HOWARD WIAL and ALEC FRIEDHOFF

VII. WORK

BY THE NUMBERS

+3.4% / -8.3%

Change in wages for high-wage / low-wage workers, United States, 1999 to 2008

5

Metro areas (out of 100) in which wages increased for low-, middle-, and high-wage workers, 1999 to 2008

1.85

Ratio of earnings, workers with college degree to workers with high school diploma only, 100 largest metro areas, 2008

2

Metro areas (out of 20) experiencing among highest jumps in unemployment during last two recessions, 2001-2003 and 2007-2009 (Detroit and San Jose)

OVERVIEW

- **Nationwide, wage inequality grew in the 2000s.** From 1999 to 2008, the inflation-adjusted earnings of high-wage workers grew by 3.4 percent. This occurred while hourly earnings for middle-wage workers fell by 4.5 percent and the wages of low-wage workers fell by an even greater 8.3 percent.

- **In half of the 100 largest metropolitan areas, high-wage earners saw their wages grow, while middle- and low-wage workers experienced declines.** Most large metro areas had wage growth at the top and sometimes at the midpoint of their wage distributions, but in only five metropolitan areas—Cape Coral, Jacksonville, Providence, New Haven, and Virginia Beach—did wages grow for high-, middle-, and low-wage workers.

- **Earnings inequality rose more sharply in the 100 largest metro areas than in the nation overall.** All but three metro areas—Augusta, Syracuse, and Tucson—posted increases in their high- to low-wage earnings ratios. By 2008, five states accounted for 17 of the 20 large metro areas with the highest earnings inequality. Eleven (11) were located in either California or Texas, and Colorado, Louisiana, and New York contained two each.

- **Overall metropolitan wage inequality levels are associated with wage outcomes by factors such as race and educational attainment.** High levels of wage inequality in metro areas like Houston, Los Angeles, and New York accompany relatively large differences there in the earnings of whites versus other groups, and college graduates versus those with only a high school diploma.

- **Unemployment rates skyrocketed between 2007 and 2009 in metropolitan areas most affected by the housing bubble and turmoil in the automotive industry.** These effects are most obvious in metropolitan areas in California and Florida, where the effects of the housing crisis have been widespread, and in the manufacturing-oriented states of Ohio and Michigan. The geography of unemployment growth during this recession differed from that following the 2001 recession, primarily due to the extraordinary impact of the recent housing market collapse, though both downturns heavily impacted many Great Lakes metro areas.

The great sums of income that the American labor force generates are distributed unevenly among its workers.

NATIONAL TRENDS

The U.S. economy is the largest in the world, propelled by a vast labor force of some 154 million people.[1] But the great sums of income that the American labor force generates are distributed unevenly among these workers, and many millions of individuals who want to work are unable to find jobs. This chapter focuses on trends in these most basic labor market outcomes and the disparate experiences of workers across the many distinct metropolitan labor markets that together form the American economy.

Following the 2001 recession, the United States entered a period of impressive productivity gains that lasted until the Great Recession took hold in

2008.[2] Productivity growth is critical to increasing standards of living because it allows workers to produce more without increasing hours.[3] However, productivity growth alone does not guarantee that all, or even most, workers will see their standard of living improve. In the late 20th century, the gains from increased productivity—measured in terms of wages—were not distributed evenly, with high-wage workers benefiting more than middle- and low-wage workers.[4] This chapter examines growth trends in hourly wages for full-time, full-year workers from 1999 through 2008 in metropolitan areas, asking who has benefited from the productivity growth of the 2000s.[5]

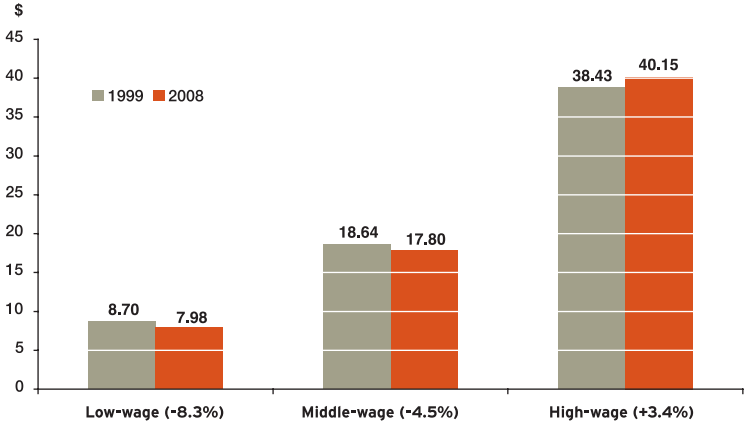
At the national level, wages at the top diverged from those at the middle and bottom. Middle-wage workers saw their inflation-adjusted hourly earnings decline by 4.5 percent from 1999 through 2008.[6] In 2008, they earned $17.80 per hour, down from $18.64 in 1999 (all wages are expressed in 2008 dollars). A steeper drop of 8.3 percent was recorded for low-wage workers, whose hourly earnings fell from $8.70 in 1999 to $7.98 in 2008. The trend was positive for high-wage workers, however. Their hourly earnings rose by 3.4 percent, to just over $40.00 in 2008. In short, the productivity gains of the 2000s did not result in broadly shared wage gains.

