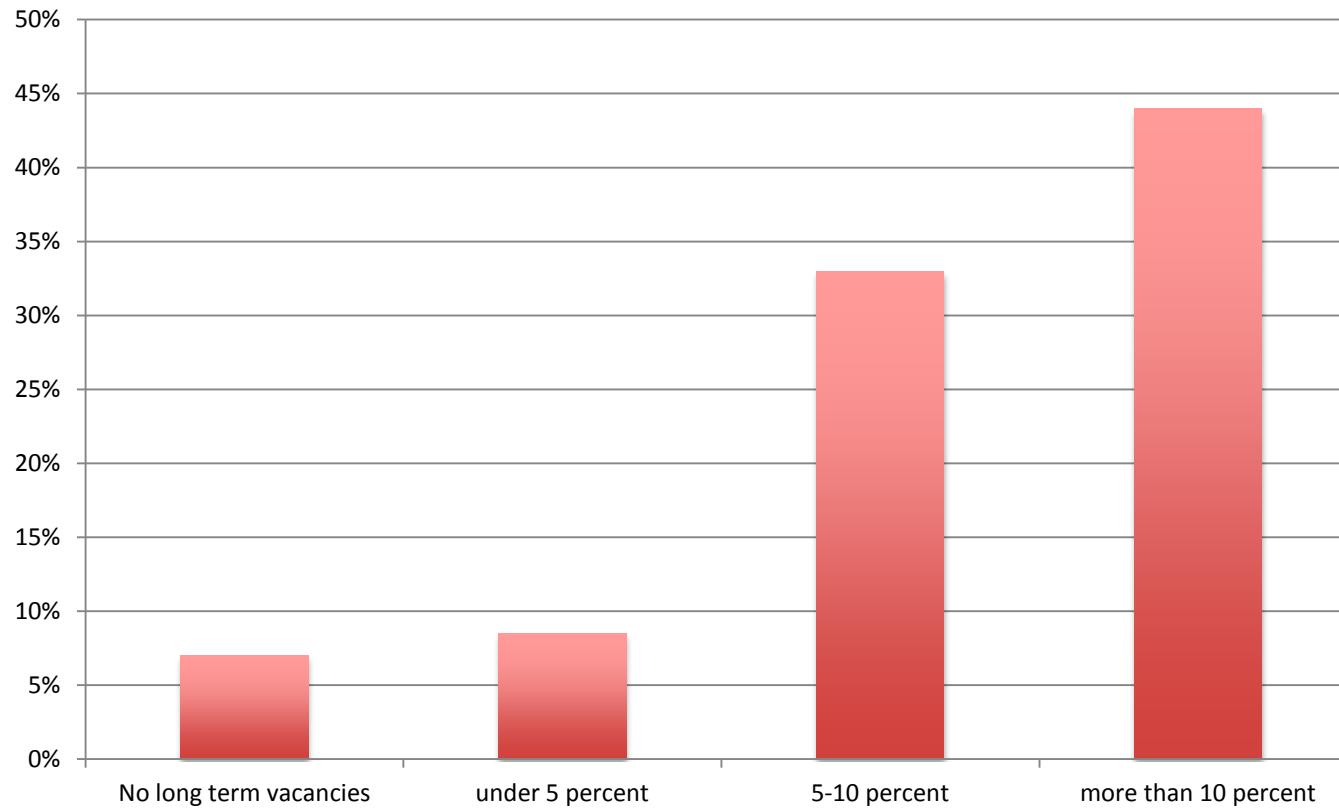
- there is still much talk of shortages, including in our interviews, and so it is worth investigating
- We asked a series of concrete fact-based questions about long term (3 months) unfilled vacancies

VACANCIES AS PERCENTAGE OF ESTABLISHMENT EMPLOYMENT

Figure 1. Vacancies



PERCENT SAYING THAT LACK OF ACCESS TO SKILLED WORKERS IS A MAJOR OBSTACLE TO FINANCIAL SUCCESS (BY EXTENT OF LONG TERM VACANCIES)



EMPLOYERS' VIEW OF THE MOST IMPORTANT EXPLANATION FOR LONG TERM VACANCIES

Candidates lack general skills	7.1%	
Candidates lack job specific skills	42.7%	
Candidates fail drug test	2.2%	
Poor attitude/character	2.2%	
Poor interpersonal skills	2.3%	
Insufficient resources for recruiting	7.9%	
Wages not attractive	14.0%	
Working conditions difficult	0.5%	
Too few candidates apply	6.8%	

Note overwhelming importance of skills and much weaker role for character issues

CONCLUSION ABOUT SHORTAGES

In general labor shortages and mismatch is not a problem. But there is a sub-set of establishments—perhaps 25 percent—for whom it is.

What can we say about these establishments?
What distinguishes them?

BIG PICTURE

Change in national skill production system

- decreasing firm size
- shorter job tenures
- weakening of HR function
 - = less internal training

Increased reliance on external training

- yet connections are weak and inconsistent

POLICY

Key role for intermediaries

Improving community colleges

Making manufacturing work more secure

What firm's need to do

OUR SURVEY: GOOD NEWS AND BAD NEWS FOR COMMUNITY COLLEGES

- 24% of establishments use CCs for training employees
- Use varies strongly with establishment size. Smaller establishments make are much less likely to use CCs for training
- Among those who use them 89% find CCs helpful
- Three quarters find general academic skills of students good and half feel that way about student's job specific skills
- Over half of all establishments feel CCs do a poor job of communicating with industry

THE BOTTOM LINE

Skill demands have risen modestly and at a pace that make most jobs accessible to most people

Three quarters of establishments are able to find the workforce they need but a significant minority is having difficulty. The retirement wave could exacerbate this.

Effective policies and institutions exist to address this problem but they are scattered and not well supported.