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Understanding Job (Mis)Match: Jobs and Jobseekers in Detroit

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Executive Summary

The COVID-19 crisis has fundamentally changed Detroit's labor and job markets, with the city's unemployment rate currently estimated at 32%¹ and many businesses still shuttered. However, even prior to the pandemic, Detroit residents faced limited employment opportunities. This analysis examines the extent to which job opportunities available in Detroit and the tri-county area before the COVID-19 outbreak matched the skills and attributes of Detroit residents. The results of this research can inform workforce training and barrier removal strategies, which will take on added importance during the period of economic recovery. The following summarizes our main findings:

- Across several major cities in Michigan, Detroit had the lowest jobs-to-unemployed ratio, with just 15 new job openings per month for every 100 unemployed residents in 2019. *The ratio was similarly low in the tri-county area (Wayne, Macomb, Oakland), with only 21 new job openings per month per 100 unemployed Tri-County residents.* This suggests that job competition was significant for unemployed Detroiters even if they were willing to travel a longer distance for employment.
- Low demand for workers without a bachelor's degree and those in lower-skill occupations drove the low job-to-unemployed ratio in Detroit. While there were only eight new job openings per month for every 100 unemployed Detroiters without a bachelor's degree, there was one new job opening available for every unemployed Detroiters with a bachelor's degree.
- The uneven supply of and demand for low-skill work in the metro region was only in part a result of spatial mismatch. While improvements in transportation are needed to better facilitate matches, the region also needs to increase the total number of job opportunities.
- The digital knowledge gap (ability to use a computer) may prevent 45% of unemployed Detroiters from accessing 72% of opportunities in the city of Detroit and 66% of the job openings in the tri-county area².
- Driver's license and auto insurance requirements may prevent 22% of unemployed Detroit residents from 25% of the job openings in both the city and in the tri-county area.
- State occupational licenses could prevent nearly all unemployed Detroiters from 27% of the job openings in the city and 25% of the job openings in the tri-county area.
- Physical activities such as walking or standing may prevent 5% of the unemployed Detroiters from 39% of the job opportunities in the city and 45% of job postings in the tri-county area. Furthermore, one-quarter of the labor force dropouts in Detroit (not working and not seeking employment either) have reported physical disability, and the high physical demand of available jobs may deter them from re-entering the labor force altogether.

¹ Based on the estimation provided by the Local Area Unemployment Statistics (LAUS) program, US Bureau of Labor Statistics for June, 2020.

² The number of jobs for Detroiters throughout this study was obtained through the *Detroit at Work* website, which included both jobs in the city of Detroit and in its neighboring ZIP codes.

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Background

Analyzing the opportunities for Detroit's unemployed residents

Over the last 10 years, the economic recovery in Detroit has been significant, with substantial job growth up until the COVID-19 crisis. However, challenges in matching workers with jobs were still present in the local labor market. Detroit had the highest non-working adult population share of any large city in the U.S. This was partially attributable to the lower educational attainment in the city than the national average. As a result, many residents lacked the skills needed to gain employment in high-skilled, higher-paying industries (Corporation for a Skilled Workforce, 2015). Furthermore, disability, lack of transportation, and criminal records created a set of intersecting barriers to employment (Holzer & Rivera, 2019). These issues added to historical trends that had long weakened Detroit's labor market, such as racial segregation and the collapse of the manufacturing sector in the region. In sum, even before the COVID-19 crisis, Detroit's unemployed residents faced a complex set of challenges in accessing employment.³

Fortunately, by most accounts, the regional economy was strong prior to the COVID-19 crisis, and it is possible that the economic growth bolstered the opportunity for unemployed individuals to find work (Burton et al., 2020). To understand the extent to which Detroit's recovery had produced sufficient job opportunities for its unemployed workers, we reviewed online job postings through the *Detroit at Work* and *Pure Michigan Talent Connect* websites and compared the job requirements listed in those postings to the demographic characteristics of the unemployed residents in Detroit and the tri-county area⁴. Online job postings have become the primary way in which employers advertise and job seekers learn about new jobs (Maurer, 2016; Ross & Slovinsky, 2012), making these posts a critical source of data to help us understand the opportunities and challenges facing Detroit's labor market.

