Federal Reserve Bank of Philadelphia

COVID-19: Equity in Recovery Series

Skills-Based Occupational Transitions for COVID-19 Displaced Workers in the Philadelphia Metro Area

By Kyle DeMaria, November 2020

Introduction

As society continues to respond to the ongoing COVID-19 pandemic, economic commentators have hypothesized about the nature of the recovery and the implications for the labor market (Sheiner and Yilla, 2020). Companies adjusting to changing consumer demands and new operating environments may need to rethink their staffing requirements, leading to growth for some occupations but job loss for others. Workers with jobs to return to may be asked to take on different responsibilities, but some may not feel comfortable returning to work that could expose them to the novel coronavirus. Workers must decide if they will return to their previous positions, if given the opportunity to do so, or transition into new lines of work. A Strada Consumer Insights poll from mid-July suggests that about one-third of respondents (37 percent) would look to change their career if they lost their job (Strada Education Network, 2020).

Occupations are a determining factor in who has experienced the greatest economic impact from COVID-19 (Hawkins, 2020). More than half of Black (52 percent) and Latinx (57 percent) workers are employed in nonessential occupations that place them in close physical proximity to others (Langston, Treuhaft, Scoggins, Simon, and Walsh, 2020). In addition, more than 80 percent of workers in occupations at high risk of disruption because of early COVID-19 social distancing measures do not have a bachelor's degree (Wardrip and Tranfaglia, 2020). While workers at all levels of educational attainment saw an increase in unemployment and a decline in labor force participation between February and May, the impact was more severe for workers without a bachelor's degree (Daly, Buckman, and Seitelman, 2020). Complicating these economic risks is that displaced workers often experience short-term earnings losses that can persist over years (Jacobson, LaLonde, and Sullivan, 1993; Couch and Placzek, 2010). Importantly, workers may be able to mitigate earnings losses if they can transition to new occupations that require similar skills (Gathmann and Schönberg, 2010; Robinson, 2018). Recent research demonstrates that transitions between occupations requiring similar skills can lead to economic mobility for workers without a bachelor's degree (DeMaria, Fee, and Wardrip, 2020; Blair et al., 2020; World Economic Forum, 2018; MaRS Discovery District, 2018).

In *Exploring a Skills-Based Approach to Occupational Mobility*, my coauthors and I identify occupational transitions into higher-paying jobs for workers without a bachelor's degree. By analyzing the skills requested in online job advertisements posted in the 33 largest U.S. labor markets, we calculate a similarity score that describes the degree of skill overlap within and between lower-wage and opportunity occupations. Neither lower-wage nor opportunity occupations require a bachelor's degree, but the latter group of occupations pays above the regionally adjusted national annual median wage of $40,727 in the Philadelphia metro area. Within this framework, we define "potential transitions" as transitions within and between lower-wage and opportunity occupations that result in at least a 10 percent pay increase and into an occupation projected to have stable or positive employment growth over the next decade. Top transitions are a subset of potential transitions that have a high degree of skill overlap (i.e., a similarity score greater than 0.75). In the Philadelphia market, we find that about 44 percent of lower-wage employment is associated with a top transition and that pursuing one of these top transitions could result in a $16,000 annual wage increase, on average (DeMaria, Fee, and Wardrip, 2020).

In this research brief, I ask what these occupational transitions could mean for workers displaced during the COVID-19 pandemic. First, I identify the occupations in the Philadelphia metro area that experienced the steepest employment declines in spring 2020. Second, I identify

the occupational transitions with the highest similarity score for Philadelphia workers who were employed in the hardest-hit occupations. Third, I consider the skills needed to transition to occupations that did not decline severely.

Employment Impacts on Philadelphia Occupations

The trajectory of employment in the Philadelphia metro area in spring 2020 reflected a more moderate version of the national experience, with civilian employment peaking in February before declining to its year-to-date trough in April.[1] To identify the occupations that experienced the most severe decline in employment in the Philadelphia metro area, I estimate employment decline rates by occupation nationally between February and April 2020 using the Current Population Survey and apply these rates to local occupational employment levels found in the Bureau of Labor Statistics' 2018 Occupational Employment Statistics data set.[2] To further analyze occupational employment loss, I classify occupations into three categories: severe employment decline (employment decreased by more than the national rate of roughly 20 percent), moderate employment decline (employment decreased by less than the national rate), and employment increase. **Table 1** lists the occupations in the Philadelphia metro area estimated to have experienced the greatest

[1] Author's calculations using the Current Population Survey (January–June 2020 Basic Monthly Samples, accessed via IPUMS).