This divergence caused earnings inequality to increase in the United States in the 2000s. In 1999, the high-to-low wage ratio—a broad measure of earnings inequality that captures just how far high wage earners have "pulled away" from low wage earners—stood at 4.5; by 2008, it had risen to 5.0, reversing a trend of declining wage inequality in the late 1990s.[7] This inequality in turn is associated with unequal wage outcomes in the labor market for workers with different characteristics. For example, middle-wage male workers make 21 percent more than middle-wage female workers; white workers make 29 percent more than black workers and 48 percent more than Hispanic workers; and the college wage premium is especially high—workers with a bachelor's degree or higher make nearly 78 percent more than workers with just a high school education.

Of course, any discussion about work in America in the 2000s cannot overlook the labor market convulsions that occurred at the end of the decade. The economy officially entered a recession in December 2007, when the nation's unemployment rate stood at 4.8 percent. One year later, the rate had risen to 7.1 percent, and workers nationwide were clearly feeling the recession's effects. The jobs picture worsened greatly in subsequent months, and failed to improve noticeably during the second half of 2009 despite growth in GDP. By December 2009, the

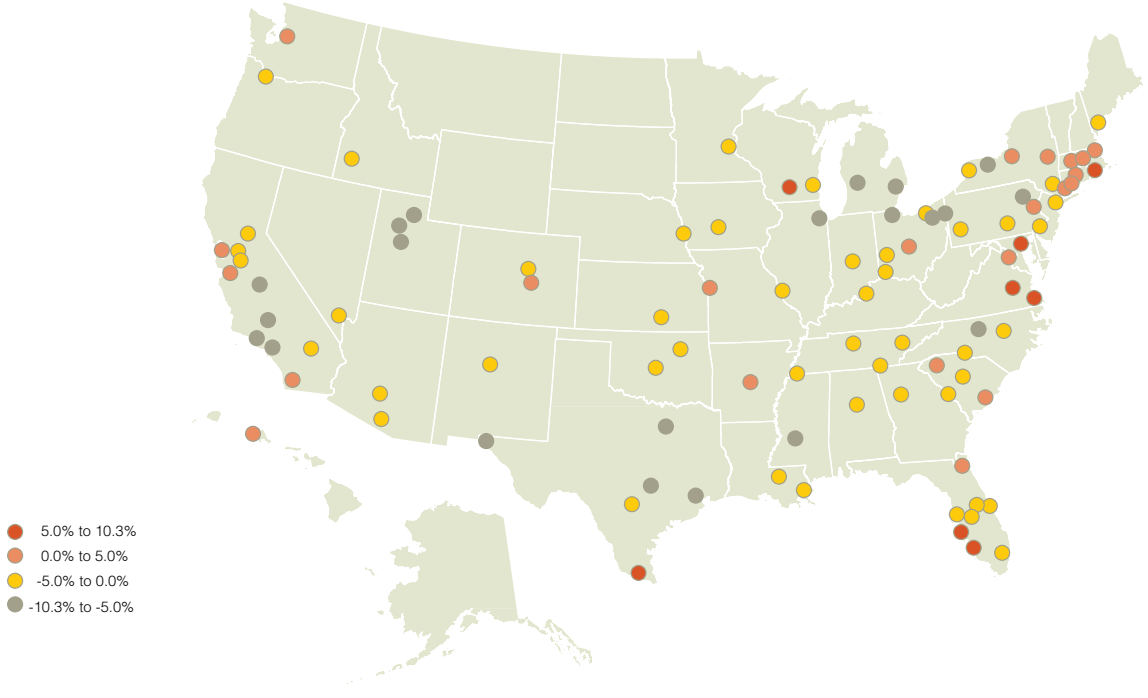
Figure 1. Wages Declined for Middle-Wage and Low-Wage Workers in the 2000s, but Rose for High-Wage Workers

Inflation-Adjusted Hourly Wage by Wage Category, Full-Time, Year-Round Workers, United States, 1999 and 2008



Source: Brookings analysis of Census 2000 and 2008 American Community Survey data
Worker wage categories are defined by position in the wage distribution of all workers in year noted: low-wage (10th percentile); middle-wage (50th percentile); and high-wage (90th percentile)
Change in wages from 1999 to 2008 noted in parentheses

Map 1. Middle-Wage Workers in 30 of 100 Large Metro Areas Experienced Wage Increases in the 2000s
Change (%) in Inflation-Adjusted Hourly Wages, Middle-Wage Workers, 1999-2008



Source: Brookings analysis of Census 2000 and 2008 American Community Survey data
Note: Middle-wage workers are those earning at the 50th percentile of wage distribution for specified year and metro area

