

# Chapter 18

## Growing Income Inequality and Socioeconomic Segregation in the Chicago Region



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**Abstract** Income inequality in the United States has been growing since the 1980s and is particularly noticeable in large urban areas like the Chicago metro region. While not as high as New York or Los Angeles, the Gini Coefficient for the Chicago metro area (.48) was the same as the United States in 2015 but rising at a faster rate, suggesting it will surpass the US national level in 2020. This chapter examines the Chicago region's growing income inequality since 1980 using US Census data collected in 1990, 2000, 2010, and 2015, focusing on where people live based on occupation as well as income. When mapped out, the data shows a city and region that is becoming more segregated by occupation and income as it becomes both richer and poorer. A result is a shrinking number of middle-class and mixed neighbourhoods. The resulting patterns of socioeconomic spatial segregation also align with patterns of racial/ethnic segregation attributed to historical housing development and market segmentation, as well as recent efforts to advance Chicago as a global city through tourism and real estate development.

**Keywords** Chicago region · Socio-economic segregation · Spatial segregation · Occupational structure

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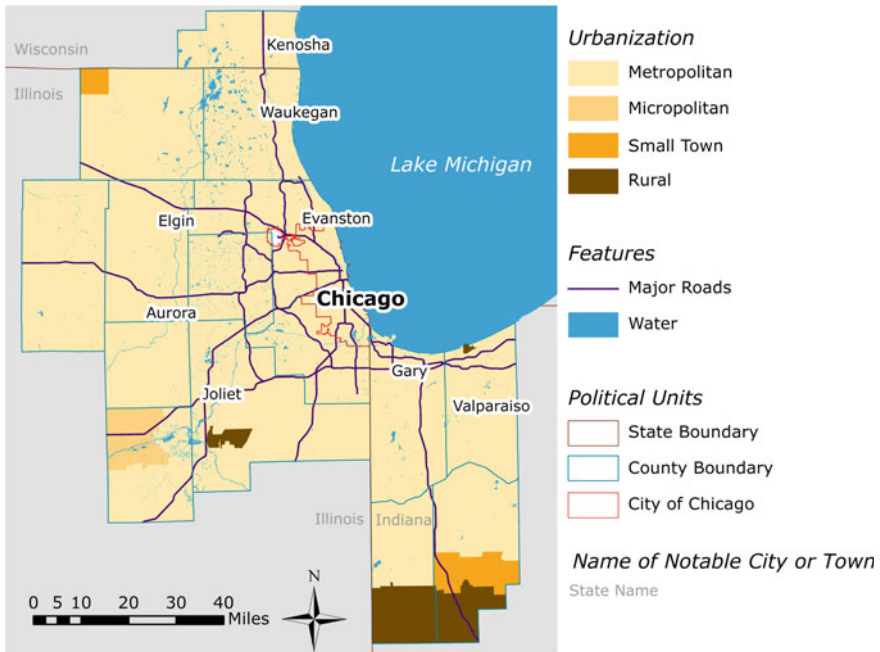
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## 18.1 Introduction

In the United States, changes in the relative size and wages of different occupational groups (i.e., occupational structure) are central to understanding socioeconomic segregation (Mouw and Kalleberg 2010). By socioeconomic segregation, we mean ‘residential segregation of population groups based on occupation and income’ (Tammamaru et al. 2016). It is empirically shown that there is a strong relationship between occupations, socioeconomic status, and resulting income distribution in American cities. Mouw and Kalleberg note that ‘Between-occupation changes explain 66% of the increase in inequality from 1992/1994 to 2007/2008, and the explanatory power of occupations (the proportion of inequality explained by occupation codes) has risen from 0.382 in 1983 to 0.433 in 2008 (2010: 427). Similarly, Glaeser et al. (2009) show that occupations are a better indicator than conventional measures of human capital (i.e., the share of adults with college degrees and the share of adults who are high school graduates) in explaining income inequality. The same study also notes that ‘not only do contemporaneous skill levels predict inequality, but inequality of skills in 1980 predicts an increase in income inequality since then’ (2009: 630). This research supports using occupations as a proxy for determining residents’ socioeconomic status.

In this chapter, we examine socioeconomic segregation in the Chicago region through the lens of occupations as well as income. The region is an interesting case given Chicago’s industrial history and its evolution to become a post-industrial global city, growing as a ‘command and control’ centre for finance and banking as well as the commodities market (Abu-Lughod 2000). However, it has not been a straight path to social polarization as Sassen (1991) would predict, and likely because, as Hamnett (1994) might suggest: Chicago’s economic trendlines did not align with Los Angeles and New York in the 1970s and 1980s. In contrast, the region experienced a more prolonged decline in manufacturing, primarily because of the diversity within the industry. Further, while it is consistently in the top ten in the United States for receiving immigrants, the net gain in population has not offset out-migration and shrinking family size (Pletz 2019). Finally, a relatively large African American population in the City is often competing with immigrants for lower-paid jobs.

Still, Chicago has worked hard to make itself a global city by building upon its assets. This includes its location, which is a major crossroad for the movement of goods to and from national and international destinations through different modes of freight transportation (rail, truck, air and water). Large scale public works helped transform Chicago’s downtown, its river and lakefront, and its public housing (Bennett 2012). At the same time, the city ‘incentivized’ private investment through tax-increment financing and other tax breaks. This includes the addition of more than 40,000 new units of higher-end housing since 2010 (about 3% of the total housing stock), with more than half in the city centre and nearby neighbourhoods (Realpage.com 2018). While these efforts have attracted higher-income people to live in the region, tourism has attracted nearly 58 million visitors in 2018 (Rackl 2019). To



**Fig. 18.1** Chicago metropolitan region

accommodate these newcomers, there has been a significant expansion of the retail, entertainment, accommodation and personal services sectors, which generally pay lower wages and offer limited benefits.