Specifically, we focus on three primary pre-employment screening areas that might prevent an unemployed worker from applying for or obtaining a job: skills, perceived risk, and mobility. Skills screening involves employers filtering their selection of candidates by educational attainment, existing skill sets, or prior work experience. Many employers also screen candidates for perceived risks, including criminal convictions and drug use. Finally, employers may screen for the mobility of applicants, such as by requiring a driver's license or auto insurance.

Data

The job posting data used in the analysis were retrieved from Pure Michigan Talent Connect (PMTTC) and Detroit at Work (D@W) via the Department of Technology, Management and Budget (DTMB) in Michigan. The D@W job posting data is a subset of the PMTC job postings for jobs located in Detroit and its neighboring ZIP code areas. Throughout the analysis, we used the PMTC job postings data for analysis on the tri-county area and the D@W data for analysis on Detroit. The study sample consists of the universe of jobs posted on PMTC and D@W between Jan. 1, 2019, and Dec. 31, 2019. To supplement the job description from the original job postings, we used the Standard Occupation Classification (SOC) code for each job posting to obtain detailed occupation-specific skill requirements from the O*NET database. To compare the job requirement to worker demographics, we used the 2017 American Community Survey (ACS) and the 2016-2019 Current Population Survey (CPS) to estimate the educational attainment, occupation (based on the most recent work activities), and other demographic characteristics of the unemployed workers in the study area.

³ This analysis only focuses on unemployed Detroit residents as they are by definition looking for work. If we included those out of the labor force the number of work-eligible adults is much larger.

⁴ *Detroit at Work* is the City of Detroit's one-stop resource for employment and training opportunities. *Pure Michigan Talent Connect* is the State of Michigan's employment resource site.

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Results

How did the number of job postings compare to the number of unemployed in Detroit?

Detroit and its surrounding areas had the lowest jobs-to-unemployed ratio among major Michigan cities. Detroit had just 15 *new job openings per month* for every 100 unemployed Detroiters (jobs-to-unemployment ratio of 15%) in 2019, whereas in Dearborn, Ann Arbor, Grand Rapids, Kalamazoo, Lansing, and Saginaw, there was at least one new job opening for every two unemployed workers each month (a ratio of over 50%).

If we include jobs in Detroit’s surrounding suburbs that are accessible through the D@W job site, the ratio for Detroit’s unemployed workers increases to 23%⁵. Alternatively, if we look at the tri-county area (Wayne, Macomb, and Oakland), where many Detroiters commute for work, the ratio is 21%⁶. While these ratios are slightly higher than for the city alone, they are still significantly lower than other Michigan cities, suggesting that unemployed workers in Detroit face stiffer competition for job opportunities than residents in other Michigan cities, even if they are willing to travel a longer distance for employment.⁷

City	# of jobs	# of Unemployed residents	Jobs-to-Unemployed Ratio
Dearborn	1,462	1,317	1.11
Ann Arbor	1,656	1,565	1.06
Grand Rapids	3,976	4,040	0.98
Kalamazoo	983	1,540	0.64
Lansing	1,748	2,998	0.58
Saginaw	785	1,577	0.50
Flint	585	2,999	0.20
Detroit	3,284	22,170	0.15
-D@W job posting	5,201	N/A	0.23
Tri-county area	17,555	83,392	0.21

Source: DTMB (2019) *Pure Michigan Talent Connect Job Postings*, BLS Local Area Unemployment Statistics database (2019)

⁵ The ratio shown here does not account for the unemployed population in these surrounding areas and is therefore an over-estimate of the actual jobs-to-unemployed ratio for Detroit city and its bordering zipcodes.

