CMAP

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MIDDLE SKILL JOB OPPORTUNITIES DECLINED ACROSS PEER METROPOLITAN AREAS

This Policy Update is the third in a series examining occupation and employment patterns in metropolitan Chicago over the past several decades. The first Policy Update examined labor market trends at the national level and reviewed economic research explaining these trends. The second honed in on how our unique industrial mix and workforce shaped employment trends in the region. This third update compares shifts in peer metropolitan areas.

A growing body of research sheds light on how the nature of work is changing. The skills that workers need to access and retain quality jobs are changing. Job creation is increasingly concentrated in occupations on the high and low end of the skill distribution. Researchers attribute these changes to a number of national and regional factors. In the Chicago region, technology, demographic shifts, and deindustrialization had large impacts on employment trends.

Yet, these factors are not unique to metropolitan Chicago. Most metropolitan regions across the U.S. experienced varying degrees of labor market polarization with the rapid influx of technology in the workplace, shifts towards a service-dominated economy, and reshuffling of the population by age, race, and ethnicity. Understanding how employment in other regions have responded to these forces illuminates both the resilience and inclusiveness of the Chicago region's economy.

This Policy Update compares patterns of job polarization in metropolitan Chicago to peer regions including Los Angeles, New York, and Washington, D.C. Findings reveal a shared challenge across all four regions: falling employment share in middle skill jobs. The unique industrial mix of each region helps to explain variations in how job polarization played out across the nation. Advancements in technology, paired with structural shifts, drove many of these employment trends and had significant impacts on production occupations. Regions with a historical concentration of manufacturing employment exhibit pronounced shifts.

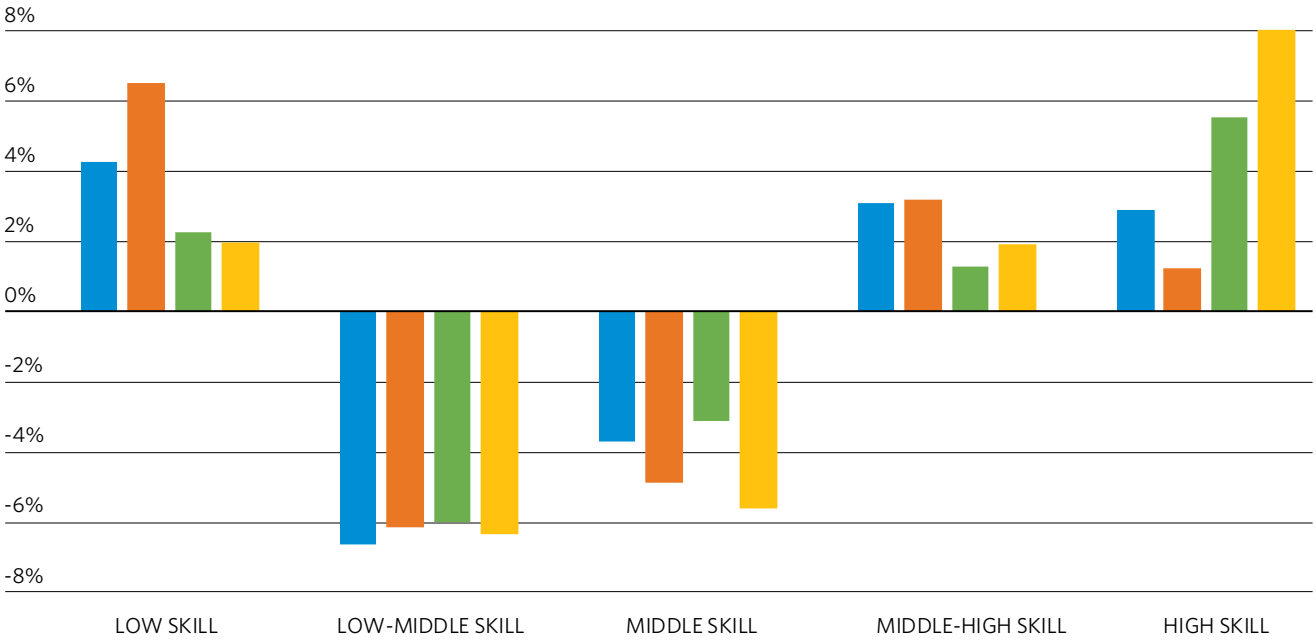
Polarization varied across regions in the U.S.

Between 1980-2016, the total number of jobs grew in the U.S. economy, but employment growth was not uniform across occupations. Figure 1 illustrates the change in employment share of occupational "skill-buckets" across peer regions. Although regions vary some, high skill and low skill jobs generally increased as a share of regional employment, while middle skill jobs decreased. This hollowing out of the labor market is often termed "job polarization."