## 18.2 The Chicago Region

The Chicago metro region is comprised of the 14-county Chicago-Naperville-Elgin Metropolitan Statistical Area (MSA) that includes three states (Fig. 18.1).<sup>1</sup> Approximately 9.5 million people live in the MSA, with more than 90% in nine north-eastern counties in the state of Illinois and the remainder in the states of Indiana and

<sup>1</sup>Metropolitan statistical areas consist of the county or counties (or equivalent entities) associated with at least one urbanized area of at least 50,000 people, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties. A micropolitan statistical area consists of the county or counties associated with at least one urban cluster of at least 10,000 but less than 50,000 people, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties. The Chicago MSA contains 2,215 census tracts, which are bounded areas used by the US Census Bureau to collect data and to allow statistical comparisons over time. Based on the population size of between 1,200 and 8,000 people (the optimum size is 4,000 people), census tracts are often equated with neighbourhoods.

Wisconsin; four counties in northwestern Indiana and one county in southeastern Wisconsin.<sup>2</sup> The Chicago region is the third most populous MSA in the United States after Los Angeles and New York, and it is the tenth-largest among the OECD metro-regions. It is approximately 7,196 square miles (18,638 km<sup>2</sup>) with a population density of about 1,325 people per square mile. While now considered one nearly continuous urbanized area, the region began as a collection of settlements, which at the time were mostly farm centres or industrial towns (Keating 2005). Today, the region has very little land that is classified as rural and most of the industrial towns are now suburbs of the City of Chicago, which is the largest settlement in the region with 2.7 million people. The next largest is the suburb of Aurora, which has about 200,000 people.

### 18.2.1 *The Economy*

The Chicago region is a major employment centre with about 4.7 million people employed in the region in 2015, which was a 9.3% increase from 2000. As with many older urban areas, there has been a shift in the location of work as new employment centres have formed outside the city centre in suburban locations. However, the City of Chicago remains the home to many corporate headquarters and has been aggressively recruiting new firms with attention to technology. The region's top 10 employment clusters based on employment size are: Business Services (383,000), Distribution and Electronic Commerce (250,000), Education and Knowledge Creation (135,000), Financial Services (90,000), Transportation and Logistics (85,000), Hospitality and Tourism (79,000), Marketing, Design and Publishing (78,000), Insurance Services (53,000), Food Processing and Manufacturing (36,000), and Production Technology and Heavy Machinery (35,000).<sup>3</sup>

About 63% of the population is of working age (18–64 years old; the median age is 37.4 years). A significant concern for the region and generally in the United States is that the average age of workers in manufacturing is much higher (around 55 years old). While employment in this segment is declining, there still is a demand for workers, but fewer younger people are filling job openings in this industry. Workforce development efforts are focused on closing the growing skills gap needed to fill manufacturing jobs and other tech-related sectors. While unemployment is relatively low at around 5% for the region, it varies by race/ethnicity, with unemployment among working-age African Americans about three times higher than Whites and two times higher than Latinos (CMAP 2018). In addition, about 20% of working-age people do not participate in the labour force at all. This includes people who have

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<sup>2</sup>The source of socio-economic data in this section, unless noted otherwise, is the US Census Bureau (2017) American Community Survey 1-year estimates for the Chicago-Naperville-Elgin, IL-IN-WI Metro Area.

<sup>3</sup>These data are from The U.S. Cluster Mapping Project <https://www.clustermapping.us/>.

been unemployed for more than two years, people with disabilities and others who may be at-home caregivers.

A draw for employers to the Chicago region is a relatively well-educated workforce. About 89% of all adults who are 25 or older have a high school degree or higher, which is about the same as the US rate; however, for those holding a bachelor's degree or higher (38%), the region is above the US average (32%).

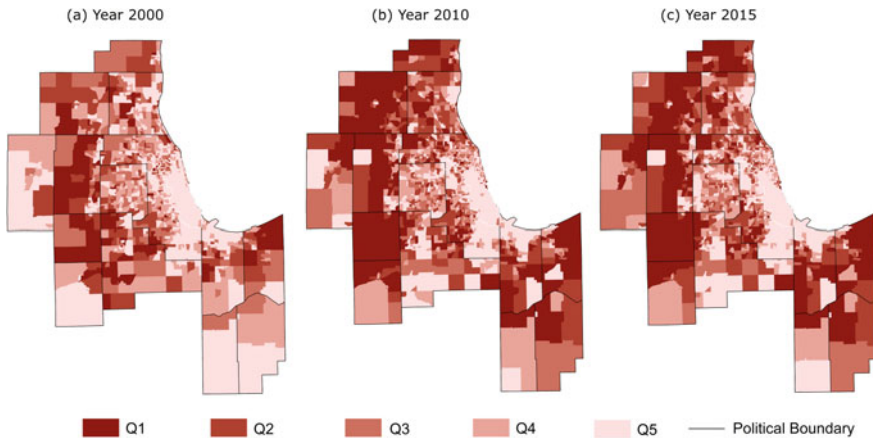
### ***18.2.2 The Welfare System***

The United States is a mix of centralized and decentralized welfare policies and programs administered through state and local governments. Most public support programs for households are means-tested regardless of source, while federal funds aimed at community improvement and economic development are based on entitlement formulas determined by the level of poverty and other conditions indicative of need (e.g. housing quality) in a city or county. Income support is based on household needs and income level. Only about 2% of the households in the Chicago region receive some form of public assistance or welfare and an additional 4% get supplemental income due to having a disability. In addition, about 9% of households receive monthly public assistance for food (i.e. food stamps). Generally, income support does not move most people out of poverty, which means they usually live in lower-income communities where they can find affordable housing.

