



# Realism About Reskilling

Upgrading the career prospects  
of America's low-wage workers

## *Overview*

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# Realism about Reskilling

## OVERVIEW

**E**very person deserves the opportunity for dignified employment that provides living wages and potential for advancement. However, for many in America today, this is far from reality, as they are caught in a cycle of low-wage work, earning poverty wages and unable to move up in the economy.

Local leaders, firms, and workers need to adapt quickly to keep pace with rapid technological innovation and its transformative impact on the U.S. economy. Using reskilling as a focal point, this report aims to provide policymakers with tools to do so by answering the following questions:

### **Who are the nation's low-wage workers, and what are their prospects?**

We provide a detailed demographic analysis of America's low-wage workers and pair it with national labor market projections to understand their place in the changing world of work.

### **Where are the local opportunities for mobility, and how can policymakers expand them and help low-wage workers transition?**

We develop a “near-term mobility index” and use it to identify the low-wage occupations offering opportunities for upward mobility.

### **How can the reskilling infrastructure adapt to the future, foster inclusion, and address the needs of any worker seeking upward mobility?**

We pair a landscape analysis of the American reskilling system with a proposed “end-to-end reskilling journey” —a six-part framework that policymakers can use to build reskilling infrastructure that leaves no one behind.

Upgrading the career prospects of America's 53 million low-wage workers will not mean the end of low-wage work. The policy goal is for low-wage work to be a springboard, not a trap. Realizing this vision will be no small feat. But with tight labor markets, a steadily growing economy, and accelerating demand for new skills, the time for deep institutional change is now.

This research is directed toward several key players:

- Employers, who have as much to gain from skilled and motivated employees as they have to offer in specific knowledge.
- Leaders in skilling organizations (both public and private) and higher education, who know what works and can collaborate to deliver scale and market relevance.
- Policymakers, who must lead the effort to reduce the precarity of low-wage work and deliver opportunity to anyone who wants it.

To find answers, we start with the scale and pervasiveness of the problem—stagnant and unpromising low-wage work is prolific and deepening, and though it affects some more than others, the phenomenon of churning through low-wage, low-mobility jobs pervades all ages, demographics, and educational backgrounds. For many, the intersection of their identities and

life experiences makes the prospects for mobility especially dim. An inclusive lifelong learning infrastructure that meets workers where they are can help break the cycle.

Rapid technological innovation and big data, two drivers splitting our economy, can be leveraged as a solution, too. Analytical insights on companies' in-house talent pools have the potential to increase the amount and quality of training. Knowledge of in-demand jobs can help skilling organizations and universities see around the corner to deliver content that produces positive market outcomes. These insights have to be locally relevant and forward looking, and must avoid reproducing systemic biases.

Armed with such information, workforce development efforts can more efficiently and nimbly adapt to the needs of workers and firms. Properly aligned with economic development, such interventions can work in concert for amplified impact on workers' local opportunity. By engaging, coordinating, and nudging firms, policymakers can improve job quality while catalyzing wage growth. However, only by designing programs that alleviate the barriers and friction points people face in their reskilling journey, can the reskilling infrastructure truly foster inclusion. With anything less, the accelerating demand for high-paying digital skills will lock in existing disadvantages and continue to widen socioeconomic divisions.

Chapter 1 summarizes the forces and policies that are reducing mobility and job quality in the United States while increasing economic insecurity through the proliferation of low-wage work.

Chapter 2 uses data from the American Community Survey to estimate the population of low-wage workers—a staggering 53 million people—to understand their demographic characteristics and geographical dispersion.

Chapter 3 uses the Current Population Survey and Bureau of Labor Statistics data to examine how

labor market dynamics shape the way low-wage workers move within and between occupations in a shifting job market. It develops a near-term mobility index that ranks occupations based on the economic prospects of workers transitioning out of them. It pairs the index with projections of local occupational growth to show how city planners can invest in key industries and design programs that provide workers with realistic opportunities for upward transitions.

Chapter 4 introduces the “End-to-end reskilling journey,” a framework to design and analyze programs from the perspective of the worker or learner.

Combined with our previous report, *Growing cities that work for all*, this report illustrates the trends affecting low-wage work and the implications for leaders aiming to improve worker mobility.

## **In the face of turbulent headwinds, reskilling alone is not enough**

Low-wage workers are struggling—and not for a lack of new jobs. The coming flood of innovation will create new tasks and occupations, and the labor market will demand new skills just as quickly as it will shirk others. Robots may not be likely to wholly replace America's workers anytime soon, but the flood of new technologies will radically displace workers, eliminating jobs in some industries while expanding others.

Policy and company responses have failed to keep pace with the skill-biased transformation of America's labor market. Economic growth has exacerbated inequalities, with the most vulnerable workers at risk of being left behind. As the labor market splits into low-wage and high-wage work, lower-tier jobs are precarious, marked by unpredictable schedules, reduced benefits, and stagnant wages. In the face of these trends, reskilling alone will not be enough to lessen inequality or provide equal opportunity. However,

reskilling will be integral to the social scaffolding that can support economically vulnerable workers.

