Middle-Skill Workers in Today's Labor Market

Symposium on the Supply Chain for Middle-Skill Jobs: Education, Training, and Certification Pathways

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Motivation

Shifts in the Supply of and Demand for Skill

Motivation

Why should we be concerned about the labor market for middle-skill workers?

- Some point to a current or future **"shortage"** of labor in the U.S. arising from slower population growth and an older workforce that is retiring.

- Others point to a potential **"mismatch"** between worker skill levels and the skills demanded by employers arising from structural changes in the economy as we shift away from manufacturing towards more knowledge based industries.

- Bottom line: we need not only a ***sufficient number*** of workers but also a workforce with the ***right mix of skills*** to meet the needs of the nation's economy.

Motivation

How should we think about labor market imbalances for middle-skill workers?

- In the press, the terms "labor shortage" and "skills mismatch" are often used to describe situations that reflect tight labor market conditions but not actual shortages or mismatches.

- In economics, the most widely used definition identifies such imbalances in a dynamic sense as occurring "when the number of workers available (the supply) increases less rapidly than the number demanded at the salaries paid in the recent past."

- Yet, under some conditions, an imbalance between labor supply and demand may persist for long periods of time.

Motivation

What are the key policy questions?

- How has the **skill mix** of the U.S. workforce changed during the Great Recession in comparison to that demanded by employers?

- What are the **labor supply constraints** that the nation will likely face in the future? How will this compare to the mix of skills associated with projections of employment over the coming decade?

- What role can **public policy** play in addressing the potential gaps in the nation's labor force over the coming decade?

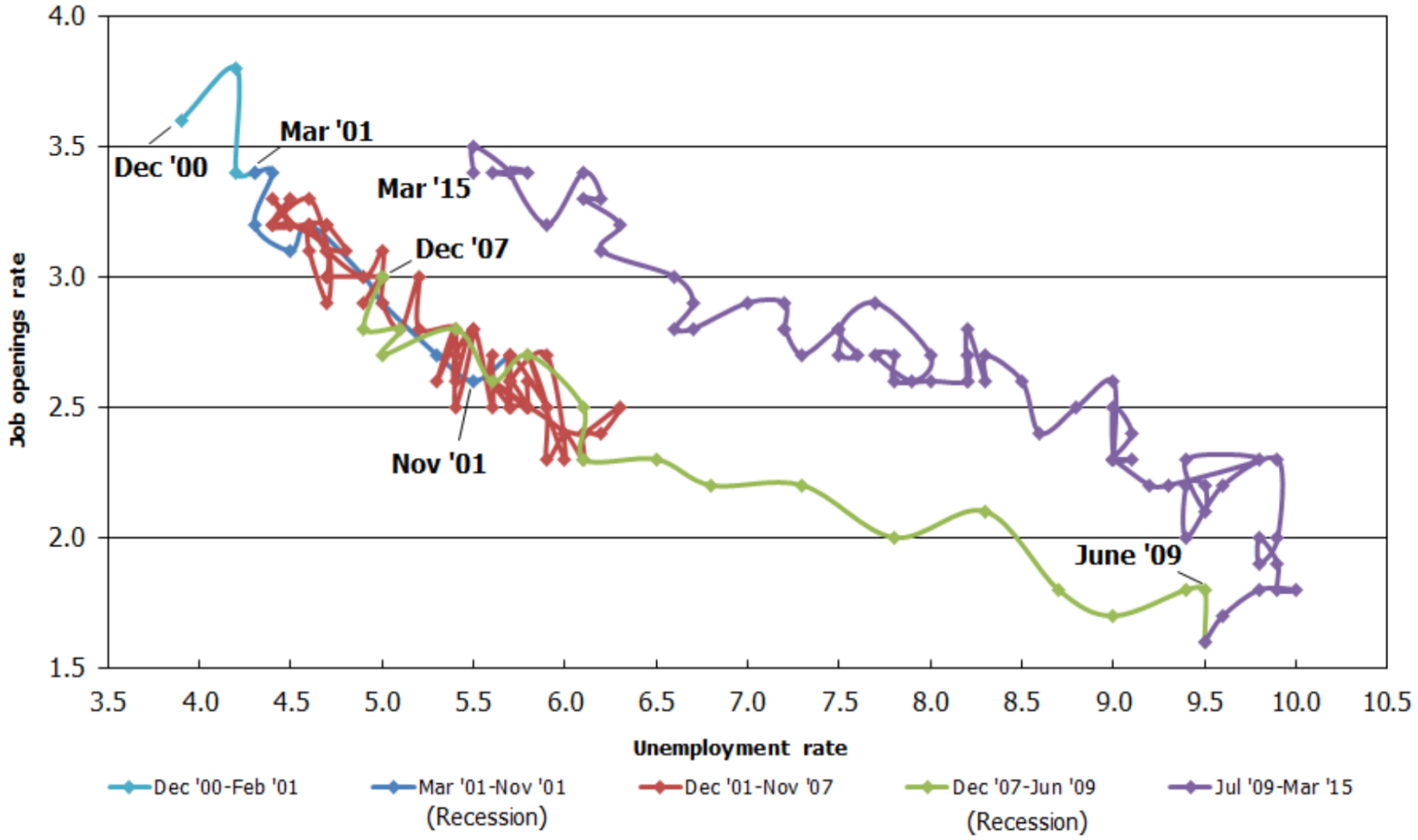
Existing Evidence

Academic versus Employer Perspectives

Existing Evidence

The upward shift in the Beveridge curve started a debate regarding the nature of unemployment in the U.S. as some have interpreted it as a deterioration in the matching or hiring process in the economy.

Figure 1. The Beveridge Curve: Job Openings versus Unemployment Rate (seasonally adjusted)



Source: Bureau of Labor Statistics, Current Population Survey and Job Openings and Labor Turnover Survey, May 12, 2015.

Existing Evidence

The academic literature largely finds a limited role for structural labor market mismatch relative to cyclical factors associated with the Great Recession.

- Comparing U/V ratios across industries over time, economists estimate that between one-third and one-half of the increase in unemployment during the Great Recession can be attributed to structural factors related to labor market mismatch (Sahin et al 2015, Canon, Chen, and Marifian 2013).

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  - Limitations: use highly aggregated data, unable to clearly determine mechanisms, can reflect factors other than mismatch (e.g. recruitment intensity)

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- Comparing S/D ratios by industry over time, economists find that structural mismatch may account for 20 to 30 percent of the rise in unemployment during the Great Recession (Rothwell 2012; Carnevale, Smith, and Strohl 2012; Manyika et al. 2011, Estevau and Tsounta 2011).

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  - Limitations: use education as a proxy for skill, unable to account for heterogeneity of skill within education levels

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- Data on wages and vacancies that suggest possible imbalances within narrowly-defined occupations and/or regional labor market areas appear to be temporary in nature (Rothstein 2012), driven by supply-side conditions (Modestino et al 2015, Beaudry et al 2013) or exaggerated (Capelli 2014).