### ***18.2.3 Demographics***

With an average of 2.7 persons per household, there are 3,488,312 households in the region with 30% living in the City of Chicago. Of this total, 60% are couples (with and without children), which is about the same as the US ratio. The remaining portion is split into households of non-related people (e.g., roommates, unmarried couples), and single adults with or without children. The racial makeup of the region is 53% Non-Latino White (White), 22% Latino (any race), 16% Non-Latino African Americans, and 7% Asian. The remaining population is either Native American or Pacific Islander or people who identified as more than one race. In comparison to the United States, the region is more diverse, with higher rates of Latino, African Americans and Asians, and slightly lower rates of Non-Latino Whites. This diversity overall in the region is expected to continue as the Asian and Latino population is projected to grow.

Residentially, however, the region is highly segregated by race and ethnicity, and especially divided by large concentrations of Whites that live in the region's suburban neighbourhoods as Fig. 18.2 illustrates. The greatest rate of segregation is between Whites and Blacks with a Dissimilarity Index of 0.753 followed by 0.524 for Latinos and Non-Latinos (Governing Magazine 2018). While this is an improvement from



**Fig. 18.2** Spatial distribution of Non-Latino White population, 2000, 2010, 2015

previous decades, the current data suggests there has been no change since 2010 in the Black-White score. One reason may be the increase in the White population in the City of Chicago that is concentrating on the north side and in the city centre. Most are in the 25- to 34-year-old age group and often single, without children. At the same time, there has been a decline in the Black population, mostly families with children on the south and west sides of the city. When combined, it appears that young White people are *replacing but not necessarily displacing* African American families from Chicago. This is important to keep in mind when looking at changes in socioeconomic patterns.

### 18.2.4 *The Housing System*

Housing in the United States is primarily privately owned property, purchased with a mortgage from a financial institution (the typical length of the loan is 30 years). Currently, nearly 64% of households in the Chicago region are homeowners, with most living in single-family homes (detached and attached). Ownership is generally higher in suburban and exurban areas (75–80%) and lower in the City of Chicago (45%). The median value of a single-family home in the region is about \$240,000, which while slightly higher than the United States, is still below pre-recession values for the region. In contrast, median rents are at their highest at nearly \$1,100 a month, which is about the same as a median mortgage payment. As a result, more than half of the renters in the region are ‘burdened’ because of their low incomes (i.e., paying more than 30% of income for housing costs) and most are very low income. In comparison, only 34% of owners are burdened, and most of them earn higher incomes.

The region does have public housing and other forms of subsidized housing via rental assistance programs and funding for development; however, it only benefits about 17% of renters. Public housing has also contributed to economic and racial segregation since most of it was built in the City of Chicago in the 1950s and 1960s in predominantly African American communities. While housing choice vouchers have given families the opportunity to use their rental assistance anywhere in the region, most voucher holders live in lower-income areas where there is more affordable rental housing available.

As the following analysis illustrates, there are clear patterns of socioeconomic concentration and segregation. While tied historically to uneven development, most is attributed to long-standing lending and real estate practices coupled with discrimination based on race and ethnicity (MPC 2017). Despite it being illegal since the 1960s in the United States to discriminate based on race or ethnicity in both the housing and labour market, changing the racial, spatial patterns has been slow, especially in suburban areas where Whites have historically had higher income levels, better access to capital and more personal wealth than non-Whites. This divide is evident in the rates of ownership and home values by the three major population groups in the region: Blacks are at 41% ownership with a median housing value of \$140,000, Latinos have a 53% ownership rate and median home value of \$160,000, and Whites have a 76% ownership rate and median home value of \$225,000 (Institute for Research on Race and Public Policy 2018).<sup>4</sup>

## 18.3 Analysis and Results

### 18.3.1 *Income Inequality*

Income inequality has increased considerably in the Chicago region since 1980 and at a faster rate than in the United States (see Table 18.1).<sup>5</sup> The region's Gini coefficient increased nearly 36% from 0.35 in 1980 to 0.48 in 2015, while it increased only 19% in the country. This trend is important considering that in 1980, Chicago's Gini coefficient was well below the United States, and how it has grown at a much faster rate in the last 15 years (13.3% compared to 3.7%).

This pattern is consistent with the global city literature, which posits that cities such as Chicago, which serve as command and control centres in the world economy and help sustain a polarized labour force in terms of skill and wage levels (Sassen 1991; Zhong et al. 2007). Faster growing inequality in Chicago also suggests that