Regional and city leaders aiming to foster a prosperous society confront dual challenges. They need to grow their economies, and they need to ensure that growth benefits all in society. Effective and inclusive reskilling requires:

- Locally relevant and forward-looking labor market information that suggests realistic opportunities for upward transitions into growing occupations.
- User-centric design with the flexibility to accommodate every individual's unique circumstances and to support them in their career goals.

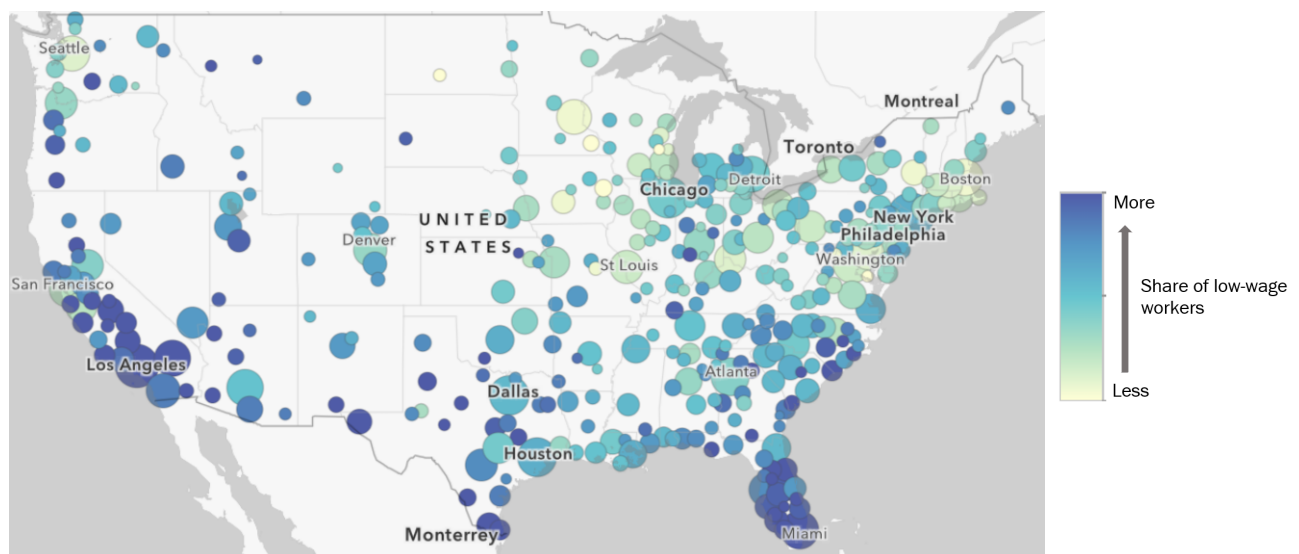
Comprehensive solutions will improve both the quality and quantity of job opportunities. Through a combination of changes in company strategies, strategic industrial development, and social scaffolding, stakeholders can prepare workers to adapt to a disruptive new economy, translating technological progress into shared prosperity.

## Who are America's low-wage workers, and what are their prospects?

To begin to answer these questions, this report estimates the population of low-wage workers. We find that low-wage workers span race, education, age, and geography, with historically marginalized groups most at risk.

**An estimated 53 million people—44 percent of all U.S. workers ages 18–64—are low-wage workers.** That's more than twice the number of people in the 10 most populous U.S. cities combined.<sup>1</sup> Their median hourly wage is \$10.22, and their median annual earnings are \$17,950. However, what counts as “low-wage” varies by place. We define “low-wage workers” as those who earn less than two-thirds of the median hourly wage rate for full-time, full-year, male workers, adjusted for the regional cost of living. A worker in Beckley, West Virginia would be “low-wage” if she earns \$12.54 per hour or less, but if she moved to San Jose, California, she would be considered “low-wage” making anything under \$20.02.

**Figure 1: Concentrations of low-wage workers vary throughout the nation**



Note: The size of each bubble represents the population size of its respective metropolitan area.  
Source: Brookings analysis of the American Community Survey, 2012–2016.

**Low-wage work spans gender, race, and geography, but not everyone is equally represented.** Reflecting structural inequalities, women and members of racial and ethnic minority groups are disproportionately likely to be low-wage workers. About half of low-wage workers are white, a quarter are Hispanic, 15 percent are Black, and 5 percent are Asian-American.