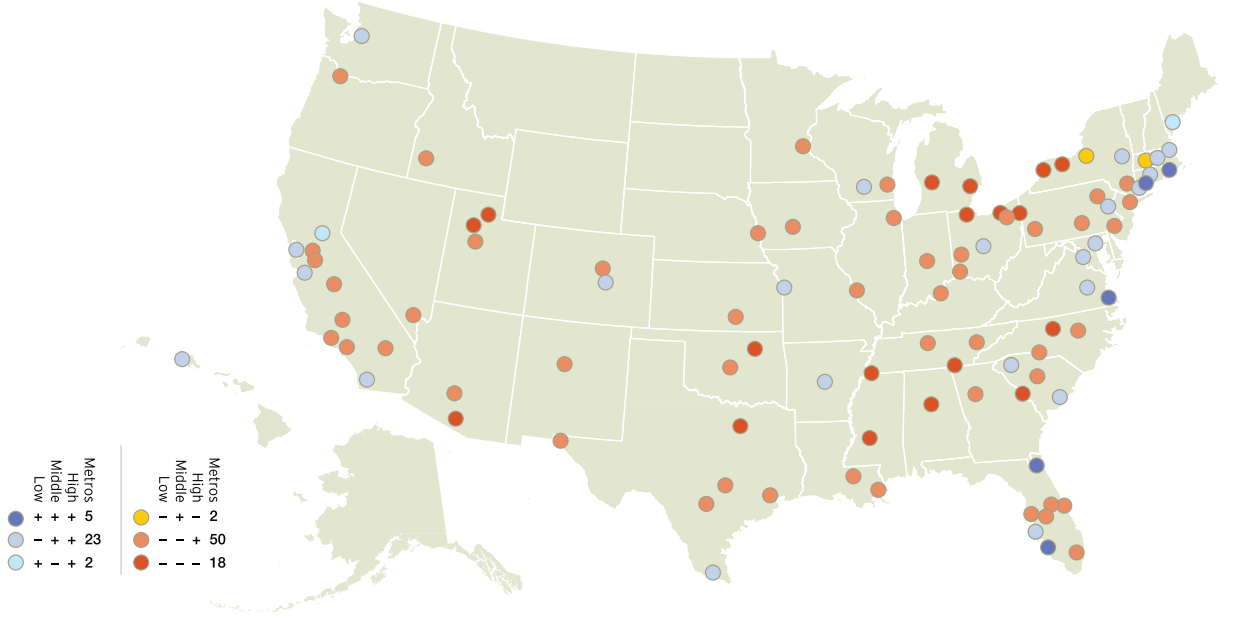
U.S. unemployment rate was 9.7 percent—more than double the rate two years prior.

The persistence of high unemployment even after economic growth resumes is not a new story; indeed, a "jobless recovery" followed the early 2000s recession. While that recession officially lasted only eight months (March 2001 to November 2001), unemployment continued to rise for more than a year-and-a-half after the recession ended and it didn't approach pre-recession levels until late in 2006 (the national unemployment rate never did return to its March 2001 rate).[8] But the Great Recession has caused the national unemployment rate to soar far beyond its levels during the 2001 recession; not since 1983 have so many people been out of work. This makes the prospect of a jobless recovery all the more troubling as the nation moves further into 2010.

How the Great Recession will ultimately affect the distribution of wages in the United States is still unclear. We do know, however, that less educated workers have been hit particularly hard, at least in terms of employment. From December 2007 to December 2009, BLS data show that the national unemployment rate for college graduates rose from 2.0 to 4.7 percent compared with an increase from 4.7 to 10.6 for high school graduates only. If extremely

Map 2. Half of Large Metro Areas Saw Wages Rise for High-Wage Workers, and Fall for Middle- and Low-Wage Workers

Direction of Inflation-Adjusted Wage Changes by Worker Wage Category, 1999-2008



Source: Brookings analysis of Census 2000 and 2008 American Community Survey data
Note: High-wage workers are those earning at the 90th percentile; middle-wage workers earn at the 50th percentile; low-wage workers earn at the 10th percentile of wage distribution for specified year and metro area

high unemployment among less educated, lower earning workers holds back wage growth for that group in the coming months and years, wage inequality at the national level could increase even further in the future. However, it is too soon to tell whether the disparity in unemployment between these two groups will persist as the economy recovers.

METROPOLITAN TRENDS

Trends within the Wage Distribution

The 100 largest metropolitan areas together tended to follow national wage trends in the 2000s, but displayed notable variation among themselves in the relative performance of workers in different parts of the wage distribution. Across all 100 areas, middle-wage workers suffered a less severe decline in wages (1.5 percent) than the national average (4.5 percent) from 1999 to 2008. In either case, these workers faced the troubling reality of being worse off near the end of the decade than at the start.

Most, but not all, large metro areas shared in this trend. Middle-wage workers in 30 metro areas experienced a rise in hourly earnings from 1999 to 2008, from as little as 0.1 percent in Colorado Springs to as much as 10.3 percent in Cape Coral (Map 1). The

Table 1. Only Three Metro Areas Saw a Decline in Wage Inequality in the 2000s; Increases Were Rapid in Others
Metro Areas Ranked by Change in Ratio of Wages for High-Wage Versus Low-Wage Workers, 1999-2008

Declines/Smallest Increases				*Greatest Increases*			
Metro Area	**1999**	**2008**	**Change**	**Metro Area**	**1999**	**2008**	**Change**
Tucson, AZ	4.53	4.43	-0.10	Greenville, SC	3.89	4.81	0.93
Augusta-Richmond County, GA-SC	4.68	4.62	-0.06	Knoxville, TN	4.07	5.00	0.93
Syracuse, NY	3.93	3.91	-0.02	Washington-Arlington-Alexandria, DC-VA-MD-WV	4.55	5.50	0.95
Providence, RI-MA	3.96	4.00	0.04	Charlotte, NC-SC	4.20	5.16	0.96
Youngstown, OH-PA	3.95	4.06	0.11	Austin, TX	4.51	5.48	0.96
Cape Coral, FL	3.79	3.91	0.12	Jackson, MS	4.21	5.17	0.96
Harrisburg, PA	3.70	3.84	0.14	Minneapolis-St. Paul, MN-WI	3.58	4.55	0.97
Greensboro-High Point, NC	3.81	3.97	0.15	El Paso, TX	4.26	5.25	0.99
Albany, NY	3.94	4.10	0.16	Denver-Aurora, CO	4.16	5.29	1.14
Sacramento-Roseville, CA	4.24	4.40	0.16	Bridgeport-Stamford, CT	5.93	7.20	1.27

Source: Brookings analysis of Census 2000 and 2008 American Community Survey data
Note: High-wage workers are those earning at 90th percentile, and low-wage workers at 10th percentile, of wage distribution for specified year and metro area

positive trend extended to most large New England metro areas, as well as the mid-Atlantic areas of Baltimore, Washington, Richmond, and Virginia Beach. California, Florida, New York, and South Carolina also had multiple metro areas in which middle-wage workers experienced wage growth in the 2000s. By the same token, 70 metropolitan areas saw wages for middle-wage workers decline over the decade. The declines were largest (greater than 5 percent) in a number of Great Lakes metro areas (e.g., Detroit, Grand Rapids, Toledo, Rochester), as well as in Utah and California metro areas where the mid-decade construction boom had fallen off rapidly by 2008.