[2] This approach is similar to that used by the Metropolitan Council in its analysis of COVID-19 economic impacts in the Twin Cities region (Metropolitan Council, 2020). Sample sizes in the Current Population Survey's Basic Monthly Samples are not sufficient to confidently produce monthly, metropolitan-level occupational employment estimates. While this alternative approach uses national employment decline rates, it is responsive to Philadelphia-area occupational employment. This analysis is primarily concerned with changes in employment levels, so it counts among the employed full-time workers who saw their work hours decline below 35 hours per week. I consider workers who were classified as employed but not at work during the reference week for "other reasons" to be unemployed because the BLS identified that COVID-19-impacted workers had been misclassified (U.S. Bureau of Labor Statistics, 2020). This employment measure is similar to "U3-alt" defined by Foote, Nordhaus, and Rivers (2020).

Table 1. Philadelphia Metro Area Occupations that Experienced the Largest Estimated Decline in Employment Between February and April 2020

Rank	Occupation	Occupation Type	National Employment Decline Rate	Employment Decline Category	Local Estimated Employment Decline
1	Retail Salespersons	Lower-wage	-43%	Severe	-34,487
2	Waiters and Waitresses	Lower-wage	-74%	Severe	-34,068
3	Laborers and Material Movers, Hand	Lower-wage	-37%	Severe	-23,092
4	Cashiers	Lower-wage	-33%	Severe	-23,017
5	Combined Food Preparation and Serving Workers, Including Fast Food	Lower-wage	-31%	Severe	-19,514
6	General Office Clerks	Lower-wage	-21%	Severe	-14,687
7	Customer Service Representatives	Lower-wage	-20%	Moderate	-12,238
8	Restaurant Cooks	Lower-wage	-50%	Severe	-11,387
9	Hairdressers, Hairstylists, and Cosmetologists	Lower-wage	-87%	Severe	-11,215
10	Bartenders	Lower-wage	-82%	Severe	-10,971

Sources: Author's calculations using data from the Current Population Survey (February and April 2020 Basic Monthly Samples, accessed via IPUMS) and BLS Occupational Employment Statistics (May 2018). For information on classifying occupations into lower-wage and opportunity occupation categories, see DeMaria, Fee, and Wardrip (2020).

employment declines in spring 2020.

Some occupations experienced substantial employment decline rates nationally, while others were estimated to have had a sizeable impact locally. When considering the occupational composition of the Philadelphia regional economy, the largest estimated job losses were for retail salespersons (34,000 jobs), waiters and waitresses (34,000 jobs), hand laborers and material movers (23,000 jobs), and cashiers (23,000 jobs). While customer service representatives experienced a moderate national decline rate, the quantity of customer service representative jobs in the Philadelphia metro area suggests a large employment decline of about 12,000 jobs. Each of the 10 occupations that experienced the largest estimated job losses in the Philadelphia metro area were lower-wage occupations, not requiring a bachelor's degree and paying an annual median wage below $40,727.

Occupational Mobility for COVID-19 Displaced Workers

For lower-wage workers in Philadelphia, finding a top transition — one that leads to an occupation that requires similar skills, could result in at least a 10 percent pay increase, and is available to someone without a bachelor's degree — is an uncertain proposition. In fact, my coauthors and I find that a top transition is available to less than half (44 percent) of lower-wage workers in the Philadelphia metro area, a rate that is lower than that found across large metro areas nationally (49 percent) (DeMaria, Fee, and Wardrip, 2020). Further, in my analysis of the lower-wage and opportunity occupations that severely declined in the Philadelphia metro area, I find that a top transition is available to a similar share of workers (50 percent).[3]

Consistent with these broader findings, top transitions exist for some but not all of the 10 hardest-hit occupations in the Philadelphia metro area. **Table 2** presents the highest-scoring occupational transitions available to workers in these 10 occupations. A top transition was only available for five of the 10 hardest-hit occupations: retail salespersons, hand laborers and material movers, combined food preparation and serving workers, general office clerks, and customer service representatives. While not meeting the requirements for a top transition, high-scoring transitions above 0.70 were available to an additional three of the hardest-hit occupations: waiters and waitresses, cashiers, and hairdressers and hairstylists. That the highest-scoring transitions available to restaurant cooks and bartenders were well below the threshold for a top transition suggests that greater training may be needed for these workers to transition into one of the higher-paying destinations.