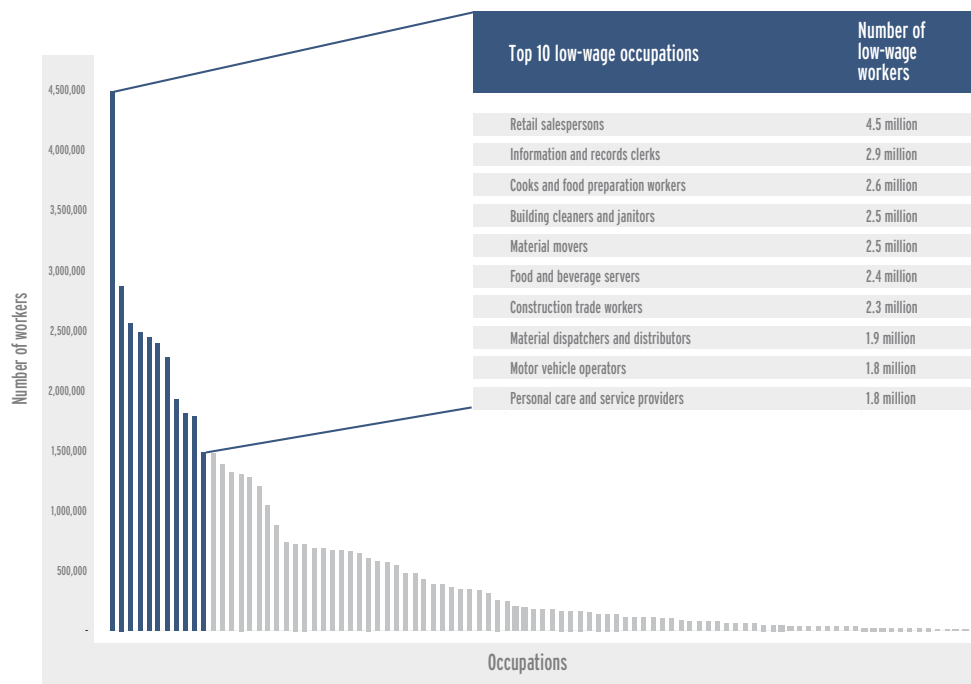
A Black worker is 32 percent more likely to earn low wages than their white counterpart – that number jumps to 41 percent for Hispanic workers. Altogether, women are 19 percent more likely than men to be low-wage workers. Disaggregation highlights the compounding sociological forces acting on low-wage workers.

**Low-wage workers are geographically dispersed.** Across more than 300 metropolitan areas, the share of low-wage workers ranges from 30 percent of the total workforce to 62 percent. Small cities in the southern and western parts of the United States are home to some of the highest concentrations of low-wage workers,

while many of the cities with the lowest shares are in the mid-Atlantic, North-eastern, and Midwest states. Despite varying concentrations, low-wage workers are distributed throughout the nation (figure 1).

**Nearly half of low-wage workers are in just 10 occupations.** 25 million people work in just 10 of 90 occupational groups. Most work in retail sales or as information clerks, cooks, or cleaners (figure 2). Hosting high-wage industries does not guarantee a lower percentage of low-wage workers, and often the opposite is true. In many large cities, high proportions of low-wage workers correlate with more sophisticated industries. Hosting industries that attract high-wage jobs, like financial and information services, also generate demand for low-wage industries, like food service and retail, while driving up the cost of living. We also find that cities with higher proportions of low-wage workers tend to have a younger, less educated workforce.

**Figure 2: Almost half of all low-wage workers are in just 10 occupations**



Source: Brookings analysis of the American Community Survey, 2012–2016.