Existing Evidence

Employer surveys and industry reports highlight potential labor market mismatches within certain sectors of the economy, particularly in manufacturing, healthcare, and construction.

Deloitte Consulting

Boiling point?
The skills gap in U.S. manufacturing

BOEING

"US manufacturing sees shortage of skilled factory workers."
The Washington Post

"Shortage of Skilled Workers Ripples Across Housing Market."
THE WALL STREET JOURNAL.

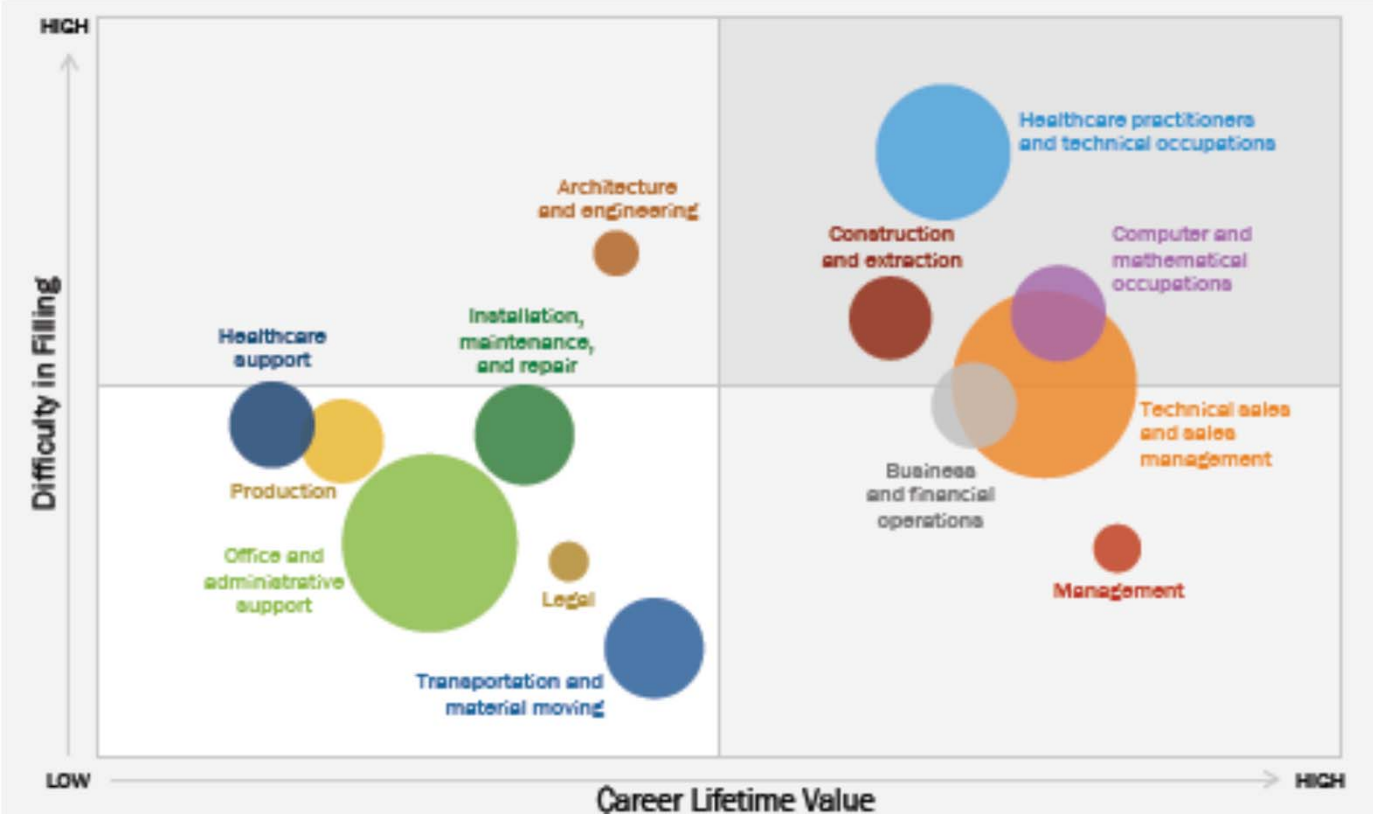
Boston Children's Hospital
Until every child is well™

"Companies Say 3 Million Unfilled Positions in Skill Crisis."
BloombergBusiness

Existing Evidence

Consulting studies report that vacancies in healthcare practitioners and technical workers, computer and mathematical positions, and technical sales and sales management positions were the most difficult to fill.

Hard-to-Fill Middle-Skills Occupation Group Analysis
National View, 2013



Source: Accenture, Burning Glass Technologies, Harvard Business School. 2014. "Bridge the Gap."
Notes: Bureau of Labor Statistics, 2013 Occupational Employment Statistics dataset; Burning Glass Technologies' database of online job postings for 2013. The number of construction and extraction jobs is an estimate.

Existing Evidence

How can we reconcile the academic literature with the evidence presented by employer surveys and industry reports?

- Conceptual: Economists think of skills as being quite portable with the exception of firm-specific human capital. Yet jobs have become more specialized over time such that training in even a detailed occupation does not mean that all jobs in that category are open to you.

Medical Records Coder
Medical Records Coding is responsible for managing and coordinating the medical records staff involved in coding and abstracting diagnosis, treatments and other information from patient records. The manager is the primary coding and documentation consultant, and an ongoing resource to the leadership, physicians, non physician providers, and the Compliance department.