Table 2 also suggests that for certain origins, a tradeoff exists between occupational transitions that prioritize shared skills and transitions that maximize reemployment opportunities. Five of the eight top transitions identified in **Table 2** are to an occupation that also experienced a severe decline in employment between February and April 2020. While the transition from one hard-hit occupation to another (e.g., retail salesperson to rental clerk) might be difficult to make in today's economy, recent trends in online job postings show that the demand for jobs in the lower two-thirds of the wage distribution have rebounded to a greater extent than jobs in the top one-third of the wage distribution (Kolko, 2020). COVID-19 displaced workers looking to transition occupations will need to consider not only the transferability of their existing skill sets but also the relative number of job opportunities in their destinations of interest.

Skill Gaps and Overlaps in Transitions from the Hardest-Hit Occupations

While top transitions identify occupations that require similar skill sets, these occupations are not identical, and some level of training or education will likely be necessary to successfully make any of these transitions. What skill gaps and overlaps exist in transitions from each hardest-hit occupation to the highest-scoring destination that did not experience severe employment decline in the Philadelphia metro area? To answer this question, I compare the skill intensities (i.e., the percent of an occupation's advertisements requesting a skill) of the top 25 skills requested for occupations in these pairs. Using the skill intensities, I determine the three skills constituting the largest gap (i.e., where the skill is requested more frequently in the destination than in the origin) and the three skills that most overlap (i.e., where advertisements for the origin and destination request the same skill most often) (**Table 3**). Across the transitions shown in **Table 3**, several 21st-century skills (e.g., communication, customer service) appear as a bridge connecting the occupations in these transitions. Skill gaps can be specific to particular companies and industries (e.g., the Nationwide Mortgage Licensing System), and in fact, gaps that emerge from these transitions include specialized skills requiring discrete training (e.g., food safety, Microsoft Excel, accounting).

Skills-Based Occupational Mobility for an Equitable Recovery

In this research brief, I use a skills-based occupational mobility lens to identify pathways to higher-paying jobs for COVID-19 displaced workers without a bachelor's degree. I estimate that between February and April 2020, employment in the Philadelphia metro area declined most

[3] More information on the methodology supporting these transitions is available in DeMaria, Fee, and Wardrip (2020).

Table 2. Highest-Scoring Transitions for COVID-19 Displaced Workers in the Philadelphia Metro Area

Origin Occupation	Destination Occupation	Similarity Score	Destination Occupation Type	Average Annual Median Wages		Destination Employment Decline Category
				Origin	Destination	
Retail Salespersons	Counter and Rental Clerks	0.85	Lower-Wage	$20,875	$29,286	Severe
	First-Line Supervisors of Non-Retail Sales Workers	0.84	Opportunity Occupation	$20,875	$90,896	Moderate
Waiters and Waitresses	Food Batchmakers	0.74	Lower-Wage	$17,597	$34,258	Moderate
	Parking Lot Attendants	0.73	Lower-Wage	$17,597	$22,862	Severe
Laborers and Material Movers, Hand	Industrial Truck and Tractor Operators	0.83	Lower-Wage	$29,120	$36,234	Moderate
	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	0.75	Opportunity Occupation	$29,120	$41,142	Moderate
Cashiers	Customer Service Representatives	0.75	Lower-Wage	$15,155	$37,378	Moderate
	Counter and Rental Clerks	0.73	Lower-Wage	$15,155	$29,286	Severe
Combined Food Preparation and Serving Workers, Including Fast Food	Cooks, Short Order	0.76	Lower-Wage	$15,085	$20,420	Severe
	Food Preparation Workers	0.76	Lower-Wage	$15,085	$17,098	Severe
General Office Clerks	Human Resources Assistants, Except Payroll and Timekeeping	0.88	Opportunity Occupation	$35,859	$41,850	Severe
	Dispatchers, Except Police, Fire, and Ambulance	0.83	Lower-Wage	$35,859	$40,622	Moderate
Customer Service Representatives	Title Examiners, Abstractors, and Searchers	0.76	Opportunity Occupation	$37,378	$49,962	Severe
	First-Line Supervisors of Office and Administrative Support Workers	0.75	Opportunity Occupation	$37,378	$61,797	Moderate
Restaurant Cooks	Food Batchmakers	0.66	Lower-Wage	$24,843	$34,258	Moderate
	Food Service Managers	0.40	Opportunity Occupation	$24,843	$68,848	Severe
Hairdressers, Hairstylists, and Cosmetologists	First-Line Supervisors of Personal Service Workers	0.71	Lower-Wage	$23,787	$39,250	Severe
	Securities, Commodities, and Financial Services Sales Agents	0.52	Opportunity Occupation	$23,787	$68,682	Increased
Bartenders	Parking Lot Attendants	0.35	Lower-Wage	$20,147	$22,862	Severe
	Food Batchmakers	0.31	Lower-Wage	$20,147	$34,258	Moderate

Note: Highlighted rows indicate top transitions where the unrounded similarity score is greater than 0.75.