⁶ The ratio reflects all unemployed individuals and job opportunities in the tri-county region.

⁷ We did not generate metro estimates for the other cities referenced.

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How do the skills and attributes of unemployed Detroiters match with the requirements of available jobs?

First, the low jobs-to-unemployed ratio was partly driven by uneven supply and demand for lower-skill jobs. Table 2 compares the skill requirement of jobs and the skill attainment of unemployed Detroiters⁸. The results show the low jobs-to-unemployed ratio in Detroit was driven by low demand for workers without a bachelor's degree and those in lower-skill occupations.

The jobs-to-unemployed ratio was 5% for high school dropouts, 8% for workers with a high school diploma or some college education, 28% for workers with an associate degree, and 100% for workers with a bachelor's degree or above. For clarity, this means that for every 100 unemployed Detroiters with a high school diploma, there were only eight new jobs per month that listed a high school diploma as the minimum education requirement. The ratios for those with more education may be higher than reported here, as an individual with more education may be qualified for a job that requires less education. For example, an associate degree holder may be qualified for positions in which the minimum education required is a high school diploma. However, this would also mean that the individual would not be capturing the wage premium she would hope to have earned through obtaining a postsecondary credential. It should also be noted that the high ratio for those with a bachelor's degree may be artificially high, as jobs requiring more education may attract workers from across the region to a greater degree than lower-skill work.

Nevertheless, the higher jobs-to-unemployed ratio for workers with a bachelor's degree suggests college education can improve the job-finding rate for a worker. The improvement, however, is conditional on the conferral of a degree and is very limited for workers with only an associate degree.⁹

Reflecting the low ratios for those with less education, we also see a low jobs-to-unemployed ratio in occupations with lower entry barriers, such as those in the low-wage service sector (food services, building and ground maintenance, personal services), sales and administrative jobs, and blue-collar jobs (production, construction, and transportation). Detroit has an overwhelming excess supply of unemployed residents whose most recent work experience was in lower-skill, entry-level occupations, compared with the number of available jobs in these areas. Moreover, nearly one-quarter of unemployed workers reported no occupation affiliation because they did not have work experience in the last five years. These workers are likely looking for jobs in low-skill occupations as well, further aggravating the uneven supply and demand in these occupation categories.

Indeed, 58% of unemployed Detroit residents have been unemployed for more than one year and 24% for over five years. Both figures are 50% higher than the state-level averages. Research has shown that the probability of finding a job decreases steadily as the length of unemployment increases due to skill deterioration and employer discrimination (Krueger et al. 2014). The longer unemployment length thus puts these workers at a distinct disadvantage in the labor market.

⁸ The number of unemployed Detroiters by skill attainment is obtained from the American Community Survey (2017) which reports a higher unemployment number of than other official surveys. The jobs-to-unemployed ratios reported here are therefore downward biased in their absolute value and are best used for comparative purposes.

⁹ For this reason, we have combined workers with some college education with high school graduates in the analysis.

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Table 2 - Skill Requirements of Jobs vs. Skill Attainment of Unemployed Detroiters					
	Monthly Job Postings (D@W 2019)		Unemployed Detroit residents (ACS 2017)		Jobs-to-Unemployed Ratio
	# of jobs	%	# of residents (18-64)	%	
<u>BY EDUCATION</u>					
Less than high school	493	9%	9,165	24%	5%
High school diploma or GED	1,867	36%	12,898	33%	8%
Some college/vocational training	104	2%	12,270	32%	
Associate degree	584	11%	2,069	5%	28%
Bachelor's degree or above	2,114	41%	2,107	5%	100%
Missing information	38	1%	N/A	N/A	N/A
<u>BY OCCUPATION</u>					
Production	157	3%	4,339	11%	4%
Construction, installation, and transportation	446	9%	5,618	15%	8%
Food, building Maintenance, and personal care services	354	7%	7,559	20%	5%
Sales and administrative	707	14%	7,722	20%	9%
Health care support	249	5%	995	3%	25%
Management and business	868	17%	513	1%	169%
Computer, engineering and science	970	19%	693	2%	140%
Health care	764	15%	272	1%	281%
Others	394	8%	1,636	4%	24%
Occupation missing/no work experience in the last five years	292	6%	9,162	24%	N/A
Source: DTMB (2019) Pure Michigan Talent Connect Job Postings; American Community Survey (2017) Public Use Microdata					