Change in share of employment in select regions, 1980-2016, by occupational skill level

Note: The geographies for these regions differ from traditional U.S. Census Bureau definitions and change slightly over time. See About the Data section for more information. Median occupational wage in 1980 is used as a proxy for skill.

Source: Chicago Metropolitan Agency for Planning analysis of Integrated Public Use Microdata Series, 1980-2000 Decennial Census and 2010-16 American Community Survey data.



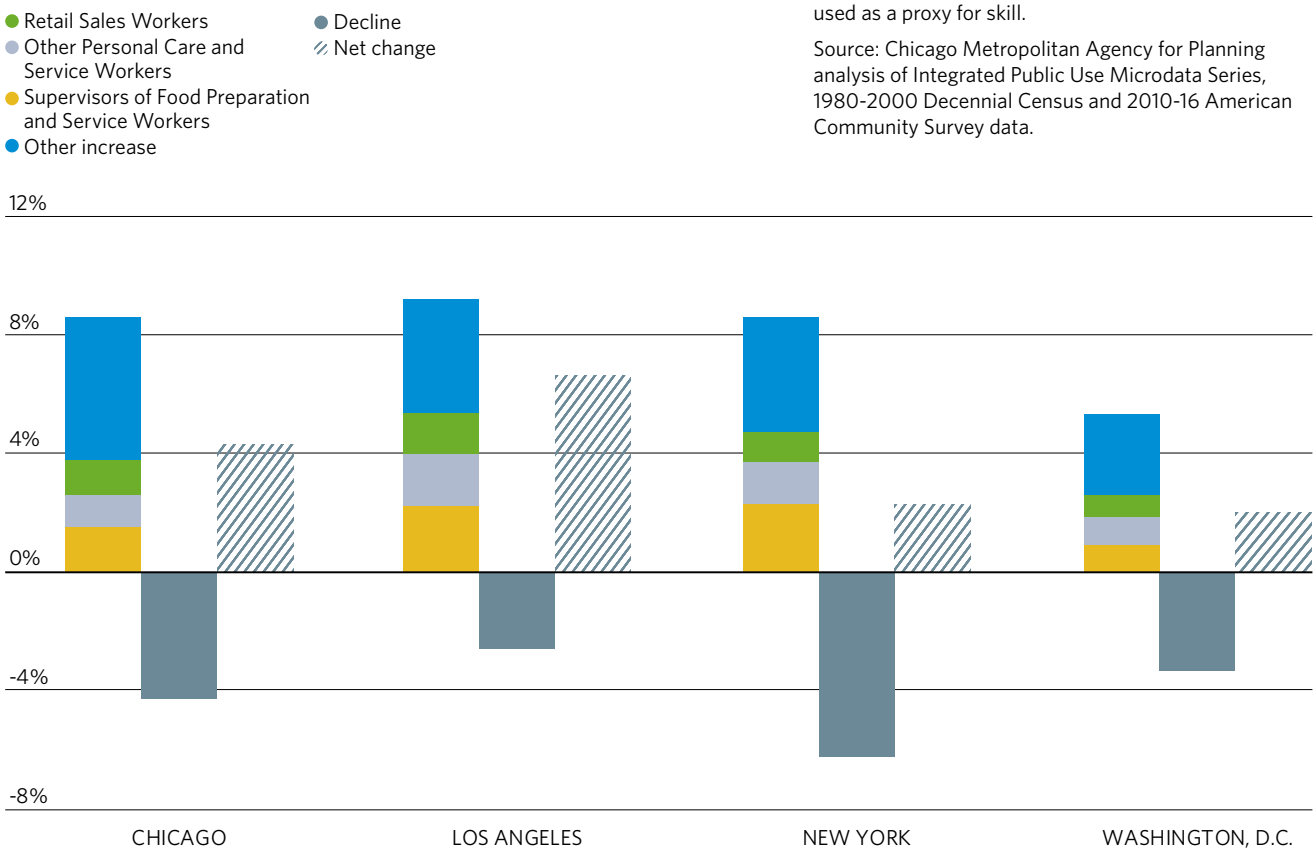
Job polarization varies by region. In metropolitan Chicago and Los Angeles, the curve is skewed left: Employment grew more in low skill jobs than high skill jobs. In New York and Washington, D.C. the curve is skewed right: Employment grew more in high skill jobs than low skill jobs. Across all regions, however, employment fell in middle skill jobs.

Diverse factors yielded low skill occupation growth

Theoretically, occupation groups that draw on similar skills and perform similar tasks should respond to forces in the same way. But in reality, the growth rates of occupations may vary widely within a skill bucket. Data reveal different employment outcomes between otherwise similar jobs. For example, Retail Sales Workers and Other Sales & Related Workers are both low wage occupations that require use of manual skills and perform non-routine tasks. Despite their similarities, Retail Sales Workers grew in employment share between 1980-2016, while Other Sales & Related Workers fell across all four regions.