Compared to the national trend, wages at the top and bottom of the distribution in the nation's 100 largest metro areas diverged even more strongly in the 2000s. In these metro areas, high-wage workers experienced wage growth of 4.3 percent from 1999 to 2008 (versus 3.4 percent nationally), while at the same time low-wage workers' hourly earnings declined by a full 10.0 percent (versus 8.3 percent nationally).

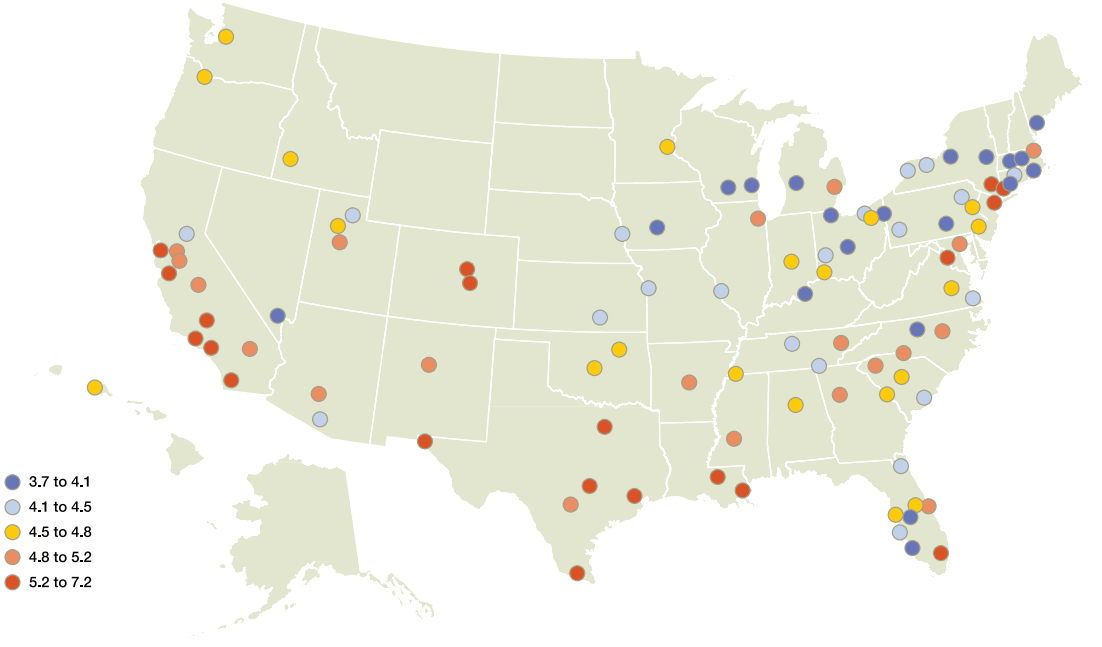
Exactly half of the nation's 100 largest metro areas followed the national pattern at all three points in the wage distribution: growth for high-wage workers, and declines for middle- and low-wage workers (Map 2). Those metro areas could be found in nearly every region of the country, with the exception of New England. Growth was more widely shared in another group of 23 metro areas where both high- and middle-wage workers saw increases. But in only five East Coast metropolitan areas (Cape Coral, Jacksonville, New Haven, Providence, and Virginia Beach) did workers at all three points of the wage distribution experience growth. More common was a pattern in 18 metro areas, extending from the Great Lakes to portions of the Southeast and Intermountain West, in which wages declined across the board during the 2000s.

Earnings Inequality Trends

While wages are somewhat higher in the 100 largest metropolitan areas than in the nation as a whole at the low,

Map 3. California and Texas Have a Large Number of Metro Areas with High Levels of Wage Inequality

Ratio of Wages for High-Wage Workers to Wages for Low-Wage Workers, 2008



Source: Brookings analysis of Census 2000 and 2008 American Community Survey data
Note: High-wage workers are those earning at the 90th percentile, and low-wage workers earn at the 10th percentile, of wage distribution for specified year and metro area

middle, and high ranges of the distribution, the difference is greater at the high end. High-wage workers in the 100 largest metro areas earned $44.00 hourly in 2008, versus a national rate of $40.00 hourly; large-metro low-wage workers earned only $0.40 more hourly than the national average ($8.40 versus $8.00). As a result, wage inequality across large metro areas exceeds the national average, with a high-to-low wage ratio of 5.25.

That ratio varied considerably across metropolitan labor markets in 2008, from 3.7 in Springfield (MA) to 7.2 in Bridgeport (Map 3). California and Texas had 11 of the 20 metro areas with the highest wage inequality, and Colorado, Louisiana, and New York each added two metropolitan areas to this group. Wage inequality was high in some high-wage metro areas such as New York, San Francisco, and Washington, as well as in some relatively low-wage metro areas such as El Paso, New Orleans, and Bakersfield. Size also related to wage inequality, with New York, Houston, Los Angeles, San Francisco, Washington, Miami, and Dallas all ranking among the metro areas with the highest levels of wage inequality.