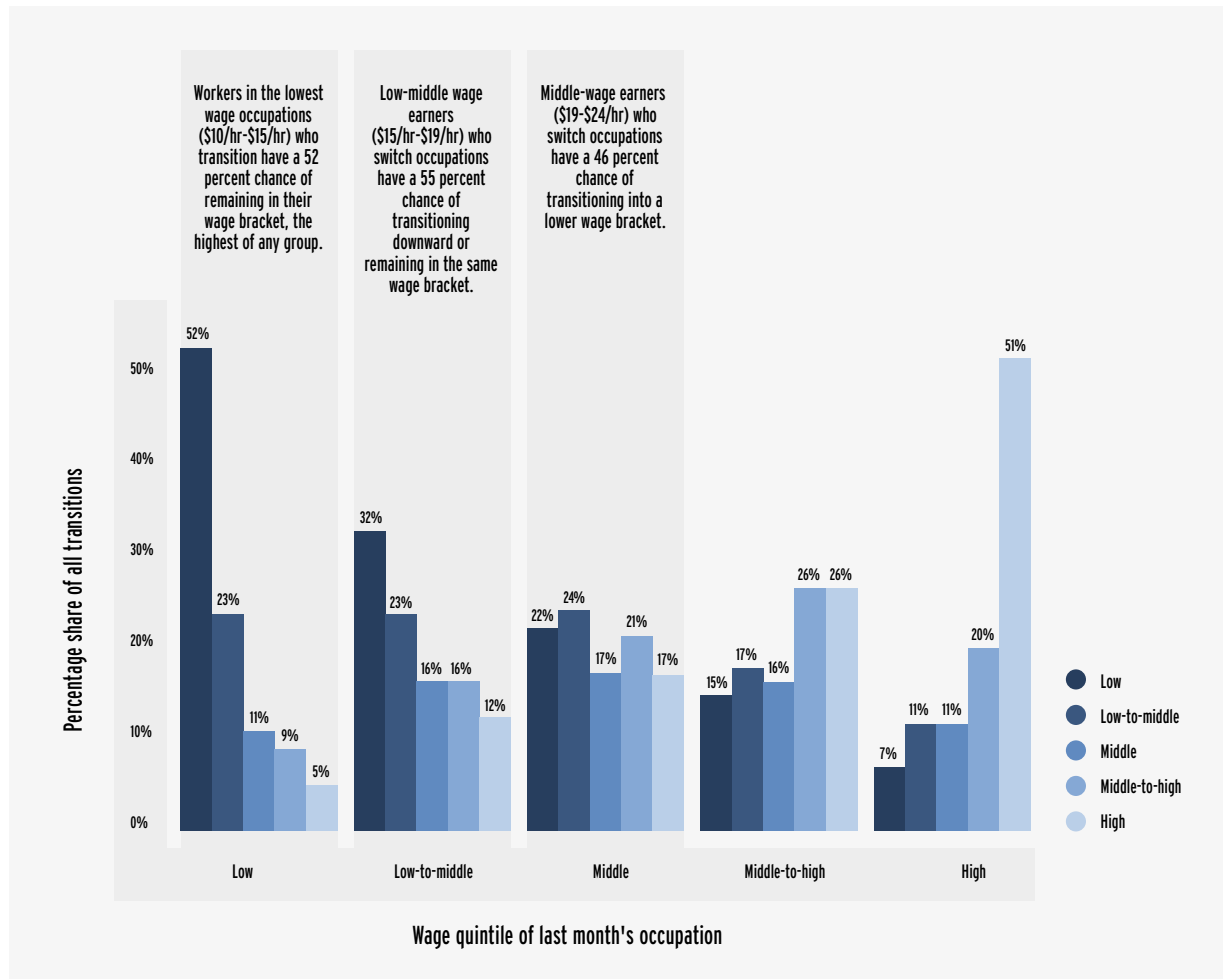


Because complex industries can potentially drive growth and bring the unemployed and underemployed into the workforce, city leaders should deliberately cultivate the capabilities needed to host (and attract) them. But urban policymakers must balance the need to host high-wage industries with efforts to support low-wage workers by increasing living wages, improving job quality, and expanding access to housing, transport, and upskilling. The two sets of policies—to promote both growth and inclusion—are complementary, but they require distinct efforts.

## A data-driven approach: Job transitions and opportunities for mobility

Workers who earn low wages switch occupations most frequently but tend to cycle between low-wage jobs. Workers in the lowest wage quintile (\$10–\$15 an hour) have the highest likelihood of remaining in low-wage work when they make job transitions (figure 3). Those in low- to middle-wage occupations (\$15–\$19 an hour) move either laterally or downward 55 percent of the time. Even those in the middle-wage quintile are more likely

**Figure 3: Many low-wage workers transition from one low wage job to the next**



**Note:** The figure groups workers who switch occupations into five wage categories based on median earnings. For each group, it shows the likelihood of transitioning into each wage group in the next month, based on the starting position. It shows that low wage workers are disproportionately likely to remain in their current position or transition downward.

Source: Brookings analysis of the Current Population Survey (2003–2019) and the Occupational Employment Survey (2016)