Embedded in the overall growth or decline of each skill bucket were occupations that flourished and others that contracted. Figure 2 separates the change in employment share of the lowest skill occupations by the direction of change. This closer look reveals that the majority of the variation in low skill employment across regions was driven by occupations that declined in employment share.

Change in share of low skill employment in select regions, 1980-2016, by select occupations



Note: The geographies for these regions differ from traditional U.S. Census Bureau definitions and change slightly over time. See About the Data section for more information. Median occupational wage in 1980 is used as a proxy for skill.

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For example, New York had a large share of Textile, Apparel and Furnishing workers in 1980. Employment in the Textile and Apparel industries declined between 1980-2016 due to production facilities moving abroad, and increased automation with computer-controlled cutters and semiautomatic sewing. Improved international freight and logistics also played a role in shifting production abroad. The decline in employment in this low skill occupation suppressed regional growth rates for the skill bucket overall.

By contrast, increases in the personal service workforce drove growth in the skill bucket. Across peer regions, three common occupations grew substantially: Supervisors of Food Prep & Serving Workers, Other Personal Care & Service Workers, and Retail Sales Workers. Research shows that as more women entered the labor force and the population continued to age, demand increased for workers to replace tasks women traditionally performed in the home, such as housecleaning and childcare. In addition, the increase of workers in high skill, high wage jobs also increased the demand for personal services such as hairdressing and dry cleaning.

The tasks and skill composition of middle skill workers have made them particularly susceptible to automation, or the substitution of computer for human labor. At a minimum, tasks required of these workers shifted as computers entered the workplace. For example, demand for telemarketers and administrative assistants has decreased and the work has been streamlined to a smaller labor force.

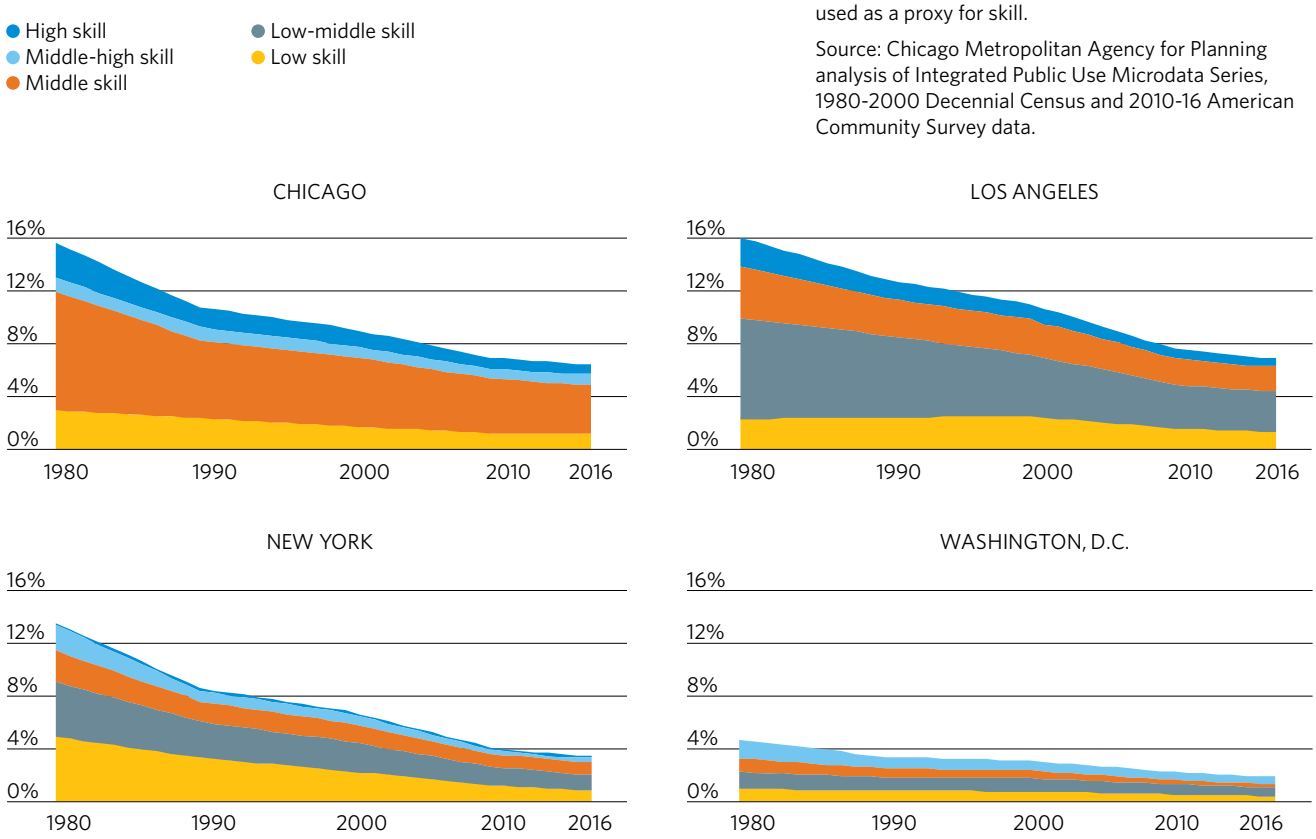
Technological changes have affected many types of jobs. For example, computers can now assume many functions typically performed by insurance underwriters and accountants—two high skilled jobs. On the other hand, technology may complement the tasks performed by other high skill occupations, such as lawyers and managers, and actually increase the demand for these occupations. These relationships are reflected in the data. Across all four regions, Top Executives, Operations Specialties Managers, and Computer Occupations drove the increase in employment of high skill workers.