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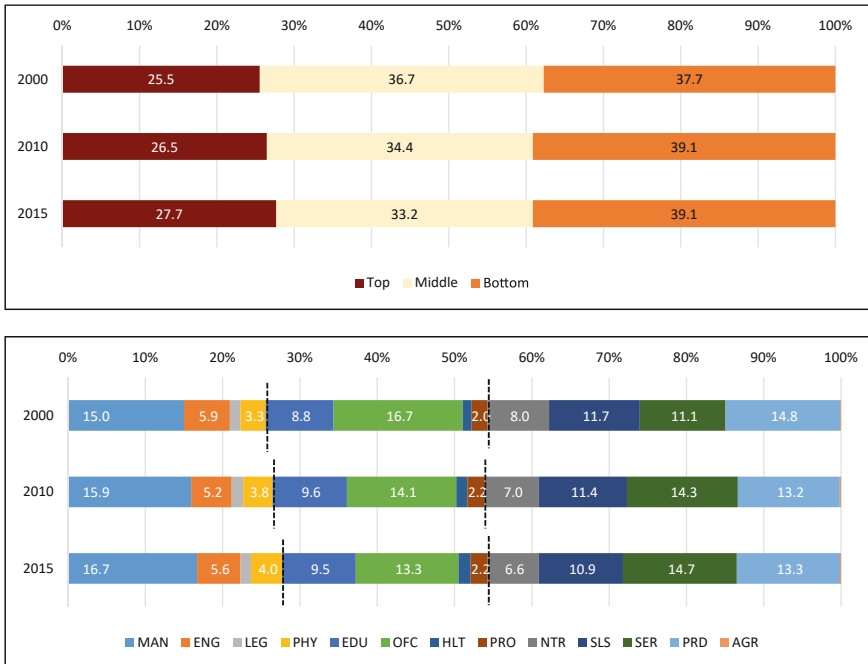
<sup>4</sup>This report used data from the US Census, American Community Survey, 2010–2014.

<sup>5</sup>The Gini index was constructed with data from the Integrated Public-Use Micro-Samples (IPUMS) for the 1980, 1990, and 2000 US Censuses and 2013–2017 American Community Survey. We use household income, which means that single households and households with children are evaluated the same. Using household income instead of per capita income is consistent with most studies conducted in the US (Glaeser et al. 2009; Florida and Mellander 2016).

**Table 18.1** Gini coefficient for Chicago region and United States, 1980, 1990, 2000, 2010, 2015

	1980	1990	2000	2010	2015	1980–1990 (%)	1990–2000 (%)	2000–2010 (%)	2010–2015 (%)
Chicago region	0.35	0.40	0.42	0.47	0.48	12.2	7.4	9.8	3.2
United States	0.40	0.42	0.46	0.47	0.48	6.2	7.9	1.7	1.9





Note: Please see Appendix for occupational description.

Fig. 18.3 Distribution of occupational groups 2000, 2010 and 2015. Note Please see Appendix for occupational description

drivers of income inequality such as disparities in educational attainment and returns to human capital, and changes in occupational structure, are more pronounced at the regional level than at the national level. Projections for employment by occupation groups in 2026 support this trend continuing and the middle occupational groups continuing to shrink faster in Illinois than the nation.<sup>6</sup>

### 18.3.2 Occupational Structure

The following data suggests that the period preceding the 2008 recession and the recovery after affected growth in occupations unevenly. Figure 18.3 shows the middle groups shrinking before and after the recession, decreasing 3.5% points between 2000 and 2015, while the top and bottom groups grew by more than 2 and 1% points, respectively. Looking more closely at the distribution of occupations within

<sup>6</sup>Based on data from the Illinois Department of Economic Security, Illinois will change its distribution of occupations by 2026 as follows: Top (+0.6), Middle (-1.1), Bottom (+0.5), while the US will change: Top (+0.8), Middle (-0.7), Bottom (-0.1). The Chicago region population is approximately 70% of the state.

these three categories, we see that the middle group has not decreased proportionately across occupations and nor have the top and bottom groups increased proportionately between 2000 and 2015.

### 18.3.3 *Dissimilarity Index*

Looking at the segregation of top and bottom occupation groups, the Chicago region's Dissimilarity Index appears to also be rising, increasing from 0.31 in 2000 to 0.32 in 2010 to 0.33 in 2015. This trend suggests a high degree of residential segregation based on occupations, where nearly a third of the employed population with top occupations (or bottom occupations) would have to move from one neighborhood to another in order to produce a completely even distribution of the two occupational groups in the region.<sup>7</sup> There are several potential explanations for the change in the DI during this time period. An important factor to consider is the recession caused by the financial and housing market crash in 2008, which contributed to a significant increase in unemployment by 2010 (10.6%, up from 4.3% in 2000) that has nearly returned to post-recession rates by 2015 (5.9%) (FRED 2019). The increase in the DI scores since 2000 suggests that new employees that joined the region's labour force in the top and bottom categories disproportionately lived in—or chose to move to—neighbourhoods with an already high concentration of these respective groups, therefore exacerbating rather than reducing existing occupational spatial segregation.

Tables 18.2 and 18.3 provide evidence of the degree to which residents with different occupations live in the same neighborhood by computing DI for every occupation pair. Dissimilarity Index values between occupations provide a more detailed measure of evenness in residential distribution based on occupations in the region. Several patterns emerge. First, DI values are relatively stable between 2000 and 2015, indicating that the overall residential pattern based on occupations has not changed significantly in the last 15 years. Second, DI values between top occupations (e.g. MAN and ENG) or middle occupations (e.g. PRD and SER) are relatively small, suggesting that residents with similar socioeconomic status tend to live in the same neighbourhoods. Third, the highest DI values are observed between top and bottom occupations.<sup>8</sup> This suggests that residents in top and bottom occupations

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<sup>7</sup>In order to check the robustness of the results to differences in how top and bottom occupations are defined, we constructed two alternatives DIs using different definitions, first restricting the top occupational category to the top three paying occupations while holding the bottom constant, and then we kept the top occupational category the same and expanded the bottom category to include a middle occupation (i.e. Office and administrative support occupations). The results are not significantly different from those presented in the text.

<sup>8</sup>Dissimilarity between Agriculture (AGR) and top occupations (MAN, ENG, LEG, PHY) is the highest, but we do not want to emphasize this pattern as AGR exhibits high DI value with all occupations in general. Also, AGR occupations account for a very small share of the regional total (around 0.1%) in any given year, and located in isolated, rural parts of the region.