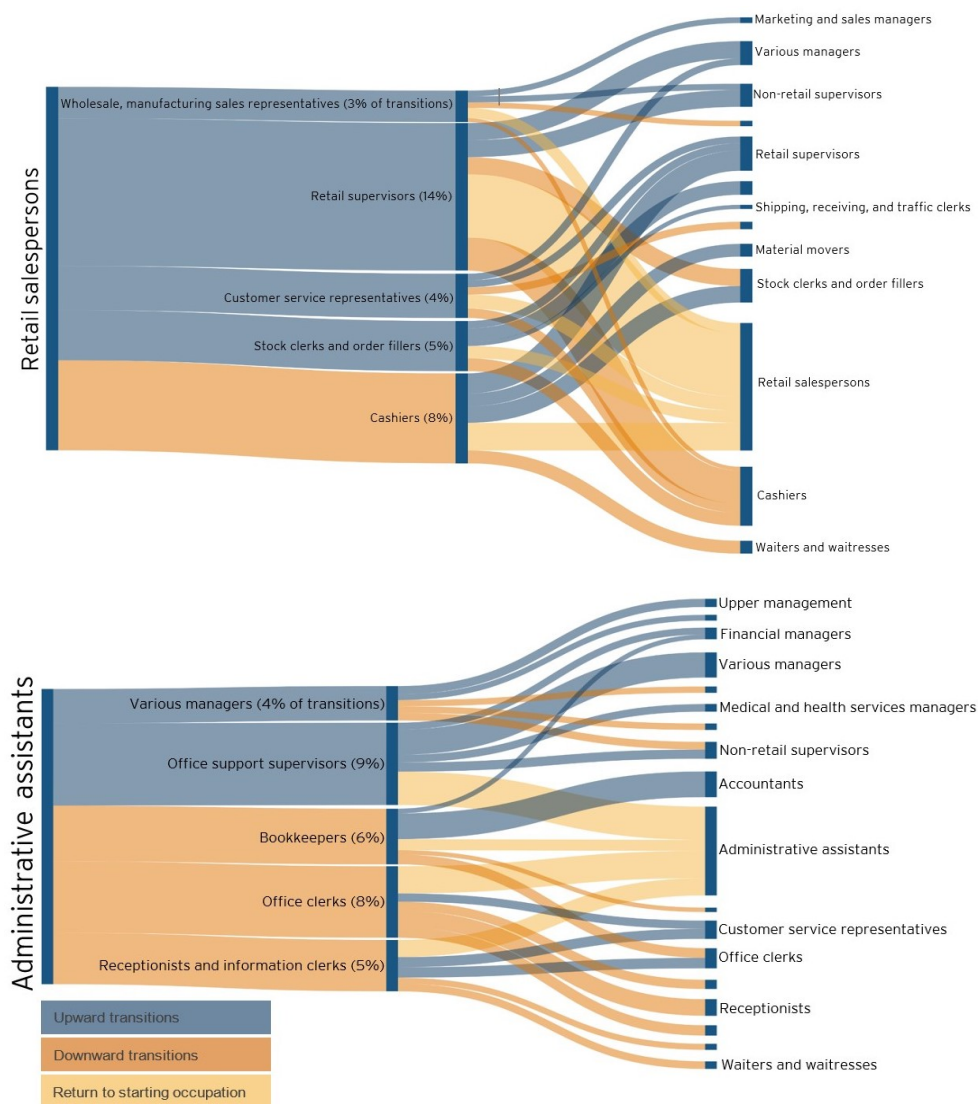


to transition into an occupation that pays a lower wage. Rather than progressing in their careers, low-wage workers are more likely to churn within low-wage occupations.

Some occupations are more likely to lead to higher-wage jobs. Workers in each occupation transition to a broad range of jobs, with occupational transitions reflecting a mix of promotions, lateral movements, and more significant career changes. The top five most likely

transitions for retail sales and administrative assistants are shown in figure 4. “Upward transitions,” leading to above average wage growth, are in blue, while “downward transitions,” or those that lead to similar or lower wages, are in orange. The data suggest that prospects for workers leaving retail sales are higher than for those leaving administrative assistance; most of retail workers’ top transitions are up, while most for administrative assistants are down.

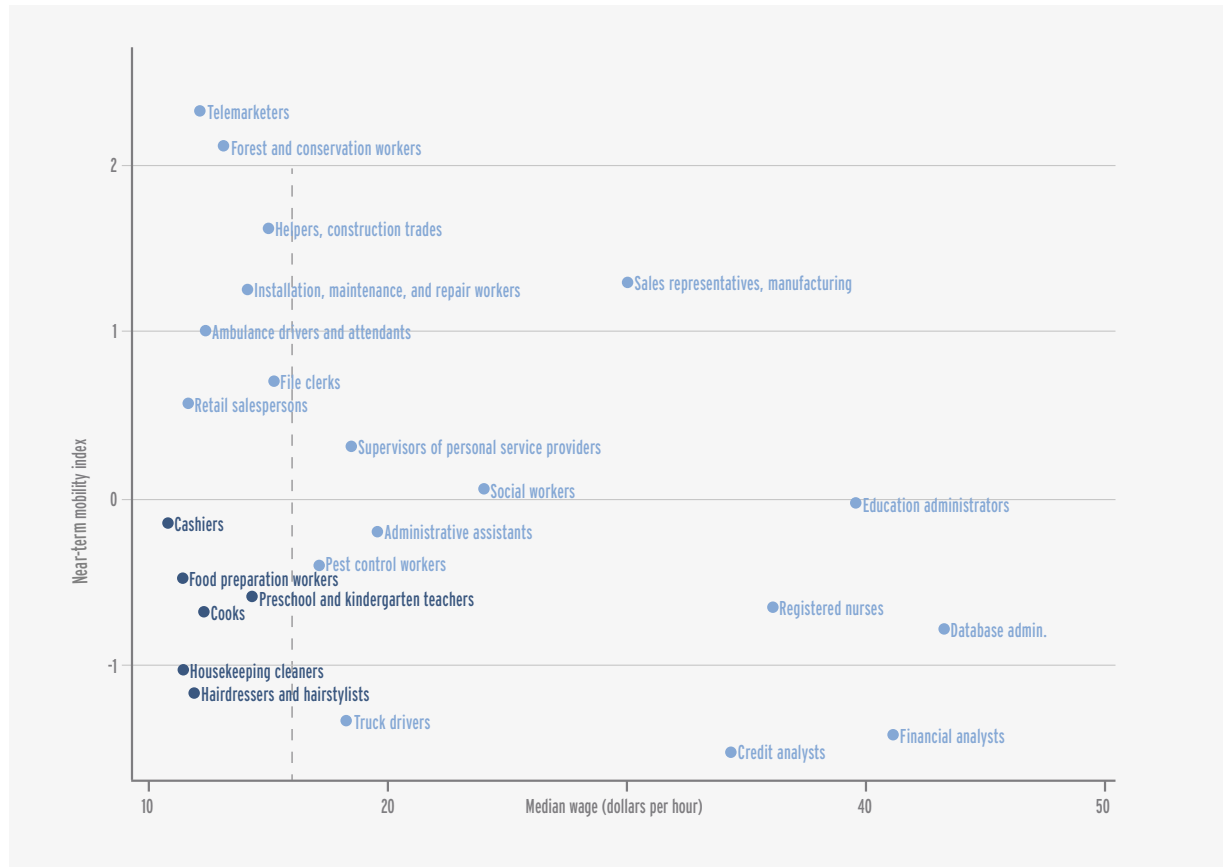
**Figure 4: Workers departing certain occupations tend to have better prospects**