Job Requirements

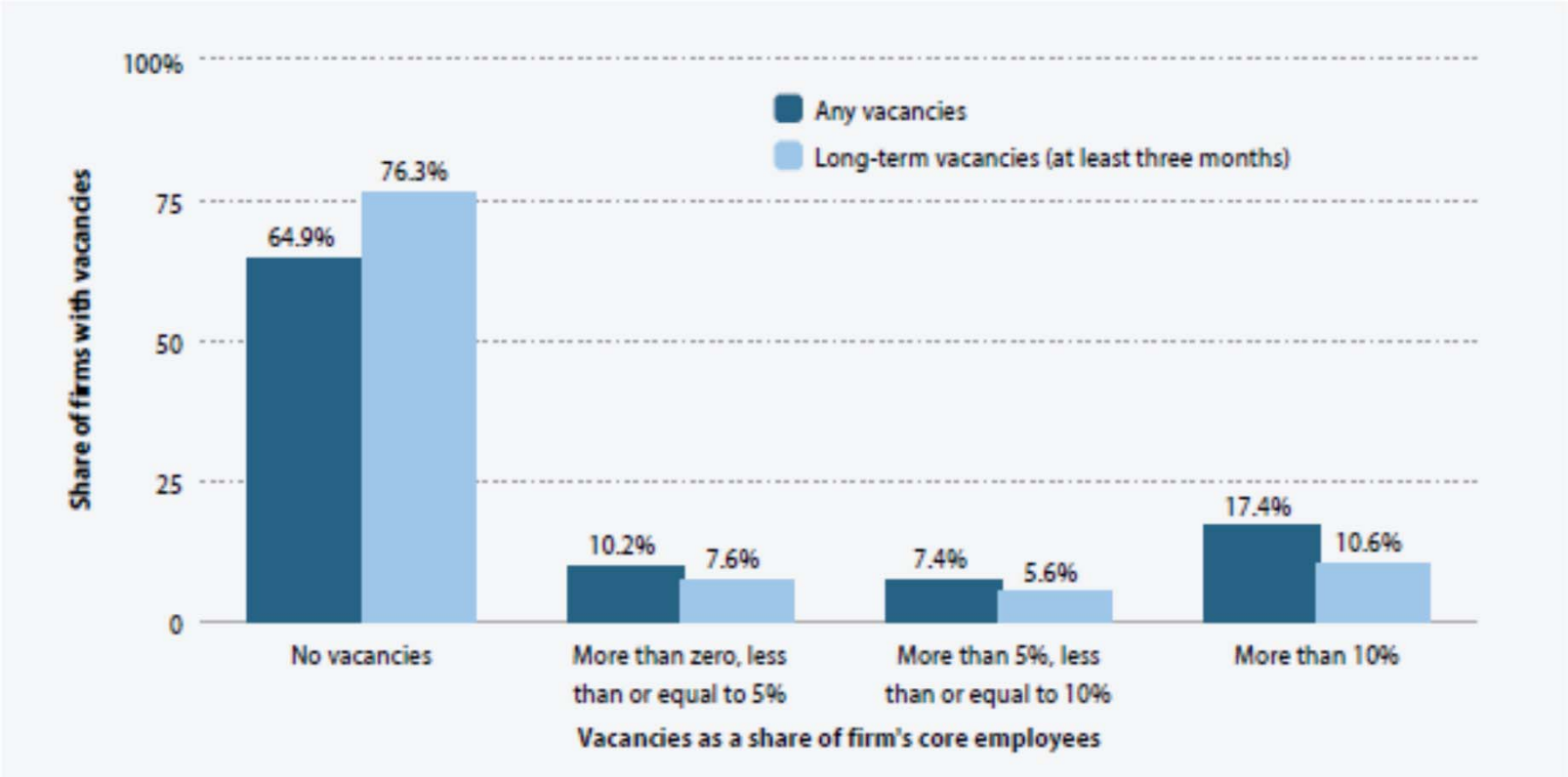
- Must be certified as an AHIMA Certified Coding Specialist (CCS).
- Bachelors' degree in Medical Record Technology, Health Services Administration, Nursing or Finance/Business.
- Five years coding experience.
- Thorough knowledge of coding practices and official guidelines, HCPCS, ICD and CPT codes.
- Experience using electronic medical record/health record systems such as Cerner, EPIC or other comparable systems desired.
- Demonstrated auditing skills for coding quality and compliance.
- Strong interpersonal and analytical skills.

Existing Evidence

How can we reconcile the academic literature with the evidence presented by employer surveys and industry reports?

- Representation: The employers responding to the surveys are the "squeaky wheels" of the labor market and do not represent the experience of the average firm.

Employee vacancies among U.S. manufacturing firms



Source: MIT's Production in the Innovation Economy (PIE) Manufacturing Survey (2012–2013) as reported in Osterman and Weaver. 2014. "WHY CLAIMS OF SKILLS SHORTAGES IN MANUFACTURING ARE OVERBLOWN." EPI Issue Brief #376.

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- Representation: The employers responding to the surveys are the "squeaky wheels" of the labor market and do not represent the experience of the average firm.

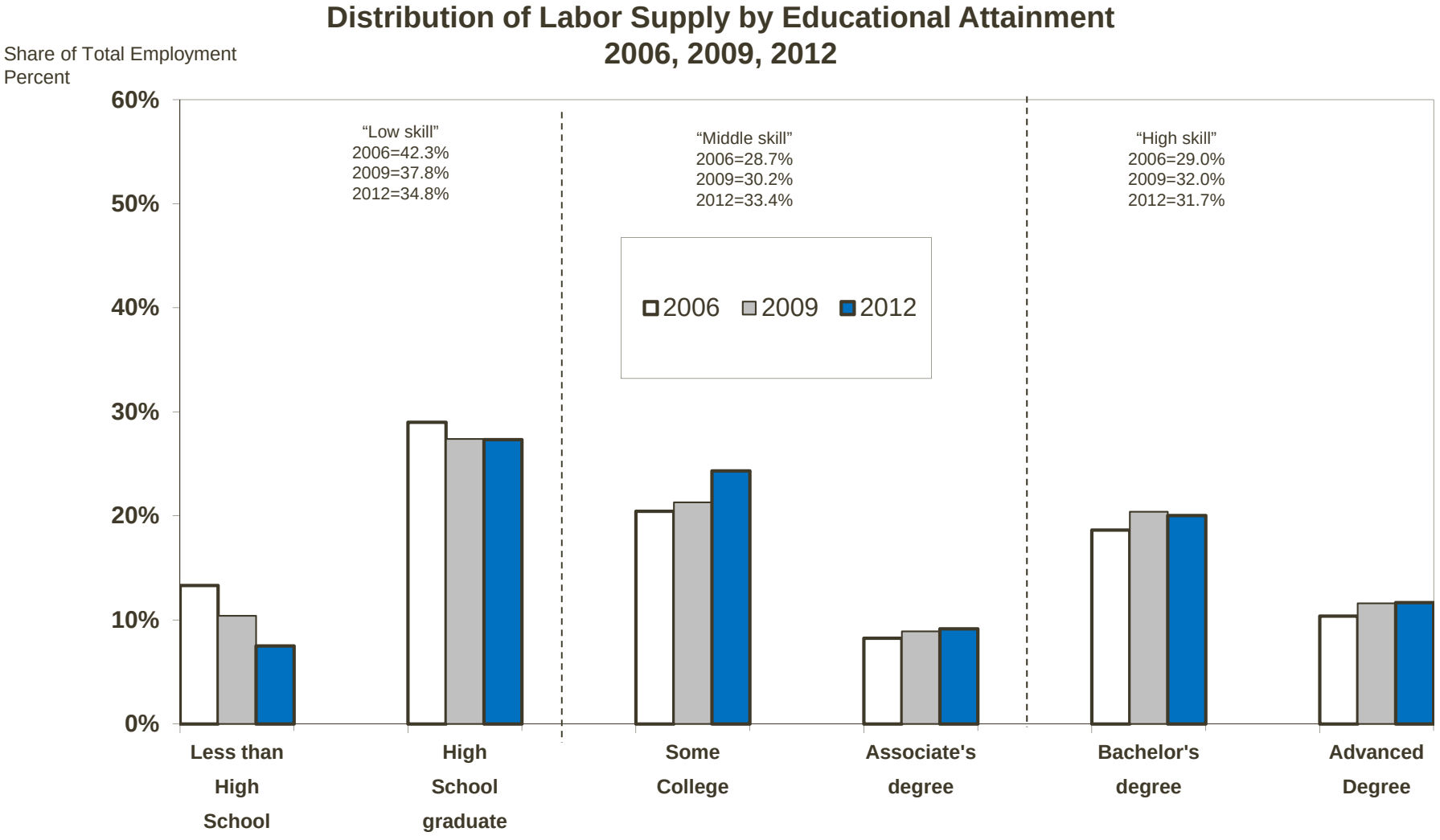
- Coordination: there may not be an actual skills mismatch but rather a coordination problem to solve between employers and workers regarding the necessary skill set.