**Table 18.2** Dissimilarity indexes (multiplied by 100) by occupation, 2000 and 2010

	MAN	ENG	LEG	PHY	EDU	OFC	HLT	PRO	NTR	SLS	SER	PRD	AGR	UNE	TOP	MID	BOT
MAN		22	39	24	22	29	44	46	40	20	38	43	86	39			
ENG	18		45	30	26	32	46	49	44	26	40	46	87	42			
LEG	35	41		42	43	53	60	61	61	46	57	63	89	58			
PHY	21	27	37		28	34	44	48	43	27	41	46	86	43			
EDU	20	24	37	23		26	41	41	38	23	32	39	85	33			
OFC	26	29	49	29	23		36	35	25	21	22	25	84	23			
HLT	37	38	54	35	32	27		45	39	39	40	41	84	39			
PRO	42	45	57	42	36	28	35		40	40	38	40	85	35			
NTR	37	40	57	38	35	21	32	34		32	27	24	80	30			
SLS	16	22	41	22	19	18	31	36	27		28	33	85	30			
SER	36	38	53	38	29	19	31	31	23	26		21	83	21			
PRD	42	44	60	43	37	23	34	34	20	31	17		81	25			
AGR	79	78	85	78	78	75	76	78	68	76	72	69		85			
UNE	49	52	62	51	43	35	43	39	42	42	31	35	78				
TOP																26	32
MID															25		15
BOT															31	13	

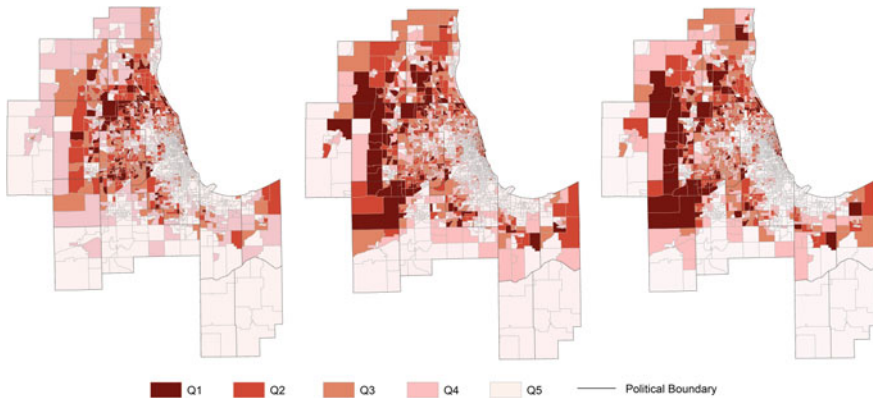
Note The lower quadrant presents DI values for 2000 while the upper quadrant presents DI values for 2010

**Table 18.3** Dissimilarity indexes (multiplied by 100) by occupation, 2010 and 2015

	MAN	ENG	LEG	PHY	EDU	OFC	HLT	PRO	NTR	SLS	SER	PRD	AGR	UNE	TOP	MID	BOT
MAN		20	37	22	20	28	40	44	41	20	37	43	85	51			
ENG	22		43	27	24	31	42	47	44	26	39	46	85	53			
LEG	39	45		42	41	52	59	61	62	46	57	63	90	63			
PHY	24	30	42		26	32	41	46	43	27	41	46	86	54			
EDU	22	26	43	28		25	38	39	38	21	31	39	84	45			
OFC	29	32	53	34	26		32	33	25	19	21	25	81	39			
HLT	44	46	60	44	41	36		43	37	36	36	39	81	50			
PRO	46	49	61	48	41	35	45		40	38	36	39	84	45			
NTR	40	44	61	43	38	25	39	40		31	26	23	78	46			
SLS	20	26	46	27	23	21	39	40	32		26	32	83	43			
SER	38	40	57	41	32	22	40	38	27	28		19	81	34			
PRD	43	46	63	46	39	25	41	40	24	33	21		79	39			
AGR	86	87	89	86	85	84	84	85	80	85	83	81		85			
UNE	39	42	58	43	33	23	39	35	30	30	21	25	85				
TOP																27	33
MID															26		15
BOT															32	15	

Note The lower quadrant presents DI values for 2010, while the upper quadrant presents DI values for 2015

are more segregated from each other than each is with residents in middle occupations. However, it is notable that education (EDU) and sales (SLS) occupations exhibit relatively small DIs with three top occupations (MAN, ENG, PHY). In fact, EDU and SLS exhibit DI values as small as the ones observed among top occupations, suggesting that a significant number of teachers and sales associates are living in the same neighbourhoods as managers, engineers, and physicians. Finally, very low DI values between unemployed and service occupations suggest that either the unemployment rate is high for people in service occupations or that unemployed people, in general, tend to live in same neighbourhoods as people working in service occupations.



**Fig. 18.4** Location of the top occupational group, 2000, 2010, 2015

### ***18.3.4 Location of Top Occupational Groups***

Our top occupational category consists of management occupations (\$104,570); legal occupations (\$92,290); computer and mathematical occupations (\$85,820); architecture and engineering occupations (\$78,790); health diagnosing and treating practitioners and other technical occupations (\$69,240); business and financial operations occupations, (\$71,420); and life, physical, and social science occupations (\$63,870). Consistent with previous studies, the bottom occupational category includes health-care support occupations (\$29,440); food preparation and serving-related occupations (\$22,220); building and grounds cleaning and maintenance occupations (\$29,140); personal care and service occupations (\$23,800); sales and related occupations (\$29,500); farming, fishing, and forestry occupations (\$28,130); production occupations (\$34,390); transportation and material moving occupations (\$31,760).