**Note:** The two-step Sankey diagrams above show the relative likelihood (branch width) and trajectory (color) of the five most likely job-to-job transitions of retail salespersons and administrative assistants ordered by median wage. The second step gives a sense of possibility of dramatic wage increases while also showing how disproportionately likely it is that workers will return to their starting occupation or otherwise transition downward to another low-paying occupation. The probabilities in the second step are not conditioned on the first transition.

Source: Brookings analysis of the Current Population Survey (2003–2019) and the Occupational Employment Survey (2016)

**Figure 5: The most vulnerable workers are in low-wage, low-mobility occupations**



Note: To estimate the near-term mobility from a particular occupation, we measure the average transition from a starting wage, then estimate whether workers departing the occupation in question do better or worse. For instance, telemarketers tend to transition to a much higher destination than would be predicted based on their current wages. Workers in occupations towards the bottom-left of the plot are the most vulnerable; their occupations pay low wages and may offer little opportunity for advancement.

Source: Brookings analysis of OES and CPS data.

- Strategic skilling, if connected to local opportunity, can be an engine for mobility.** To promote mobility, reskilling infrastructure can target destination occupations that are expected to grow, are likely to offer higher wages, and are realistic, given a worker's starting occupation or employment history. Nationally, this could mean concentrating on skilling physician assistants to cater to an aging population as well as software engineers and business specialists—while deemphasizing training for occupations such as secretaries and office clerks, which automation is likely to make superfluous
- When attempting to predict occupational growth and decline, regional variation is key, though national trends should still be considered.** Our findings show that local information can illuminate promising pathways for reskilling by aligning skilling efforts with place-based market demand. For example, while plant and system operator jobs are projected to decline nationally, they are likely to grow in, say, Boise, Idaho.

- Comprehensive local strategies can link industrial and workforce development.** Workforce development is most promising when tied to specific economic development strategies.<sup>2</sup> Our previous report, *Growing cities that work for all*, showed that cities facing job losses might combat the path-dependence of industrial trends by making strategic investments in industries that build on regional capabilities and also bring good jobs.<sup>3</sup> Cities can focus on industries that absorb existing workers, while at the same time upgrading their talent as a strategy to attract and grow more complex industries. City leaders can pursue economic growth and support low-wage workers in tandem. They can leverage place-based data to link industrial and skilling strategies and marshal resources to build on local

talent, accelerate growth, and provide opportunities for the regional workforce. Again consider Boise. To counter local displacement trends and catalyze growth, city leaders could foster tech industries and build the requisite human capital. They might expect employment in various occupations to change if the city were to see growth in software publishing, data processing, and scientific research and development. Note that the expected percentage point change in growth in computer occupations (12%)—an occupation that is otherwise projected to shrink.

Depending on the priorities of local communities, a more utilitarian workforce and economic development strategy might also focus on alleviating employment losses expected in middle-skill manufacturing occupations. Boise could expect shifts in employment if it were to host a set of industries in advanced manufacturing, based on their tendency to provide good jobs and

**Figure 6: Investments in strategic industries ripple through local job markets**



**Note:** The figure shows how the robust presence of certain industries can affect projected occupational employment at the local level. On the left, we project the occupational needs of Boise, ID if it were to increase its competitiveness in technology industries: software publishing, data processing, and scientific research and development—and on the right in some manufacturing industries: beverage, chemical, plastic product, audio and video equipment, electrical equipment, motor vehicle, and medical equipment manufacturing. People are currently employed in these industries, but not at levels comparable to those in the rest of the country. We use a threshold of RCA (revealed comparative advantage) = 1 to model that the industry has a robust presence in a city.