Current Data

Supply/Demand Measures

Current Data

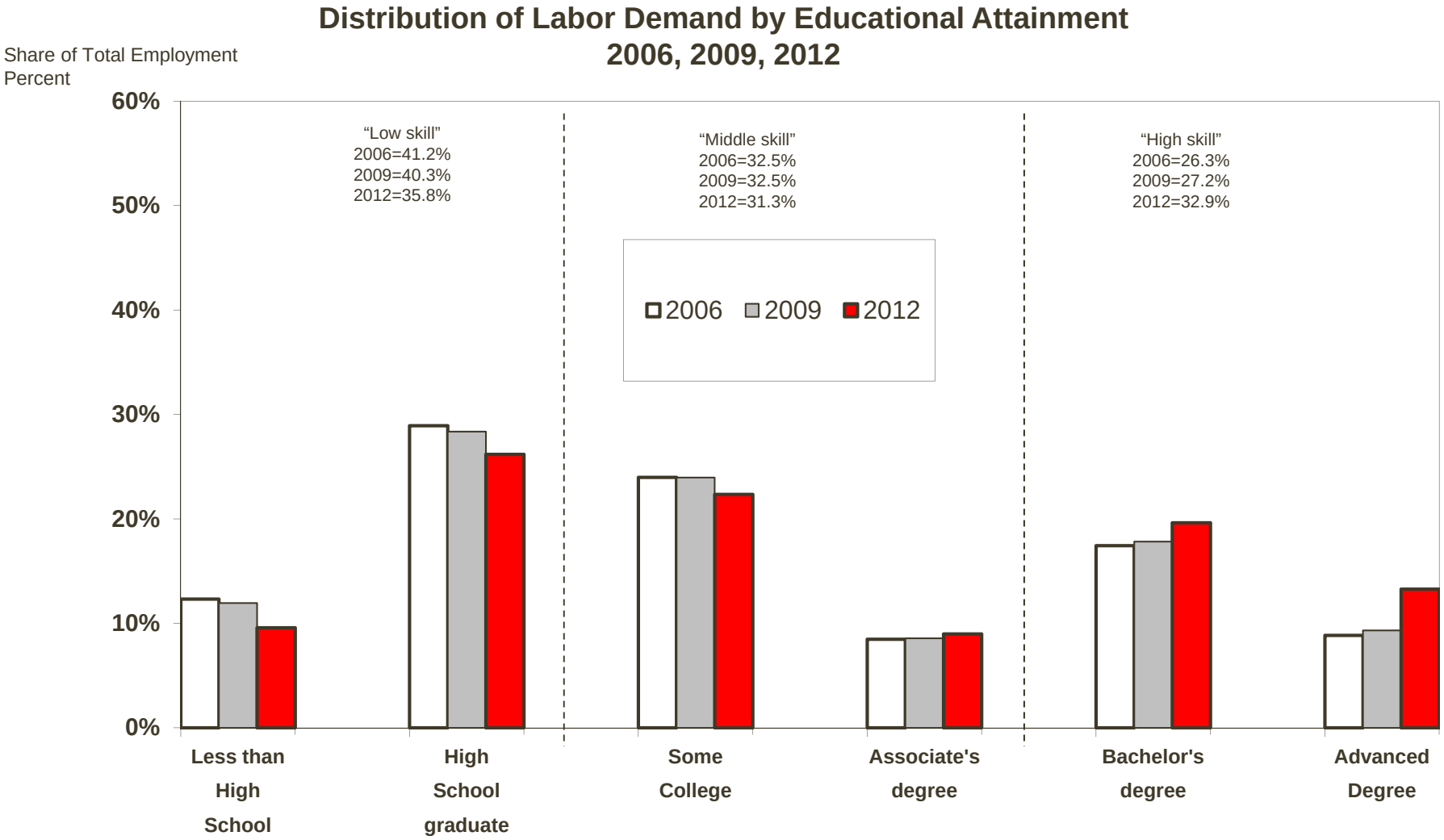
The share of middle-skill workers has increased steadily since 2006, while the share of low-skill workers has decreased.



Source: Author's calculations based on the educational attainment of the resident population using the 3-Year combined American Community Survey,

Current Data

Labor demand appears to have decreased for low-skill jobs, increased for high-skill jobs, and held steady in the middle.