According to the US Bureau of Labor Statistics (BLS), the annual median wage in the Chicago MSA was \$41,210 in 2018.<sup>9</sup> The top occupational category, on average, earns nearly twice as much as the regional average. In comparison, the lowest-paid occupations in the region earn on average 30% less than the regional median annual wage. As Fig. 18.4 illustrates, there is a clear pattern of spatial distribution and concentration by quintiles in the top occupational group. The top quintile (Q1) is largely concentrated in the northern part of Chicago along the Lake Michigan and the western and northwestern part of the region. Since 2000, the concentration of the top groups has increased in the northern part of Chicago and in its centre. At the same time, some neighbourhoods in the southwest side, which had been a concentration of Q2 and Q3 groups, are now Q4 and Q5. With the exception of a few rural neighbourhoods, suburban neighbourhoods remained a mix of Q1 and Q2.

<sup>9</sup>Wages and salaries are before tax and do not include nonproduction bonuses or employer costs of nonwage benefits, such as health insurance or employer contributions to retirement plans.

### 18.3.5 Location Quotients (LQs)

LQs allow us to examine the concentration of the top and bottom occupation categories in relative terms as they make neighbourhoods comparable (see Fig. 18.5). Overall, the percentile distribution and min/max of values align with the pattern found for the region by the dissimilarity index. First, the LQs for the top socioeconomic group are consistently larger than its equivalents for the bottom socioeconomic group, indicating that overall, the residential concentration for managers and professionals is more extreme than it is for unskilled workers. This spatial pattern is evident at the 99, 95 and 90 percentile levels. Second, higher mean and median values for the bottom socioeconomic group (1.04 and 1.0 respectively) than for the top socioeconomic group (both less than 1.00) suggests that there are more neighbourhoods in the Chicago region with a high concentration of unskilled workers than neighbourhoods with a high concentration of managers and professionals. Third, LQs for both groups are relatively stable across the time periods, suggesting that most neighbourhoods have sustained their character in terms of their occupation composition.

A closer look at the figures shows that growth in the Chicago region’s DI since 2000 is likely driven by the neighbourhood choice of residents with top occupations, which has expanded in Chicago on the north side of the city and in some northern and western suburbs. This conclusion is based on finding that residents with top

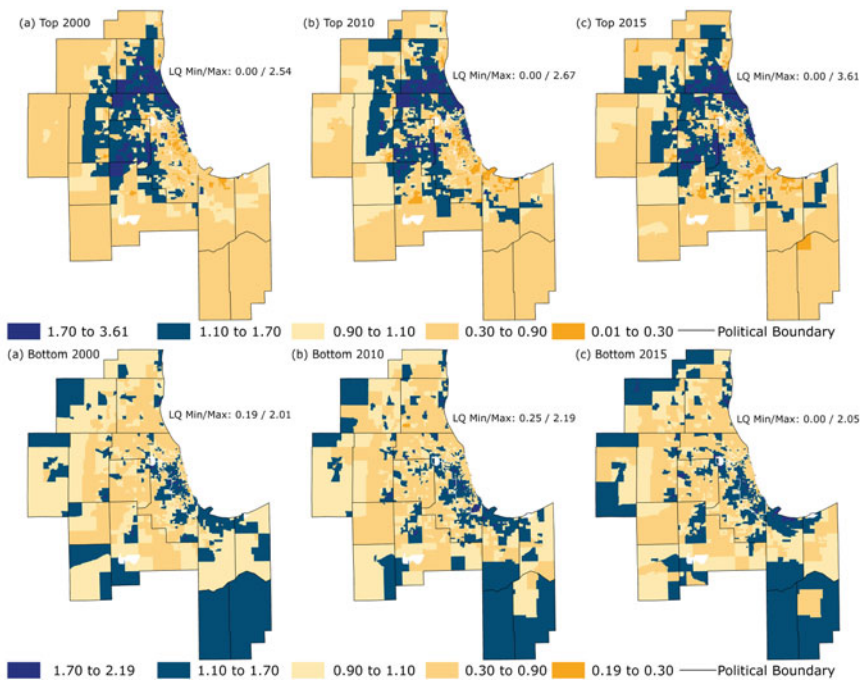


Fig. 18.5 Location quotient maps for the top and bottom occupational groups, 2000, 2010, 2015

occupations disproportionately added to those neighbourhoods with an already high concentration of top occupations ( $LQ > 1$  for top occupations). Neighbourhoods with LQs larger than 1.00 in both 2000 and 2010 for the top occupational group gained a disproportionate share of the net increase in the top occupations (80% of total). At the same time, neighbourhoods with LQs less than 1.00 in both 2000 and 2010 for top occupations gained only 3% of the net increase in the top occupations. These numbers confirm our hypothesis that neighbourhoods with a high concentration of the top occupational group gained disproportionately more people in the top occupations than neighbourhoods with a low concentration of this group, thereby pushing the DI up.