Source: Brookings analysis of BLS and Emsi data

employ people in occupations projected to shrink in the next decade (figure 6).

To fill some of the labor shortages in figure 6, workforce development in Boise could facilitate upward transitions for individuals employed in occupations expected to imminently recede. Transition data can equip them with the tools to identify these upward transitions. For example, office clerks and computer and office machine repairers are relatively likely to progress into computer occupations in just one job transition (figure 7). Both jobs are projected to decline both nationally and in Boise.

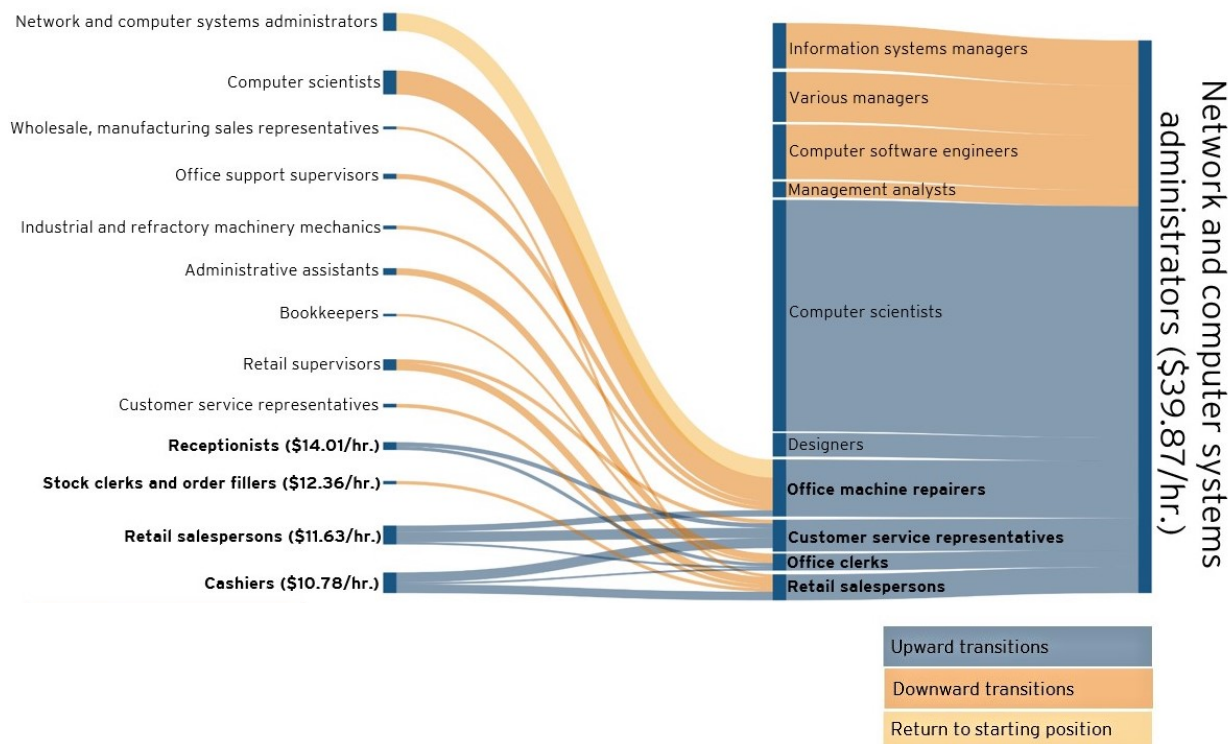
Realistic, upward, and efficient pathways to mobility might not always be intuitive. For example, as figure 7 shows, coveted computer

system analyst roles may be just two transitions away from low-wage occupations such as retail salespersons or stock clerks. The implicit skill overlaps can be leveraged for mobility.

With such transition information, policymakers, firms, and educational institutions can pave efficient paths that reduce the economic precariousness of today's low-wage workers. Upskilling payroll clerks and computer and office machine repairers for in-demand computer jobs might be a great place to start.

Synthesizing data on transitions, industrial forecasts, and local trends can thus give city planners a better understanding of the opportunities for the local workforce. But this is no simple task; seizing those opportunities

**Figure 7: Actual transitions show how targeted training can lift low-wage workers to high-demand jobs**



**Note:** The figure shows likely job-to-job transitions individuals make on their route to network and computer systems administration, an occupation demanded by firms nationally and in localities such as Boise, ID. The historical transitions of individuals between these occupations reveal an implicit skill overlap between the occupations and, most important, present and plausible transition based on historical precedent.

Source: Brookings analysis of Current Population Survey and Occupational Employment Survey data.

will require a community-wide, systems-based approach involving skilling practitioners, economic developers, and firms.

Reskilling can act as a springboard in achieving upward transitions. But to be both effective and inclusive, program design must retain the perspective of the individual worker.