Second, the uneven supply and demand is in part a result of a spatial mismatch in skill supply and demand in the tri-county area (Wayne, Macomb, Oakland). Table 3 compares the skill requirement of jobs and the skill attainment of unemployed residents in the tri-county area. For the tri-county area as a whole, the jobs-to-unemployed ratios are more equalized across the skill groups. Together with the results from Table 2, the numbers suggest there is a spatial mismatch in skill supply and demand within the tri-county area. While most lower-skill jobs are located outside of the city of Detroit, unemployed workers with lower skill attainment tend to reside within the city. On the contrary, higher-skill jobs are more concentrated in Detroit, while unemployed workers with higher skill attainment tend to live outside of the city.

The finding suggests transportation between Detroit and the rest of the tri-county area is essential for workers with lower skill attainment to access suitable job opportunities in the area. However, it is also

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worth noting that the overall jobs-to-unemployed ratio is very low for the tri-county area compared to other major Michigan cities. Therefore, an increase in the total number of job opportunities and improvements in transportation are equally critical in facilitating job matches for the unemployed workers in the area.

Table 3 - Skill Requirements of Jobs vs. Skill Attainment of Unemployed Tri-County Residents					
	Monthly Job Postings (PMTC 2019)		Unemployed Tri-County Residents (ACS 2017)		Jobs-to-Unemployed Ratio
	# of jobs	%	# of residents (18-64)	%	
<u>BY EDUCATION</u>					
Less than high school	2,513	14%	20,475	18%	12%
High school diploma or GED	7,251	41%	39,054	34%	11%
Some college/vocational training	359	2%	31,513	27%	
Associate degree	1,547	9%	6,894	6%	22%
Bachelor's degree or above	5,766	33%	18,586	16%	31%
Missing information	120	1	N/A	N/A	N/A
<u>BY OCCUPATION</u>					
Production	1,183	7%	9,528	8%	12%
Construction, installation, and transportation	1,540	9%	15,831	14%	10%
Food, building Maintenance, and personal care services	1,347	8%	21,563	19%	6%
Sales and administrative	2,962	17%	25,994	22%	11%
Health care support	1,031	6%	2,139	2%	48%
Management and business	2,187	12%	5,592	5%	39%
Computer, engineering, and science	2,908	17%	3,854	3%	75%
Health care	2,041	12%	1,473	1%	139%
Others	1,279	7%	7,413	6%	17%
Occupation missing/no work experience in the last five years	1,077	6%	23,135	20%	N/A
Source: DTMB (2019) Pure Michigan Talent Connect Job Postings; American Community Survey (2017) Public Use Microdata					

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Third, large shares of entry-level jobs screen candidates on skills, perceived risk, and their mobility.