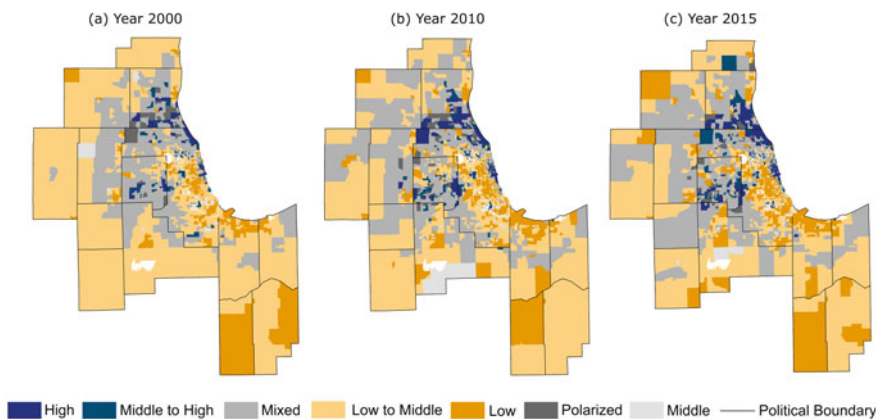
Since the change in DI is driven by two components (residential changes of top and bottom occupational groups), we also must examine what happened to those residents in the bottom occupations during the same period. The large increase in bottom occupations (relative to the regional average) could be indicative of the regional economy, creating more low-paid/skilled jobs during the recession period. It is also possible that some of the existing residents in 2000 working in middle occupations lost their jobs during this period and transitioned to low-paid jobs, thus being re-classified in the bottom occupational group. For this type of change to push up the DI, at least one of two processes must have happened. First, residents working in low occupations would have to be disproportionately added to those neighbourhoods with an already high concentration of bottom occupations ( $LQ > 1.00$  for bottom occupations). Second, residents with bottom occupations in low concentration neighbourhoods ( $LQ < 1.00$  for bottom occupations) would have to lose their jobs at a faster rate than the regional average or relocate to high concentration neighbourhoods or leave the region.

While data limitations prevent us from providing a definitive answer to the latter process, it is possible to determine the net gains of neighbourhoods in the bottom occupational group (the former process). A closer look at the change in the location of residents with bottom occupations from 2000 to 2010 shows that 59,384 people, or 41% of the total net new people employed in the bottom occupations, were added to those neighbourhoods that have LQs larger than 1.00 in both 2000 and 2010. As the maps illustrate, these neighbourhoods are both in the City of Chicago and in the suburbs. Neighbourhoods with LQs less than 1.00 in both years gained approximately the same number of bottom occupations from 2000 to 2010 (61,422 or 42% of the total). These figures suggest that the location choice of residents with bottom occupations played a relatively small role in pushing DI in upward direction.

### 18.3.6 Residential Segregation Based on Socioeconomic Status

Using the aggregated occupational categories, we computed the percentage of the employed labour force in each census tract that falls into the top, middle, and bottom groups. Then, based on the local representation of those groups at different thresholds, we assigned neighbourhoods into a socioeconomic status (SES) typology (Marcinczak et al. 2015) and mapped them to show change over time (see Fig. 18.6).

Overall, three SES neighbourhood types account for more than 80% of all neighbourhoods in the Chicago region between 2000 and 2015: Mixed, Low to Middle, and Low. There is some variation in the share of each type during this period. For example, while Low-to-Middle neighbourhoods are the largest share in 2000 (37.5%) and 2010 (29.3%), Mixed neighbourhoods are the largest share in 2015 (29.5%). One pattern is consistent. The share of Middle and Low-to-Middle neighbourhoods is decreasing while the share of High, Low and Polarized neighbourhoods is increasing. The largest absolute increase from 2000 to 2015 was Low neighbourhoods with 181 neighbourhoods added in 15 years, increasing the share of this SES group from 18.7% in 2000 to 26.8% in 2015 (43.4% increase). Similarly, the share of High neighbourhoods increased significantly as well (81% increase), growing from 97 to 176 neighbourhoods. And while there were only 33 Polarized neighbourhoods in 2000, there are 72 of them in 2015 (nearly 118% increase).



**Fig. 18.6** Classification of neighbourhoods by socioeconomic composition, 2000, 2010, 2015

## 18.4 Conclusion

These results suggest two trends in the Chicago region. First, an occupational shift is ‘shrinking the middle’ while also increasing the number of people in the bottom and top occupational groups. This is consistent with the global city literature on the social polarization of the workforce. Second, holding the occupation structure constant, residents with similar occupations at the top and bottom appear to be sorting themselves into neighbourhoods with people in similar occupations; for example, as discussed in the LQ section, residents with top occupations overwhelmingly choose to live in neighbourhoods with already high LQs for the top occupational group. The classification of neighbourhoods by socioeconomic composition reflects these trends, showing that the share of middle neighbourhoods is decreasing while the share of top and bottom neighbourhoods is increasing. This implies that social polarization has led to residential polarization between the top and bottom occupational groups. While we did not include race and ethnicity in the DI analysis, the spatial patterns suggest that the long history of racial segregation may be contributing to those residential patterns as well.

Looking ahead, given the large increase in the region’s Gini score since 2000, the Chicago region appears to be on a trajectory toward greater income inequality in 2020 than the United States on average. We also expect that factors that have sustained racial and ethnic segregation (e.g. housing discrimination, unequal access to capital) will continue to contribute to this trend, but also that inequality will reinforce racial and ethnic segregation since most of the White population are currently in the top occupations while most African American and Latino people are in bottom occupations. Still, there are many variables that can affect these patterns of segregation and inequality in the future. This includes investment and development decisions in the region by both the private and public sector, which are somewhat hard to predict under current national economic policies (i.e. fluctuating tariffs and global trade wars, especially between United States and China). Furthermore, local policies can also shape the future, including efforts by the Chicago Metropolitan Agency for Planning to address segregation (CMAP 2018) and Chicago’s new mayor elected in Spring of 2019, who ran on a platform of inclusion and equity, which may change where development occurs and who benefits in decades to come.

## Appendix

See Tables 18.4, 18.5, 18.6, 18.7 and 18.8.