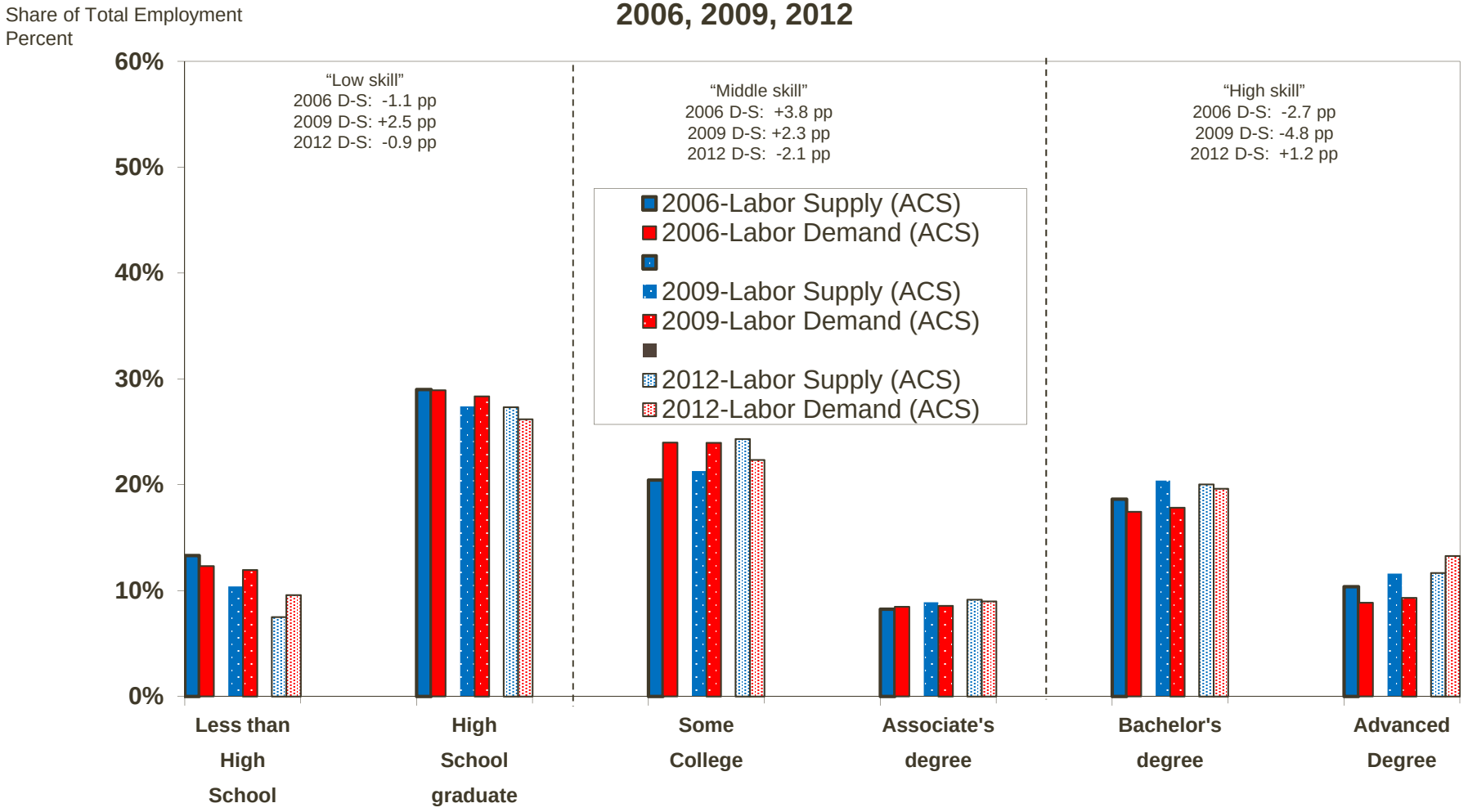


Source: Author's calculations based on total demand equal to employment by detailed occupations for 2012 reported by the Bureau of Labor Statistics plus vacancies reported by Burning Glass Technologies. Total demand is categorized by skill level using educational attainment as calculated from the 3-year 2012 American Community Survey. See the data appendix for more details on the methodology.

Current Data

Prior to the Great Recession, there appeared to be a potential mismatch in the middle of the labor market that has since abated.

Distribution of Labor Demand versus Labor Supply by Educational Attainment
2006, 2009, 2012



Source: Author's calculations. See the previous two slides for details of labor supply and demand calculations.

Current Data

Major occupation groups with persistently high vacancy rates both before and after the Great Recession employ a high share of middle-skill workers.

	2006		2012		2012
Major Occupation Group	Vacancy rate	Vacancy Share	Vacancy rate	Vacancy Share	Share of Workers that are Middle-Skill
Computer and mathematical science occupations	17.3%	14%	18.6%	17%	27.7%
Management occupations	9.0%	14%	8.5%	14%	28.4%
Architecture and engineering occupations	7.7%	5%	10.4%	5%	27.4%
Healthcare practitioners and technical occupations	6.6%	12%	6.9%	10%	38.3%
Life, physical, and social science occupations	6.3%	2%	8.5%	2%	13.5%
Business and financial operations occupations	5.0%	8%	7.9%	10%	26.1%
Arts, design, entertainment, sports, and media	4.7%	2%	5.3%	2%	27.1%
Legal occupations	2.7%	1%	5.4%	1%	15.6%
Sales and related occupations	2.7%	10%	4.1%	11%	34.9%
Community and social services occupations	2.5%	1%	4.0%	2%	21.3%
Office and administrative support occupations	2.1%	13%	2.9%	11%	44.5%
Healthcare support occupations	2.0%	2%	2.2%	2%	47.7%
Installation, maintenance, and repair occupations	2.0%	3%	2.8%	3%	38.8%
Transportation and material moving occupations	1.4%	3%	1.3%	2%	27.4%
Personal care and service occupations	1.4%	1%	1.2%	1%	37.0%
Construction and extraction occupations	1.1%	2%	0.5%	1%	26.7%
Production occupations	1.1%	3%	1.7%	2%	28.0%
Farming, fishing, and forestry occupations	1.0%	0%	0.3%	0%	13.9%
Protective service occupations	0.9%	1%	2.0%	1%	47.0%
Building and grounds cleaning and maintenance	0.8%	1%	0.6%	1%	21.5%
Food preparation and serving related occupations	0.8%	2%	0.7%	1%	28.9%
Education, training, and library occupations	0.7%	2%	1.9%	3%	16.3%
Total	**2.9%**		**4.0%**		**31.3%**

Current Data

Detailed occupations that employ a greater share of middle- and high-skill workers had higher vacancy rates in both 2006 and 2012.

Vacancy rates versus share of workers with any college degree
Detailed occupations with "critical" vacancy rates