- *Experience, education, occupational license, and computer knowledge requirements are common.* In Table 5, we show that education and skills matter, with nearly 7 in 10 job openings on Detroit at Work’s website requiring more than one year of work experience and over half requiring more than high school education. Occupational licenses are also important, with 27% of job postings requiring one, a number that matches national estimates. Finally, the digital economy has arrived in Detroit, with 72% of postings requiring knowledge of how to operate a computer.
- *Job postings do not commonly mention drug screening and background checks.* Of all available jobs, only 11% explicitly stated they perform a drug screen and 5% stated they conduct a criminal background check. Those shares get higher when just looking at jobs requiring a high school education or less, which is our proxy for entry-level jobs. For example, we find 16% of entry-level jobs require drug screening. Given that research conducted nationally finds nearly half of workers (48%) reporting some form of drug screening at their place of employment (Engber, 2015), it is likely that more employers do drug screen and conduct background checks but do not explicitly mention these practices in their job postings.
- *Mobility matters in Detroit.* 18% of all job openings in Detroit require a driver’s license. This number rises to 20% for entry-level positions. Similarly, 15% of entry-level jobs require workers to have auto insurance for work purposes, despite the fact that an estimated 60% of Detroiters do not have auto insurance (Reindl, 2017) and those that do pay an exorbitant average premium of around \$5,400 a year (Cooney et al., 2019). A majority of these entry-level jobs also require extensive physical mobility, with 55% of positions involving a significant amount of walking or standing.

Barrier	All Job Openings		Jobs Requiring HS or Less Education	
	Detroit	Tri-county	Detroit	Tri-county
Requires more than 1 year work experience	67%	59%	44%	38%
Requires more than high school education	54%	44%	-	-
Requires an occupational license	27%	25%	17%	14%
Requires computer knowledge	72%	66%	49%	46%
Requires criminal background check	5%	8%	9%	11%
Requires drug screening	11%	11%	16%	14%
Requires walking/standing	39%	45%	55%	60%
Requires driver's license	18%	18%	20%	20%
Requires auto insurance	15%	18%	18%	16%
Total Monthly New Job Positions	62,408	210,664	28,326	117,165

Source: DTMB (2019) Pure Michigan Talent Connect Job Postings

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How likely are job screening requirements to affect unemployed Detroiters?

The digital knowledge gap may prevent 45% of unemployed Detroiters from 72% of D@W jobs and 66% of the job openings in the tri-county area. The digital divide in Detroit has gained much attention in the popular media in recent years (Bach, 2017; Massey, 2019; Wisely, 2020). In Detroit, 45% of unemployed residents have no access to computers at home, three times higher than the state average of 16%. For those with a high school education or less, this rate is even higher at 54%.

Nevertheless, 72% of DESC job postings in Detroit and 66% of postings in the tri-county region were in occupations that require computer use and knowledge. This suggests the lack of digital literacy may prohibit 45% of unemployed Detroit residents from qualifying for two-thirds of available jobs, further limiting their choices in addition to any other mismatch in job skills.

	Jobs require computer knowledge		Detroiters with no computer access in household	
	% of all jobs	% of jobs requiring HS or less	% of all unemployed	% of unemployed with HS or less
DESC jobs	72%	49%	45%	54%
Tri-county jobs	66%	46%		

Source: DTMB (2019) Pure Michigan Talent Connect Job Postings; American Community Survey (2017) Public Use Microdata

Driver's license and auto insurance requirements may prevent 22% of unemployed Detroit residents from 25% of both D@W jobs and tri-county jobs. In recent months, the State of Michigan has made reforms to laws governing auto insurance and proposed reforms to driver's license suspensions to reduce barriers to employment for Michigan residents. Michigan's highest-in-the-nation auto insurance costs likely contributes to the high share of Detroit residents who fail to purchase auto insurance, and Michigan has some of the strictest laws regarding the suspension of driver's licenses for non-driving related reasons. In 2010 alone, Michigan suspended the licenses of 475,000 drivers (Craven, 2018).

While we do not know what share of unemployed residents lack a license or auto insurance, we do know that 22% of unemployed residents do not possess a car, and therefore may not have insurance or a license. This not only prevents them from obtaining the 25% of job postings that require a license or insurance, but also limits their ability to get to any job.