Technology curtailed some demand for production occupations

Historically, many tasks performed by production occupations were repeatable, predictable, and programmable. Industrial robots have assumed some welding, assembling, sorting, and packaging duties in industries such as automobile manufacturing, pharmaceutical manufacturing and food processing. Technology also indirectly decreased the demand for production occupations by magnifying the effects of off-shoring and deindustrialization; as technology became cheaper and more reliable, moving production abroad became increasingly feasible.

Figure 3 shows production occupations as a share of regional employment between 1980-2016 by skill bucket. Share of employment in production occupations declined by nearly nine percentage points in each of the Chicago, Los Angeles, and New York regions and approximately three percentage points in Washington, D.C. These declines reflect the long-term decline of manufacturing employment nationally.

Share of total employment in production occupations in select regions, 1980-2016



Note: The geographies for these regions differ from traditional U.S. Census Bureau definitions and change slightly over time. See About the Data section for more information. Median occupational wage in 1980 is used as a proxy for skill.

Source: Chicago Metropolitan Agency for Planning analysis of Integrated Public Use Microdata Series, 1980-2000 Decennial Census and 2010-16 American Community Survey data.

Despite this general trend, some notable differences exist across peer regions. Production occupations in the Chicago region offered higher paying jobs compared to other regions. In 1980, over 80 percent of production jobs in the Chicago region were at least middle skill. Only 40 percent of production jobs in Los Angeles and 30 percent of production jobs in New York were at least middle skill. The historically large number of higher-wage jobs in the Chicago region reflects the region's strength and competitive advantage in manufacturing.

Yet, metropolitan Chicago's manufacturing strength also presents a challenge. Advancements in technology eroded the demand for production workers. A structural shift away from manufacturing hit the Chicago region particularly hard, given its historical strengths in goods-producing industries. The Chicago region must find innovative ways, through collaboration with educational institutions and leaders in the industry, to make human labor indispensable.

Looking ahead

Technology has driven employment change across the occupational skill distribution and across peer regions. Many factors have shaped job polarization in each region—particularly its industry composition. However, similar patterns appeared in peer regions across the nation, as employment grew in low skill personal service occupations, declined in production occupations, and increased in high skill management and computer occupations.

The Chicago region can look at this as an opportunity to reshape the workforce and industry composition of our region to align with the principles of forthcoming ON TO 2050 plan—resilience, prioritized investment, and inclusive growth. In particular, ensuring that our region grows inclusively will require prioritizing industries that offer stable, quality jobs with pathways for upward mobility. The region may also consider developing strategies for investing in industries that complement technology. Above all, continued collaboration of educational institutions, workforce development entities, and the private sector is necessary to ensure that our region grows resiliently.

About the Data

Employment in this analysis is restricted to workers between the ages of 18-64 who are currently employed and work more than 20 hours a week. Military occupations are excluded. Median occupational wage in 1980 is used as a proxy for skill. The regional geographies used in the analysis differ from traditional U.S. Census Bureau definitions and change slightly over time due to data restrictions. The counties used in all years in the Chicago region analysis are Cook, DuPage, Grundy, Kane, Kendall, McHenry, Lake and Will. The 1980 analysis includes LaSalle County, and the 1990 analysis includes DeKalb County. The geography of the other regions are constant over time. The county used in the Los Angeles region is Los Angeles. The counties used in the New York analysis are Bergen in New Jersey, and Bronx, Dutchess, Kings, New York, Queens, Richmond, Rockland, and Westchester in New York. The counties used in the Washington, D.C. analysis are Washington, D.C.; Charles, Montgomery, Prince George's, and St. Mary's in Maryland; and Alexandria City, Arlington, and Fairfax in Virginia.

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