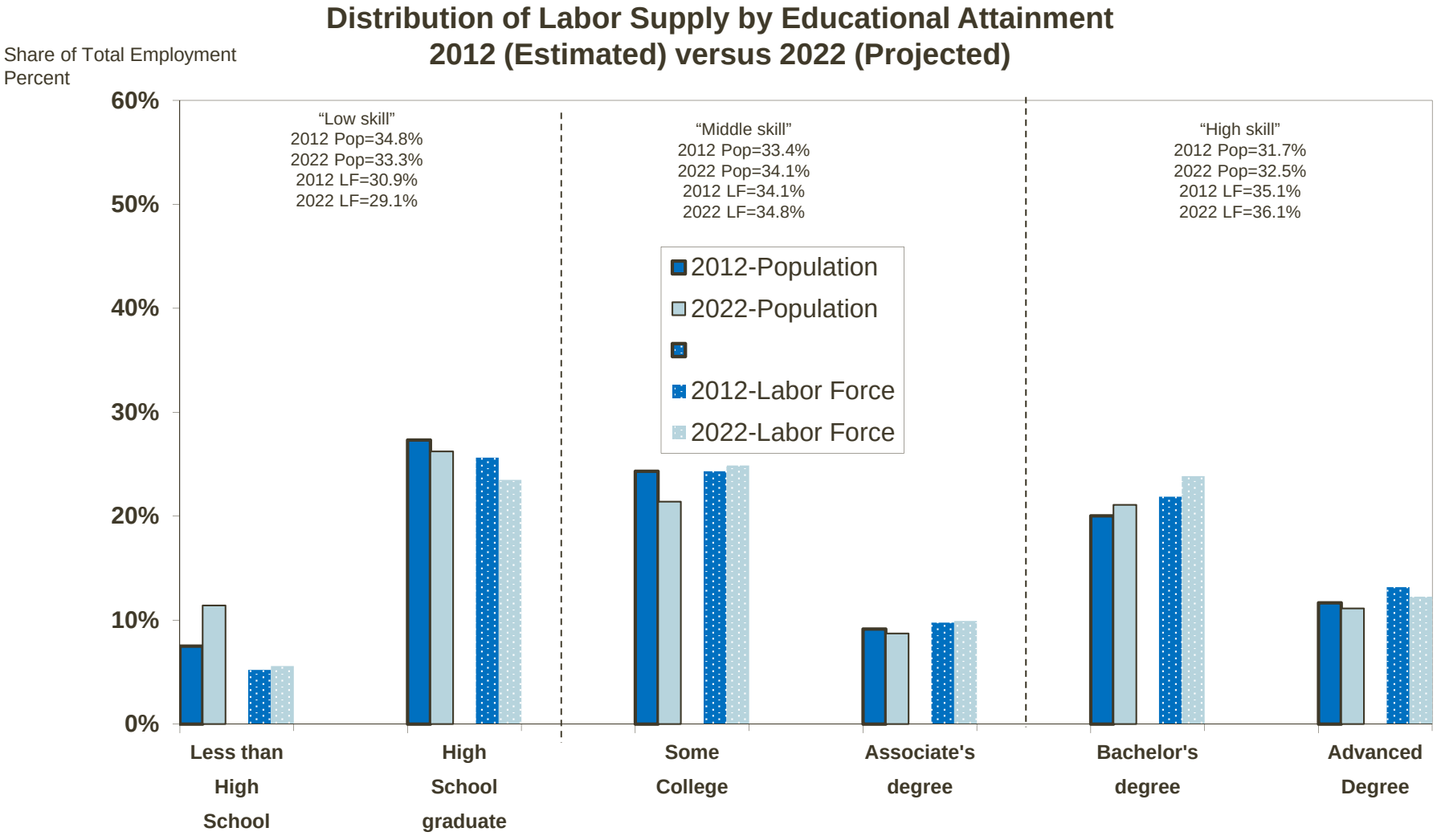
Source: Vacancy rates are the author's calculations based on vacancies reported by the Help Wanted Online Survey from the Conference Board (2006) and Burning Glass Technologies (2012). The share of workers with any college degree are the author's calculations using the 3-Year combined American Community Survey. Occupations with "critical" vacancies as evidenced by having both a higher than average vacancy rate and vacancy share in the respective year.

Future Projections

Population and Employment

Future Projections

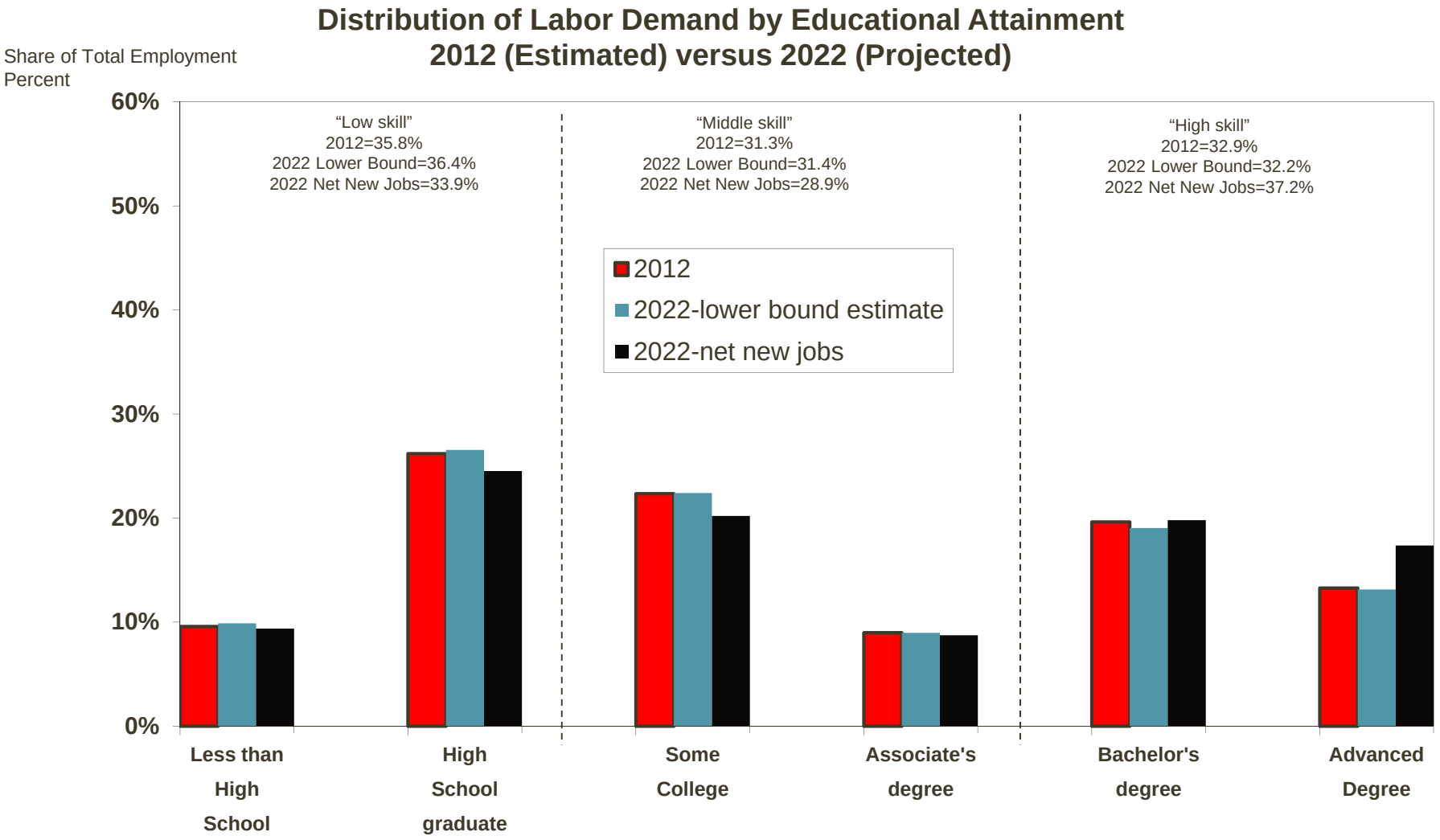
Projected labor supply suggests that the share of middle-skill workers will hold steady while that of high-skill workers will increase slightly.



Source: Author's projections of labor supply using a cohort component model . See data appendix for details.

Future Projections

Projected labor demand suggests that a greater share of net new jobs due to growth and replacement will be high-skill.