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Table 6: Jobs that Require a Driver's License or Auto Insurance vs. Car Access in Detroit				
	Jobs require driver's license or auto insurance		Detroiters with no car in household	
	% of all jobs	% of jobs requiring HS or less	% of all unemployed	% of unemployed with HS or less
DESC jobs	25%	18%	22%	26%
Tri-county jobs	25%	17%		
Source: DTMB (2019) Pure Michigan Talent Connect Job Postings; American Community Survey (2017) Public Use Microdata				

Very few unemployed Detroiters have state occupational licenses, which are required for 27% of D@W jobs and 25% of jobs within the tri-county region. In Michigan, the state mandates that individuals receive a license before they can legally perform certain types of jobs, and Michigan ranks roughly in the middle of all U.S. states in the share of jobs with license requirements (Skorup, 2017). Such state-level licensure requirements were found in nearly 27% of all D@W job postings and 25% of the tri-county jobs. This may be a lower bound for the share of jobs requiring an occupational license since we did not include licensure requirements specific to Detroit. Meanwhile, 95% of unemployed Detroit residents report not having an occupational license. If we only consider non-college jobs in both Detroit and the tri-county region, the percentage of jobs requiring a license drops substantially but is still much higher than the percentage of residents that have such licenses. In sum, occupational licenses may be a severe barrier to employment in Detroit.

Table 7: Jobs that Require a State Occupational License vs. Licensure in Detroit				
	Jobs require an occupational license		Detroiters with no occupational license	
	% of all jobs	% of jobs requiring HS or less	% of all unemployed	% of unemployed with HS or less
DESC jobs	27%	17%	95%	96%
Tri-county jobs	25%	14%		
Source: DTMB (2019) Pure Michigan Talent Connect Job Postings; Current Population Survey (2016-2019) Public Use Microdata				

39% of the D@W job postings were in occupations for which walking or standing is likely necessary, with the percentage increasing to 45% within the tri-county region. If we consider only non-college jobs, these rates climb to more than half of all available jobs for both Detroit and the tri-county region. Thus, the choice of jobs for residents with a physical disability is significantly reduced.

Although only 5% of job seekers in Detroit have reported physical disability, the physical disability rate is 25% among working-age adults who were not in the labor force (not working and not seeking employment). For these workers, their physical disability, combined with a limited choice of jobs, could play a role in keeping them on the sidelines of the labor market.

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	Jobs require walking or standing		Detroiters with a physical disability	
	% of all jobs	% of jobs requiring HS or less	% of all unemployed	% of unemployed with HS or less
DESC jobs	39%	55%	5%	6%
Tri-county jobs	45%	60%		
Source: DTMB (2019) Pure Michigan Talent Connect Job Postings; American Community Survey (2017) Public Use Microdata				

Conclusion

Overall, our analysis suggests that even prior to the COVID-19 crisis, unemployed Detroiters encountered significant barriers to work as a result of low overall job demand in the area and a mismatch between the skill requirements of the jobs and the skill attainment of the workers. While there is an excess supply of workers with lower skill attainment, there is a scarcity of demand for entry-level jobs. The data also suggest there is a spatial mismatch of jobs within the tri-county area, with lower-skill jobs more likely to be located outside Detroit and lower-skilled unemployed residents more likely to live within the city.

To facilitate job matches for the unemployed workers in Detroit, both an increase in the total number of entry-level job opportunities and improvements in transportation are equally crucial. The increase in demand for entry-level jobs might be achieved by encouraging employers to relax job requirements or by providing a pathway for applicants to meet the requirements. In a similar vein, state licensure requirements are also potential roadblocks for the unemployed. These burdens can be lessened by a combination of employers providing on-the-job training that enables employees to obtain their licenses while working and the state matching unlicensed job applicants with programs designed to help the underserved obtain professional training. Moreover, transportation between Detroit and the rest of the tri-county region is vital for lower-skilled workers to pursue job opportunities outside of their neighborhoods. As most unemployed residents do not own a car, a robust transit system is paramount for providing access to better opportunities for those in greatest need. Ultimately, in tackling issues from both the labor demand and labor supply sides, government leaders from across the region can expand employment opportunities for unemployed residents both in Detroit and the greater tri-county area.

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