Metro areas with low levels of wage inequality, on the other hand, tended to cluster in the Midwest, Northeast, and Florida. Las Vegas was the only metropolitan area in the western United States to rank

Table 2. Metropolitan Wage Inequality Reflects Underlying Wage Differences by Race/Ethnicity and Education

Metro Areas Ranked by Ratio of Wages for High-Wage versus Low-Wage Workers, and Wage Differences by Gender, Race/Ethnicity, and Educational Attainment

Highest Overall Wage Inequality

Metro Area	High-Wage/Low-Wage	Male/Female	White/Non-White	Bachelor's/HS Only
Bridgeport-Stamford, CT	7.20	1.22	1.70	2.05
San Jose-Sunnyvale-Santa Clara, CA	6.31	1.26	1.44	2.27
Los Angeles-Long Beach-Santa Ana, CA	6.13	1.11	1.77	2.00
Houston, TX	6.13	1.21	1.67	1.93
Oxnard-Thousand Oaks-Ventura, CA	5.95	1.18	1.74	2.05
New York-Newark, NY-NJ-PA	5.87	1.13	1.60	1.83
San Francisco-Oakland-Fremont, CA	5.77	1.13	1.59	2.06
San Diego, CA	5.77	1.08	1.41	2.00
Bakersfield, CA	5.60	1.16	1.54	1.90
Baton Rouge, LA	5.54	1.33	1.52	1.56

Lowest Overall Wage Inequality

Metro Area	High-Wage/Low-Wage	Male/Female	White/Non-White	Bachelor's/HS Only
Youngstown, OH-PA	4.06	1.34	1.16	1.65
Louisville/Jefferson County, KY-IN	4.05	1.16	1.29	1.67
Providence, RI-MA	4.00	1.22	1.37	1.63
Greensboro-High Point, NC	3.97	1.21	1.41	1.79
Cape Coral, FL	3.91	1.20	1.35	1.38
Syracuse, NY	3.91	1.17	1.42	1.56
Harrisburg, PA	3.84	1.12	1.31	1.70
Portland, ME	3.79	1.22	1.13	1.64
Madison, WI	3.75	1.21	1.38	1.57
Springfield, MA	3.72	1.11	1.33	1.47

Source: Brookings analysis of Census 2000 and 2008 American Community Survey data
Note: High-wage workers are those earning at 90th percentile, and low-wage workers at 10th percentile, of wage distribution for specified year and metro area

among those with the lowest levels of wage inequality, likely due to its high rates of union membership.

Consistent with the national trend, fully 97 of 100 large metro areas experienced a rise in wage inequality in the 2000s. Only three regions—Tucson, Augusta, and Syracuse—actually posted a decline in their high-to-low wage ratios (Table 1). However, in each of these metro areas, the decline resulted from a faster drop in wages for high-wage workers than for low-wage workers, rather than a real improvement in wages at the bottom end.

At the other extreme lay metro areas that experienced large jumps in wage inequality. Bridgeport and Denver exemplify two different patterns underlying the trend. Hourly earnings for high-wage workers in Bridgeport grew at a brisk 15.6 percent pace from

1999 to 2008 (highest among the 100 largest metro areas), while those for low-wage workers declined modestly by 4.8 percent. By contrast, wages for Denver's highest earners grew at a relatively anemic 2.8 percent rate, even as wages at the low end plummeted 19.3 percent (the second-largest decline). As shown above, this pattern of growth at the high end and decline at the low end led to increases in wage inequality in 73 of the 100 largest metro areas during the 2000s.

Demographic Dimensions of Wage Inequality

At the national level, wages differ among groups of workers by gender, race and ethnicity, and educational attainment. Places that are more diverse along the dimension of race and ethnicity, and where wage outcomes differ more widely by race and educational attainment, exhibit higher overall levels of overall wage inequality.

Generally speaking, metro areas with larger minority populations tend to have higher overall wage inequality and more unequal outcomes by race. Six California metro areas with relatively large Hispanic populations, along with the highly diverse metro areas of Houston and New York, rank among the 10 metro areas with the highest levels of overall wage inequality. All exhibit above-average differences in wages between whites and non-whites, or between workers with college degrees and those with only a high school diploma, or both.[9] Metro areas with smaller minority populations, including mid-sized manufacturing centers (Youngstown, Greensboro, Springfield) and those with state capitals (Harrisburg, Portland (ME), Madison) exhibit lower overall wage inequality, in part because of their smaller wage differences by race/ethnicity and educational attainment. Notably, wage inequality by gender appears to be somewhat higher in these places than in metro areas with high overall wage inequality.

Trends in the 2000s exacerbated these demographic wage differentials. Across the 100 largest metro areas, the college/high school wage premium grew from 1.73 to 1.85, the result of flat wages for college-educated workers and falling wages for workers with a high school diploma only. Similarly, overall wage gaps by race continued to widen from 1999 through 2008 with the white/black wage differential growing from 1.29 to 1.34 and the white/Hispanic differential increasing from 1.53 to 1.60.