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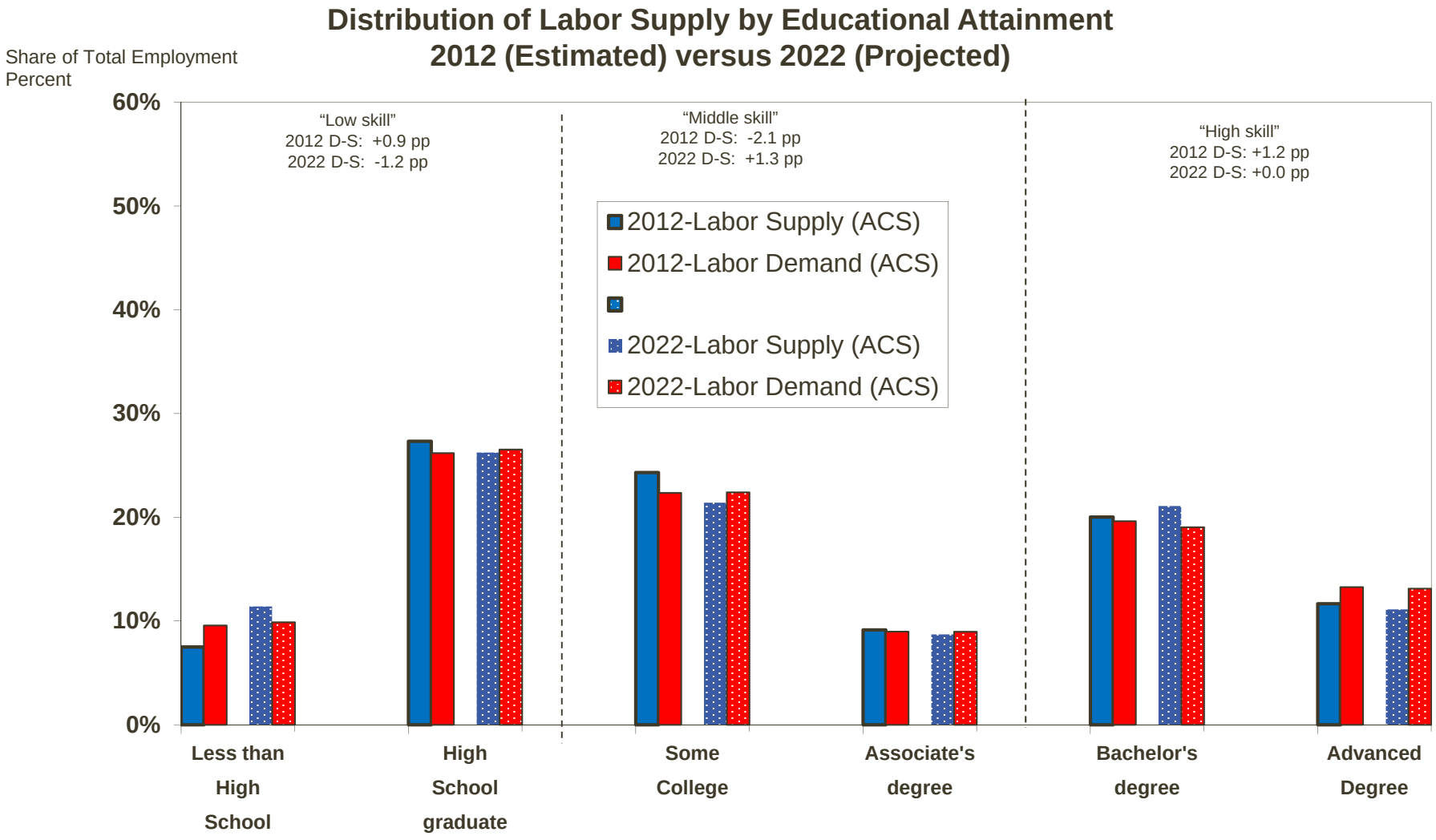
Future Projections

Projected labor demand and supply suggest that any potential mismatch would likely occur in the middle of the distribution.



Upskilling

Changing Employer Requirements

Upskilling

Between 2007 to 2012 the share of workers with a Bachelor's degree in traditionally middle- skill occupations increased rapidly.

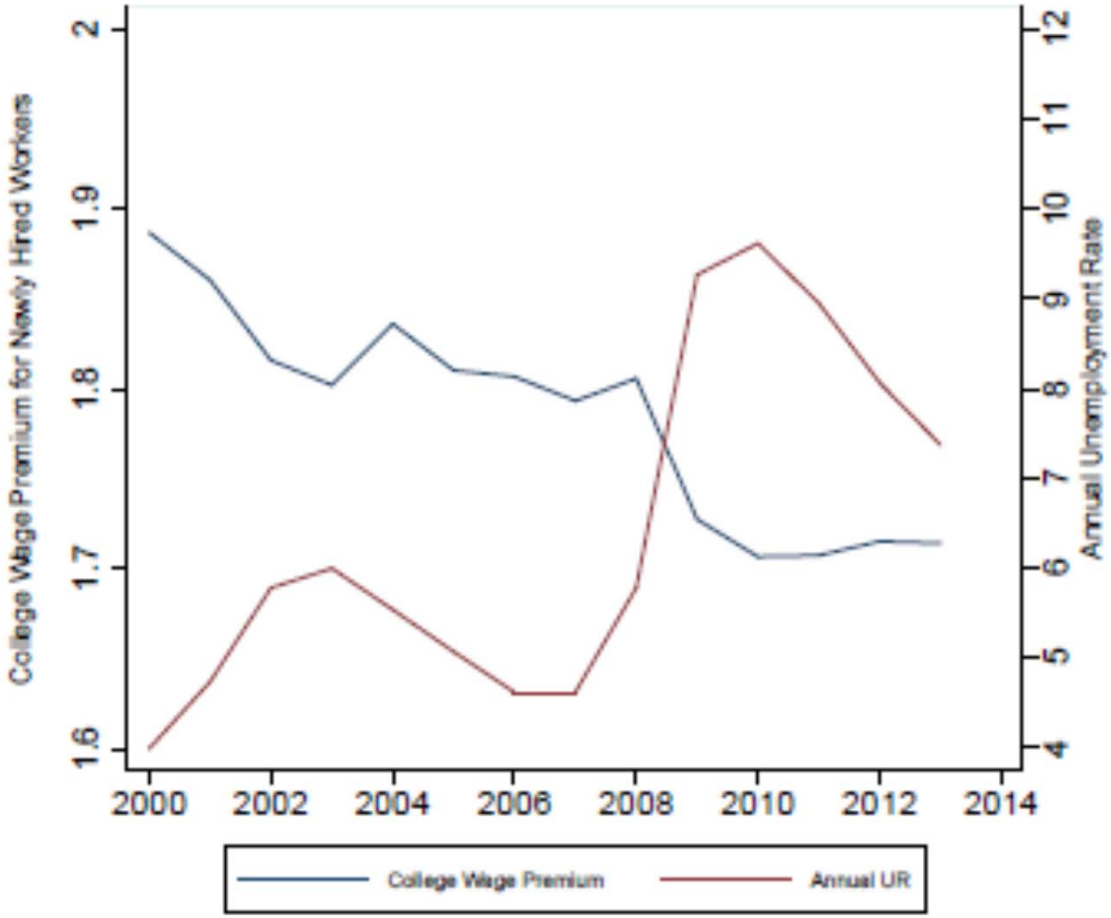
Change in Share of Workers with a Bachelor's Degree
***Within* Occupations, 2007–2012**

Source: ACS 1yr PUMS, IPUMS-USA, 2007 and 2012.
Note: Sample restricted to employed persons aged 25–65.