Sources: Author's calculations using data from the Current Population Survey (February–June 2020 Basic Monthly Samples, accessed via IPUMS), BLS Occupational Employment Statistics (May 2018), BLS Employment Projections (2018–2028), Burning Glass Technologies (2014–2018), USDOL/ETA O*NET 24.2 Database, BEA Regional Price Parities (2017), and American Community Survey Five-Year Public Use Microdata Sample (2013–2017)

Table 3. Skill Overlaps and Gaps for the Highest-Scoring Transitions into Occupations that Did Not Severely Decline

Origin Occupation	Destination Occupation	Greatest Skill Overlap	Greatest Skill Gap
Retail Salespersons	First-Line Supervisors of Non-Retail Sales Workers	Sales Communication Skills Customer Service	Sales Management Leadership Problem Solving
Waiters and Waitresses	Food Batchmakers	Teamwork / Collaboration Communication Skills Customer Service	Food Safety Detail-Oriented Cooking
Laborers and Material Movers, Hand	Industrial Truck and Tractor Operators	Forklift Operation* Physical Abilities Lifting Ability	Forklift Operation* Material Handling Equipment Machinery
Cashiers	Customer Service Representatives	Customer Service Customer Contact Sales	Communication Skills Computer Literacy Microsoft Excel
Combined Food Preparation and Serving Workers, Including Fast Food	Food Batchmakers	Food Safety Communication Skills Cooking	Detail-Oriented Lifting Ability Teamwork / Collaboration
General Office Clerks	Dispatchers, Except Police, Fire, and Ambulance	Communication Skills Customer Service* Microsoft Office	Scheduling Customer Service* Customer Contact
Customer Service Representatives	First-Line Supervisors of Office and Administrative Support Workers	Communication Skills Customer Service Problem Solving	Office Management Budgeting Accounting
Restaurant Cooks	Food Batchmakers	Food Safety Communication Skills Cooking	Detail-Oriented Teamwork / Collaboration Guest Services
Hairdressers, Hairstylists, and Cosmetologists	Securities, Commodities, and Financial Services Sales Agents	Communication Skills Building Effective Relationships Sales	Customer Contact Customer Service Nationwide Mortgage Licensing System (NMLS)
Bartenders	Food Batchmakers	Communication Skills Organizational Skills Physical Abilities	Food Safety Cooking Teamwork / Collaboration

Source: Author's calculations using data from Burning Glass Technologies (2014–2018)

* A single skill can appear as a skill gap and skill overlap in situations in which the skill is frequently requested in job ads for both the origin and destination occupation (representing a skill overlap) but still is requested more frequently for the destination (representing a skill gap).

severely in select retail sales (e.g., salespersons, cashiers), food service (e.g., waiters and waitresses, combined food preparation and serving workers, restaurant cooks), and office and administrative support (e.g., office clerks, customer service representatives) occupations. A top transition is available to half (50 percent) of the lower-wage and opportunity occupations that severely declined. Because the top transitions connect very similar — but not identical — pairs of occupations, workers may need additional training to complete a transition, and a recent survey suggests that this is on the mind of workers as well: A Strada Consumer Insights poll from early August found that more than one-third (37 percent) of workers believe they would need additional education to replace their job if they lost it.

This analysis also found that a top transition was only available to five of the 10 hardest-hit occupations. Lower-scoring transitions between occupations that share fewer skills may require more training than higher-scoring transitions, and an analysis of skill gaps can point to finite opportunities for training. One complicating factor is research that shows that mass layoffs induce very few workers (about 1 in 100 workers) to pursue a two- or four-year public education, and a worker's limited financial means or knowledge of financial aid options may play a role (Minaya, Moore, and Scott-Clayton, 2020). This suggests that workers seeking to transition to higher-paying occupations, as outlined in this report, may benefit from financially accessible, targeted training opportunities. Micro-credentials and skills-based hiring are strategies that emphasize the importance of skills and their transferability across occupations. Employers and workforce development professionals can advance the vision of an equitable recovery by enabling workers without a bachelor's degree to build the skills necessary to transition to higher-paying occupations and ensure that human resources practices transcend the traditional focus on academic degrees and focus instead on demonstrable skills.

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