**Table 18.4** Occupations included in the dissimilarity index

LABEL	Occupation	Group
MAN	Management, business, and financial occupations	Top
ENG	Computer, engineering, and science occupations	Top
LEG	Legal occupations	Top
PHY	Health diagnosing and treating practitioners and other technical occupations	Top
EDU	Education, community service, arts, and media occupations	Middle
OFC	Office and administrative support occupations	Middle
HLT	Health technologists and technicians	Middle
PRO	Protective service occupations	Middle
NTR	Natural resources, construction, and maintenance occupations	Bottom
SLS	Sales and-related occupations	Bottom
SER	Service occupations	Bottom
PRD	Production, transportation, and material moving occupations	Bottom
AGR	Farming, fishing, and forestry occupations	Bottom

*Note* The same set of occupations and groupings (top-middle-bottom) is used for DI, LQ, SES analyses. 2000 Census has an occupation class called “Farmers and farm managers” which did not exist in 2010 and 2015 datasets. To be able to present consistent DIs across years, this occupation is not included in the calculation of DI

**Table 18.5** Socioprofessional grouping of occupations

Occupation	Group
Management occupations	Top
Business and financial operations occupations	Top
Computer and mathematical occupations	Top
Architecture and engineering occupations	Top
Life, physical, and social science occupations	Top
Legal occupations	Top
Health diagnosing and treating practitioners and other technical occupations	Top
Community and social services occupations	Middle
Education, training, and library occupations	Middle
Arts, design, entertainment, sports, and media occupations	Middle
Health technologists and technicians	Middle
Protective service occupations:	Middle
Office and administrative support occupations	Middle
Construction and extraction occupations	Middle
Installation, maintenance, and repair occupations	Middle
Healthcare support occupations	Bottom
Food preparation and serving-related occupations	Bottom
Building and grounds cleaning and maintenance occupations	Bottom
Personal care and service occupations	Bottom
Sales and related occupations	Bottom
Farming, fishing, and forestry occupations	Bottom
Production occupations	Bottom
Transportation occupations	Bottom
Material moving occupations	Bottom

**Table 18.6** Cumulative percentile distribution of LQs for the top and bottom socioeconomic groups

	2000		2010		2015	
	Top SES	Bottom SES	Top SES	Bottom SES	Top SES	Bottom SES
<i>MAX</i>	2.54	2.01	2.67	2.19	3.61	2.05
<i>99%</i>	2.25	1.85	2.26	1.86	2.22	1.82
<i>95%</i>	1.90	1.60	1.91	1.67	1.92	1.65
<i>90%</i>	1.69	1.47	1.71	1.51	1.70	1.53
<i>75%</i>	1.27	1.23	1.30	1.26	1.29	1.29
<i>MEAN</i>	0.93	1.03	0.93	1.04	0.93	1.04
<i>MEDIAN</i>	0.85	1.00	0.84	0.99	0.85	1.00
<i>25%</i>	0.53	0.80	0.50	0.79	0.51	0.77
<i>10%</i>	0.34	0.68	0.30	0.63	0.30	0.61
<i>5%</i>	0.24	0.60	0.19	0.55	0.21	0.53
<i>1%</i>	0.14	0.44	0.05	0.40	0.11	0.39
<i>MIN</i>	0.00	0.19	0.00	0.25	0.00	0.00

**Table 18.7** Classification of neighbourhoods by the share of socioprofessional groups

SES Coding	SES Category	Share of socioprofessional groups		
		High	Middle	Low
SES1	High SES Neighbourhoods	50% ≤	≤ 25%	≤ 25%
		50% ≤	≤ 25%	25–49%
		50% ≤	25–49%	≤ 25%
SES2	Middle to High SES Neighbourhoods	25–49%	25–49%	≤ 25%
		25–49%	50% ≤	≤ 25%
SES3	Mixed SES Neighbourhoods	25–49%	25–49%	25–49%
SES4	Low to middle SES Neighbourhoods	≤ 25%	25–49%	25–49%
SES5	Low SES Neighbourhoods	≤ 25%	25–49%	50% ≤
		≤ 25%	≤ 25%	50% ≤
SES6	Polarized SES Neighbourhoods	25–49%	≤ 25%	25–49%
		25–49%	≤ 25%	50% ≤
SES7	Middle SES Neighbourhoods	≤ 25%	50% ≤	≤ 25%
		≤ 25%	50% ≤	25–49%

**Table 18.8** Neighbourhood types according to socioeconomic status composition, 2000–2015

	2000		2010		2015		Change in Share (2000–2010)		Change in Share (2000–2015)	
	#	%	#	%	#	%	#	%	#	%
SES1	97	4.4	135	6.1	176	7.9	38.0	39.2	79	81.4
SES2	100	4.5	116	5.2	103	4.7	16.0	16.0	3	3.0
SES3	657	29.7	601	27.1	655	29.6	-56.0	-8.5	-2	-0.3
SES4	831	37.5	648	29.3	553	25.0	-183.0	-22.0	-278	-33.5
SES5	414	18.7	542	24.5	595	26.9	128.0	30.9	181	43.7
SES6	33	1.5	75	3.4	72	3.3	42.0	127.3	39	118.2
SES7	71	3.2	85	3.8	49	2.2	14.0	19.7	-22	-31.0
NA	12	0.5	13	0.6	12	0.7	1.0	8.3	3	25.0
<b>Total</b>	<b>2,215</b>	<b>100.0</b>	<b>2,215</b>	<b>100.0</b>	<b>2,215</b>	<b>100.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>

Note: NA refers to neighbourhoods with zero population

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