Upskilling

During a recession, the college wage premium for newly hired workers to decreases.

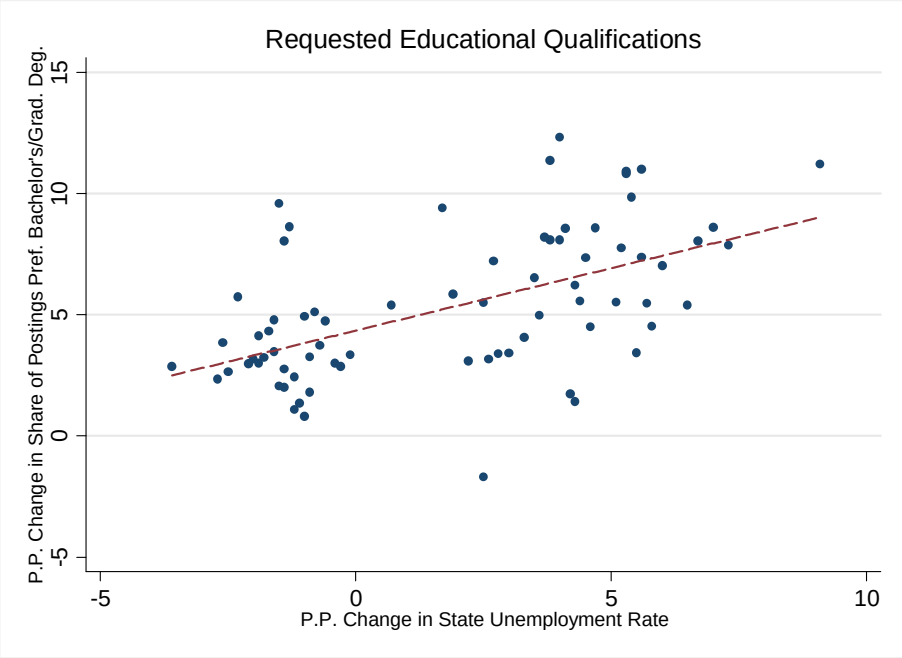
The College Wage Premium and the Unemployment Rate Over Time

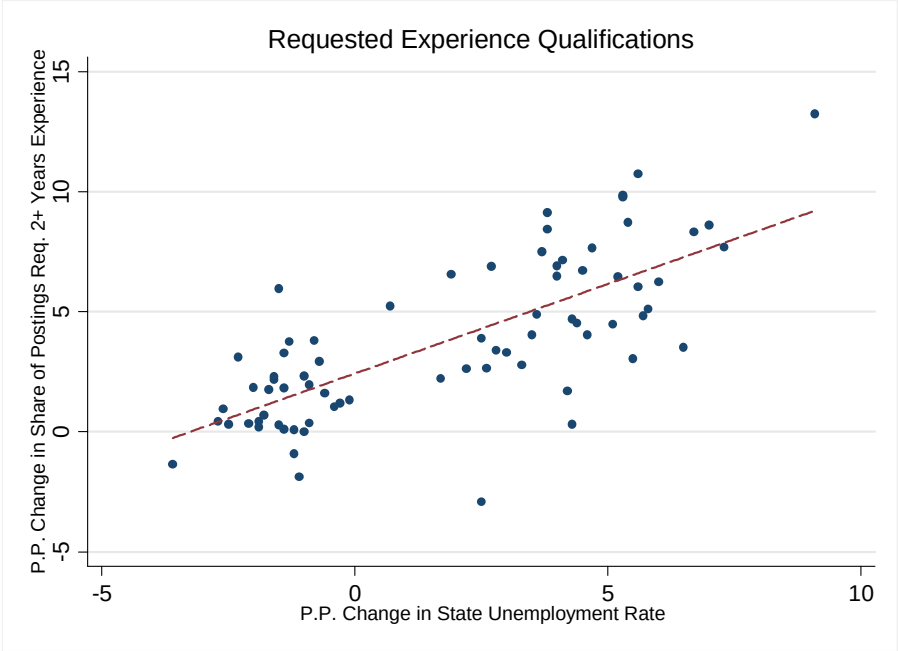


Source: CPS Matched Monthly Sample, Federal Reserve Bank of Boston analysis of monthly CPS Data, 2000-2013.

Upskilling

There is a positive relationship between changes in the state unemployment rate and changes in the share of jobs requiring a bachelor's degree or 2+ years experience.





Source: Modestino, Shoag, and Ballance. 2015. Authors' analysis using job vacancy data from Burning Glass Technologies between 2007 and 2012.

CONCLUSIONS

Policy Recommendations

Conclusions

There are several reasons why some sort of policy intervention seems warranted the short-, mid-, and long-term.

- In the **long-term,** the retirement of the Baby Boom generation will disproportionately shrink the supply of middle-skill workers such that it is unlikely to keep pace with demand.

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- In the **short-term**, the level and variance of quality in the middle-skill education category should be addressed aside from any concerns regarding overall mismatch in the labor market.
  - The completion rate at the nation's community colleges is extremely low such that most individuals in the "some college" category have no postsecondary credential.

Conclusions

Government, employers, and educational institutions all have a shared responsibility to play a role in coordinating future outcomes.

- **Government should improve the flow of information.** A top priority should be to improve the dissemination and feedback regarding what skills are in demand. Addressing sector specific information problems will require greater transparency and uniformity of information across employers, industry leaders, educators/trainers, and the government.

- **Employers should cultivate talent pipelines.** Employers need to identify potential career pathways and commit to building internal labor markets. Industry leaders need to establish recognized credentials in middle-skill competencies that can be used by employers to advance internal candidates or vet external ones.

- **Supply-side institutions should work with employers to foster and support experiential learning.** Many community colleges have traditionally seen their role as providing low-cost access to post-secondary education that can be used as a stepping-stone to a four year education. Yet playing a more active role in workforce development does not diminish, but rather enhances, that role—giving students multiple pathways to success that includes both employment and higher education.

- **We can seize the "Opportunity."** The recent passage of the Workforce Innovation and Opportunity Act (WIOA) represents an important opportunity for the nation's workforce development system to better serve employers and participants alike. Yet, it seems unlikely that a one-size-fits-all approach will be efficient or effective given that labor markets for middle-skill workers are inherently local.

Thank You!

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