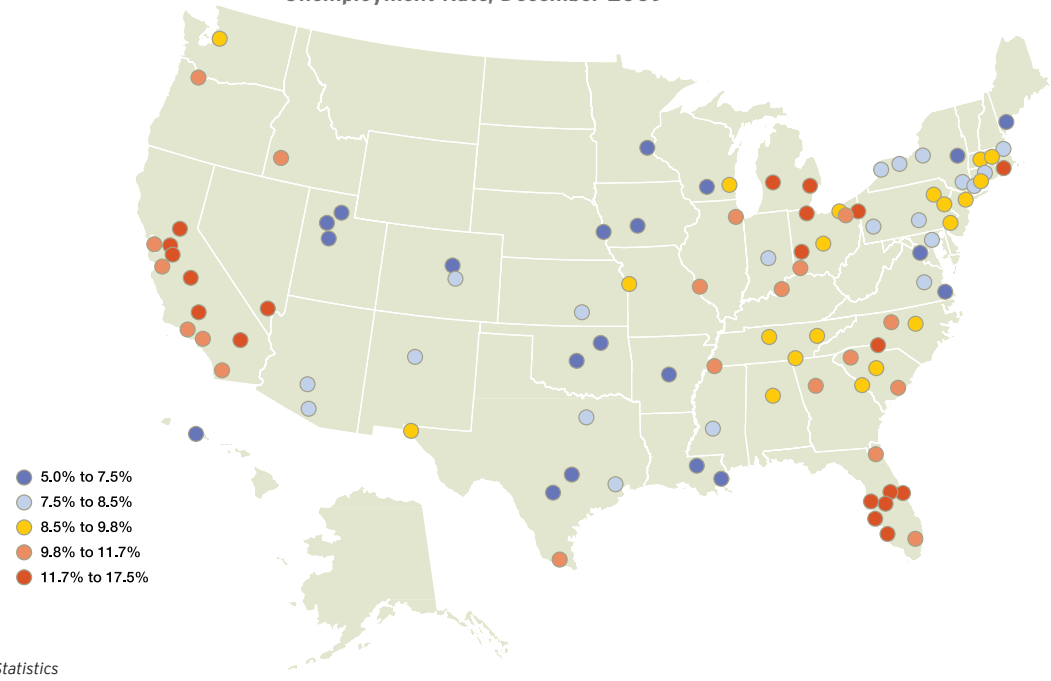
Unemployment

Wage trends provide one view of the disparate outcomes experienced by workers in metropolitan areas in the 2000s. As the economy has struggled under the weight of the Great Recession, these divergent outcomes have become even more apparent in metropolitan unemployment rates.

According to data from the Bureau of Labor Statistics, in December 2009, unemployment rates varied considerably across the nation's 100 largest metropolitan areas, from 5.0 percent in the Omaha area to 17.5 percent in the Modesto area (Map 4). The geographic pattern reveals two of the major storylines of the Great Recession—the collapse of the housing market and the woes of auto and auto parts manufacturing. Seven of the 10 metro areas with the highest unemployment rates (12.8 percent or higher) were located in "housing bubble" areas of California and Florida, joined by similarly hard-hit Las Vegas. The auto-dependent regions of Detroit and Youngstown areas rounded out the 10 most heavily affected metro areas. Conversely, the 10 metro areas with the lowest unemployment rates (6.6 percent or less) lay mostly in the nation's mid-section, and

Map 4. Metro Areas Most Affected by Crises in the Housing and Manufacturing Sectors Have the Highest Unemployment Rates

Unemployment Rate, December 2009



Source: Bureau of Labor Statistics

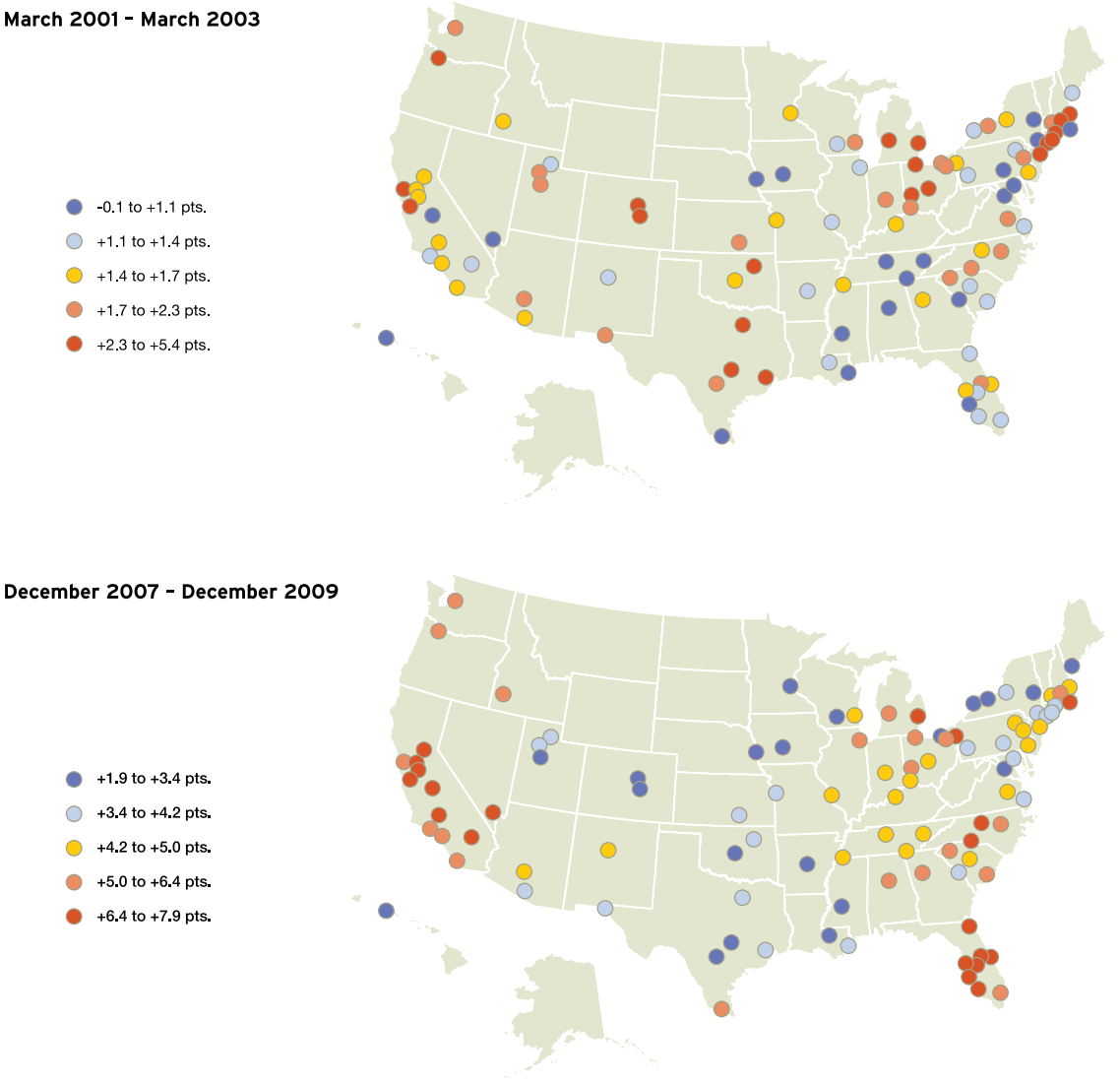
portions of the Intermountain West. Each of the 100 largest metro areas experienced an increase in its unemployment rate between December 2007 and December 2009. However, those increases ranged from under 2 percentage points in Omaha to nearly 8 percentage points in Lakeland, Stockton, and Cape Coral.