## The user journey: Equal opportunity in lifelong learning

Historically marginalized groups are overrepresented in America’s low-wage workforce. So the reskilling infrastructure must foster inclusion and address the needs of any worker who seeks upward mobility. To this end, we develop the “End-to-end reskilling journey” (figure 8), a multidimensional framework to identify friction points the learners face and encourage holistic, intentional program design.

Stakeholders using this framework can design programs sensitive to the vulnerabilities and realities of America’s low-wage workers in each of the six nonlinear dimensions of the End-to-end reskilling journey.

**Encouraging user entry.** Before workers can reskill, they need to know where to begin. Low-wage workers are hard to reach—they face technological, financial, and even linguistic barriers that prevent them from pursuing reskilling opportunities. Many rely on their social

networks for career advice, which can create a self-reinforcing cycle if no one in their circles has access to reskilling information. Up to 80 percent of adults have little or no knowledge of popular online learning resources such as Khan Academy and massive open online courses.<sup>4</sup> Meanwhile, skilling providers devote too few resources to targeting low-wage workers, spending as little as a quarter of what consumer product companies spend on marketing.<sup>5</sup> Providers must move beyond “if you build it, they will come” and be proactive and creative in reaching out to the low-wage worker.

**Building self-efficacy.** Once workers see the need to reskill, they must believe they can succeed.

Self-efficacy, and the persistence it breeds, are key to reskilling. But workers are frequently discouraged by systemic biases, financial precariousness, and negative interactions with educational institutions and other skilling providers. Self-efficacy can be taught, and learners need the opportunity to prove their competence to themselves. Indeed, learning interventions that promote task mastery have been shown to improve confidence in up to 97 percent of a firm’s workers.<sup>6</sup> Self-efficacy is a powerful force that must be activated early and nurtured throughout a worker’s reskilling journey.

**Navigating careers and systems.** The job application, training, and transition process can

**Figure 8: End-to-end reskilling journey**





overwhelm even the most seasoned professional. For low-wage workers, the stakes are high—one career misstep could be financially devastating. They need to know that a clear path to success exists, and how to leverage their existing skills to find and follow it. The current U.S. career navigation framework, which privileges formal credentials and relies on schools where the average student receives just 20 minutes of counseling a year, fails America’s workers.<sup>7</sup> Data can help align educational programming with local employer needs, setting workers on reskilling paths that strategically enhance their capabilities. Evidence suggests that workers who receive vocational support and follow technical, career-oriented pathways get better jobs and earn more. Governments and skilling providers must support them to do so.<sup>8–12</sup>

#### **Assisting with economic and social**

**barriers.** The median annual income of a low-wage worker in America is just \$17,953—less than half the average cost of a degree from an in-state, public college.<sup>13</sup> Consider that 29 percent of low-wage workers have children, 1 in 10 is a single parent, and 74 percent work 50–52 weeks a year, and the need for economic and social support becomes clear. Career services must do more than develop skills; they must provide wraparound support including childcare, tutoring, advice, and financial assistance. Low-wage workers will not progress professionally if they cannot first meet their basic needs.

#### **Providing good content and good teaching.**

Many workers that engage in reskilling need engaging and affirming content to turn information into usable knowledge. One in six U.S. adults has low literacy skills and one in three has low numeracy skills.<sup>14</sup> When disaggregated along racial lines, 35 percent of Black and 43 percent of Latinx adults have low literacy skills, compared with 10 percent of Whites. Content and pedagogy must thus meet learners where they are, combining active learning strategies with flexible, psychologically-affirming education models that

mitigate pernicious stereotypes.

**Sustaining support.** A worker’s mobility journey does not end when she lands her next job. To break cycles of poverty and economic stagnation, workers must continue to learn, grow, and achieve throughout their lives. Standard worker training often has temporary effects. In a recent study of federal jobs programs, 37 percent of workers were employed in the field they were trained in after four years.<sup>15</sup> But long-term coaching and skills development support can have stunning results; in Cleveland, Toward Employment connected 560 residents to better jobs in 2018 through an individualized case management system—and provided follow-up services to every worker.<sup>16</sup> Holistic partnership-driven approaches to worker development can direct them down a path of lifelong learning.

### **The path forward**

Departing from a top-down or one-size-fits-all approach, this report merges information on national trends, local realities, and individual life experiences to inform policy options for building the workforce of the future. We hope its findings will help cities improve the mobility prospects of their low-wage populations by:

- Revealing the prevalence of low-wage work and characterizing the occupations of the low-wage workforce.
- Providing policymakers with a window into the forces driving the proliferation of low-wage work, both nationally and locally.
- Illuminating upward transitions available to workers and facilitating strategies that link industrial policy and reskilling efforts to drive inclusive growth.
- Assisting workforce development practitioners as they design programs to meet workers where they are.

**Figure 9: A low-wage worker's uphill journey**



Local policymakers, private sector leaders, and skilling providers must support low-wage workers throughout their uphill battle for economic mobility.



## Endnotes

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