The 2000s were bookended by two recessions that, beyond obvious differences in their magnitudes, also affected America's metropolitan landscape quite differently. Of the 20 metropolitan areas experiencing the largest increases in unemployment in the two years following the start of the Great Recession, only two—Detroit and San Jose—ranked among the hardest-hit 20 in the two years after the start of the 2001 recession (Map 5). During that period, most large Florida metro areas, and California metro areas outside the Bay Area, experienced small- to medium-sized upticks in unemployment. In another contrast, most metro areas in the nation's mid-section, extending into the Colorado and Utah portions of the Intermountain West, experienced above-average jumps in unemployment during and after the 2001 recession, compared with below-average increases this time around. Finally, in addition to large differences across metropolitan areas, trends in unemployment within metro areas appear to differ from the early 2000s recession, as suburbs are tracking cities more closely than before.[10]

Some patterns, however, held in each recession.

Map 5. The Two Recessions of the 2000s Drove Large Unemployment Increases in Different Sets of Metropolitan Areas

Change in Unemployment Rate 24 Months from Start of Two Most Recent Recessions–
March 2001 to March 2003 and December 2007 to December 2009



Source: Bureau of Labor Statistics

Several metro areas in the Great Lakes states of Michigan and Ohio suffered large increases in unemployment during both downturns, likely a reflection of decreased demand for cars and many of the other durable goods produced in those regions. A number of metro areas (such as Albany, Des Moines, Jackson (MS), Honolulu, Omaha, and Washington, D.C.) also experienced more stable unemployment rates during both periods.

Data from 2008 for metropolitan areas reflect the unemployment rate disparities by educational attainment evident at the national level in more recent data. For the 100 largest metro areas combined, the unemployment rate in 2008 was 6.6 percent for individuals with only a high school diploma, versus 2.8 percent for individuals with a bachelor's degree.[11] In every one of the 100 largest metro areas, the 2008 unemployment rate was higher for those with only a high school diploma than for college degree holders. In Detroit and Fresno, the gap was more than 8.0 percentage points, while in Salt Lake City, Tulsa, Honolulu, Harrisburg, and Provo, it was less than 2.0 percentage points. Both Fresno and Detroit have experienced large overall increases in unemployment during the Great Recession, suggesting that if national trends hold in these regions, unemployment rates among those with only a high school education might very well be closer to 19 and 21 percent, respectively.[12]

LOOKING AHEAD

The unemployment and wage inequality findings reported in this chapter raise profound questions about the future of economic opportunity in America at the regional level. For most of the last century, the auto-producing metropolitan areas of the central Great Lakes region, with their combination of high overall wages and low wage inequality, exemplified broadly shared prosperity in a way that most other parts of the country did not. As such, they showed what the U.S. economy, at its best, could deliver for working people. The Great Recession decimated the economies of those metropolitan areas. Will those economies recover anytime soon? If so, will they recover in a way that restores broadly-shared prosperity?

It is not clear whether other metropolitan areas will take the place of the auto-producing areas as exemplars of such growth. The housing-bubble metropolitan areas of Florida, Nevada, and much of California, which also suffered from very high unemployment during the recession, mostly had much larger wage gaps between high- and low-wage workers. Absent major changes in the structure of their economies, they do not seem likely to inherit the mantle of broadly-shared prosperity even when their economies eventually recover. The large coastal metropolitan areas, though generally hit less hard during the recession than either the auto-producing or housing-bubble areas, also had very large wage gaps. So did the regional economies of Texas, where the Great Recession's impact was more modest than elsewhere.

Two groups of metropolitan areas both suffered relatively little during the recession and had relatively small gaps between high- and low-wage earners before the recession: (1) the broad swaths of the South and Great Plains that did not have a housing bubble and (2) the eastern Great Lakes metropolitan areas of western Pennsylvania and New York that do not depend heavily on the auto industry. Either of these groups of metropolitan areas could point the way toward new forms of inclusive economic growth, but in each case there are obstacles that stand in the

The unemployment and wage inequality findings reported in this chapter raise profound questions about the future of economic opportunity in America at the regional level.

way of that outcome.

For decades before the Great Recession, the growth of the non-housing-dependent South and Great Plains was based largely on low wages and a low cost of living. As these regions grew, however, their wages and living costs rose relative to those in the Northeast, West Coast, and Great Lakes, potentially threatening their continued ability to attract employers from other parts of the nation and abroad. Moreover, with few exceptions the states and metropolitan areas of the South and Great Plains lack public policies that would raise productivity to support high-wage job growth. The eastern Great Lakes metropolitan areas, despite suffering relatively small increases in unemployment during the recession, must still overcome the effects of decades of long-term manufacturing job loss. Their regional economies, now based in large part on higher education, health care, and highly specialized manufacturing, are much smaller than they were just a few decades ago. They may offer a regional model for shared economic growth, but perhaps on only a relatively small scale.

If no metropolitan areas provide a model of what a more inclusive form of economic opportunity can look like in the 21st century, then it will be increasingly difficult for Americans to imagine that such a future is possible.

Broadly shared prosperity is important at the metropolitan level, not just the national level. Most people experience the economy where they live and work. Almost no one lives or works throughout the nation; the vast majority live and work in economically distinct metropolitan areas. If no metropolitan areas provide a model of what a more inclusive form of economic opportunity can look like in the 21st century, then it will be increasingly difficult for Americans to imagine that such a future is possible. ■

ENDNOTES

1. Data are from the Bureau of Labor statistics for 2009; this figure counts the civilian labor force only.
2. Lawrence Mishel, Jared Bernstein, and Heidi Shierholz, *The State of Working America* (Ithaca: ILR Press, an imprint of Cornell University Press, 2009).
3. Robert Atkinson and Howard Wial, "Boosting Productivity, Innovation, and Growth Through a National Innovation Foundation" (Washington: Brookings Institution and Information Technology and Innovation Foundation, 2008).
4. Ibid.
5. Using annual wage data and information on hours and weeks worked from the 2000 Census PUMS and 2008 American Community Survey (ACS) PUMS, we calculate hourly wages for all full-time, full-year (those who work 35-plus hours per week and 50-52 weeks per year) wage and salary workers (i.e. not those who report that they are self-employed or who are unpaid family workers). Wage data from the 2008 ACS are collected throughout the year and so different individuals report data for different 12-month periods. However, we refer to these data as representing the year 2008 (all data have been adjusted to 2008 dollars). Wage data from Census 2000 refer to earnings from the previous year, and we refer to these data as representing the year 1999, accordingly. Access to PUMS data was provided by the IPUMS-USA project at the Minnesota Population Center. See Steven Ruggles and others, *Integrated Public Use Microdata Series: Version 4.0* [Machine-readable database] (Minneapolis, MN: Minnesota Population Center [producer and distributor], 2009).

   The lowest level of geography identifiable in the PUMS is the Public Use Microdata Area (PUMA); we aggregate PUMA data to create data for metropolitan statistical areas. In most cases, PUMA boundaries align well with metropolitan area boundaries, but in some

cases PUMAs extend beyond the boundaries of metro areas—resulting in overbounding error—and in other cases PUMAs do not extend far enough—resulting in underbounding error. According to 2000 population data, in eight metro areas the sum of individuals erroneously assigned (or not assigned) to a metropolitan area due to overbounding error (or underbounding error) equals between 10 and 20 percent of the actual metro area population; in three metro areas (Des Moines, Grand Rapids, and Greenville), this amounted to approximately 22 percent of the actual metro area population. Due to population growth since 2000, errors may be more substantial for 2008 data; available data do not allow us to precisely measure error as of 2008, though our analysis reveals that it is likely Des Moines represents the extreme in 2008 with an underbounding error around 30 percent.

6. To represent low-, medium-, and high-wage workers, we use the 10th, 50th, and 90th hourly wage percentiles. A wage at a given percentile describes the share of workers earning more or less than that wage. For example, if the 10th percentile hourly wage is $8/hour, it implies that 10 percent of workers made less than that amount and 90 percent made more. All calculations of wage change have been carried out using inflation-adjusted data.
7. Mishel, Bernstein, and Shierholz, *The State of Working America*. Note that this trend is based on a more broad group of workers than the full-time, full-year working population covered in this chapter.
8. Analysis uses seasonally adjusted data.
9. However, in three metro areas where 50 percent or more of the population was a race other than non-Hispanic white (Honolulu, Stockton, and Modesto), the wage ratio of white to non-white workers was relatively low.
10. Elizabeth Kneebone and Emily Garr, "The Landscape of Recession: Unemployment and Safety Net Services Across Urban and Suburban America" (Washington: Brookings Institution, 2010).
11. Based on data from the 2008 American Community Survey.
12. These figures are meant to approximate 2009 annual unemployment rates. They were calculated by applying 2008–2009 growth rates for the labor force and unemployed population (according to national-level BLS data) to the metro-level American Community Survey data for each metro area and education group. Note that data from the 2008 ACS is published for the population age 25 to 64 while BLS data by educational attainment cover the population age 25 and older.