

**THE ECONOMIC OUTLOOK FOR
OAKLAND COUNTY
IN 2019–2021**

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Prepared for



April 2019

A condensed version of this report was presented to the 34th annual Oakland County Economic Outlook Luncheon at the Troy Marriott Hotel on April 26, 2019. Sponsored by fourteen Oakland County organizations, the luncheon was hosted by the Oakland County Department of Economic Development & Community Affairs; Chase; and Oakland Community College. The full report is also available on the Web (updated each year) at www.AdvantageOakland.com or lsa.umich.edu/econ/rsqe.

Table of Contents

Introduction.....	1
Review of the Forecast for 2018: A Report Card	1
The Current State of Oakland County’s Economy.....	3
Employment Path of the Oakland County Economy.....	3
Job Change in Oakland County by Industry Wage Category, 2010–18.....	4
Unemployment Path of the Oakland County Economy.....	5
Oakland County Compared with U.S. Counties of Similar Size.....	6
County Level Real GDP	8
National Outlook: 2019–21.....	9
Oakland County Outlook: 2019–21	12
Inflation.....	12
Employment Path.....	13
Job Change by Industry Wage Category, 2018–21	15
Employment by Detailed Industry Category	15
Unemployment.....	19
Real Wage.....	20
Conclusion	21
Appendix A: Forecast of Jobs in Oakland County by Detailed Industry Division, 2019–21.....	23
Appendix B: Indicator Values for Comparison of Oakland County with 37 U.S. Counties of Similar Size	27

INTRODUCTION

Oakland County has been branded as a shimmering horizon of good economic news, a portrait that is backed up by the numbers. The county has entered a record-setting tenth consecutive year of uninterrupted job growth since the recession's low point at the end of 2009. Oakland's pace of job growth from 2010 to 2018 well outstripped that of both the nation and Michigan.

The county's unemployment rate in 2018 posted the lowest annual reading since the golden year of 2000, 0.6 percentage points below the average U.S. rate for 2018. Oakland's labor force has grown every year since 2011, as improving job opportunities have drawn more workers into the labor market. And this robust economy approaching full employment is percolating in an environment of modest local price inflation.

Some enviable milestones are now in plain sight on the horizon. With a continuation of job growth this year, the county economy would surpass the vibrant 1990s, the longest stretch of time for which we have records. Also, the economy is within sight of achieving an all-time employment peak. In addition, the labor market is within a percentage point of its lowest annual unemployment rate on record. Will the Oakland economy reach or surpass some of these historical milestones over the next few years?

Our view of where the Oakland County economy is now and where it's headed over the next three years is the central focus of this report. We offer our take on the path of employment by industry, unemployment, inflation, and wages through 2021. We also assess the performance of employment over the current recovery and through the forecast period in terms of wage levels. We consider how the county is faring compared with counties of similar size around the nation according to indicators of future prosperity. As a special addition to this year's report, we analyze the new county GDP data series generated by the Bureau of Economic Analysis. As always, we also summarize the national outlook underlying our forecast of Oakland County.

The local forecast is generated from a regional model constructed specifically for this study at the University of Michigan's Research Seminar in Quantitative Economics (RSQE) in the Department of Economics. The regional model uses national economic indicators from RSQE as inputs. The Oakland model was constructed with the support of the Oakland County Department of Economic Development & Community Affairs.

Before considering our perspective on how the Oakland County economy will evolve through 2021, we first take a look at 2018, to learn more about what kind of year it was and to gauge how well we anticipated developments as that year began.

REVIEW OF THE FORECAST FOR 2018: A REPORT CARD

A year ago (April 26, 2018), we presented our thirty-third economic outlook for Oakland County at the annual Economic Outlook Luncheon. Last year's forecast of employment, unemployment, and inflation for 2018 can now be compared with estimates of the outcome for that year, to see how accurate our forecast was.

In last year's report, we forecast that that Oakland County's private sector would add 11,713 jobs in 2018, for a growth rate of 1.7 percent. We now estimate that the county gained 8,861 new jobs last year, or 1.3 percent, resulting in an overshoot of 0.4 percentage points, or four workers per 1,000. That forecast error is well below our average absolute error of 1.6 percent since 1986.

Oakland County has entered a record breaking tenth consecutive year of uninterrupted job growth that well outpaced both the nation and Michigan.

The county's unemployment rate in 2018 posted the lowest annual reading since 2000.

This robust economy approaching full employment is percolating in an environment of modest local price inflation.

Some enviable milestones are now on the horizon for the Oakland County economy: the longest duration of economic expansion on record; its all-time employment peak; and its lowest annual unemployment rate ever recorded.

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Table 1. Report Card: Track Record over the Years

Year of Forecast	% Forecast Error for Total Private Jobs	Year of Forecast	% Forecast Error for Total Private Jobs
1986	+1.4	2003	+1.5
1987	+0.7	2004	+2.6
1988	-1.8	2005	+1.4
1989	-1.9	2006	+3.4
1990	+2.2	2007	0.0
1991	+3.9	2008	+2.3
1992	-2.0	2009	+5.5
1993	+0.5	2010	-1.7
1994	-1.3	2011	-2.5
1995	+0.2	2012	-2.6
1996	-0.5	2013	-1.1
1997	+0.6	2014	-0.3
1998	+1.3	2015	-0.1
1999	-1.2	2016	-0.1
2000	+0.6	2017	+1.1
2001	+1.9	2018	+0.4
2002	+3.2		

(Positive numbers indicate that the forecast was too high; negative numbers indicate that it was too low.)

Average absolute forecast error 1986–2018: 1.6%

	Forecast 2018	Actual 2018
Unemployment rate	3.4%	3.3%
Consumer inflation rate	2.3%	2.4%

Forecast date: April 2018

Among the major industry divisions, the largest shortfall in our forecast was in leisure and hospitality services. We expected that industry division to grow by 1,514 jobs (2.1 percent), whereas we now estimate that it added only 252 jobs (0.4 percent). We believe the weakness in this sector is temporary and that growth will bounce back in 2019.

Our forecast for the government sector was also a little too high. We anticipated job growth of 1.1 percent in 2018; instead, government employment increased by only 0.8 percent.

We had forecast that the unemployment rate would decline by 0.1 percentage points, from 3.5 percent in 2017 to 3.4 percent in 2018. We were spot on in terms of the change, but the starting point was revised during the year. The unemployment rate for Oakland County did decline by 0.1 percentage points, from a revised value of 3.4 percent in 2017 to 3.3 percent in 2018.

Last year, we forecast that private-sector job growth would continue in 2018 at a rate of 1.7 percent. We now estimate that the county gained jobs at a rate of 1.3 percent. We judge that much of the shortfall in 2018 was due to weakness in the leisure and hospitality services industry.

For unemployment, we were spot on in terms of the change, but the starting point was revised during the year. The unemployment rate for Oakland County declined by 0.1 percentage points from a revised value of 3.4 percent in 2017 to 3.3 percent in 2018.

Our forecast for inflation was also very close. Local prices increased by 2.4 percent in 2018 instead of the 2.3 percent we had forecast.

Our forecast for inflation was also very close. We underestimated local consumer inflation by 0.1 percentage points. Local prices increased by 2.4 percent in 2018 instead of the 2.3 percent we had forecast.

This review gives us a glimpse of a county economy continuing to grow deep into the recovery period in a rapidly tightening labor market. We need to take a more detailed look at the current state of the economy, however, before we anticipate developments beyond 2018.

THE CURRENT STATE OF OAKLAND COUNTY’S ECONOMY

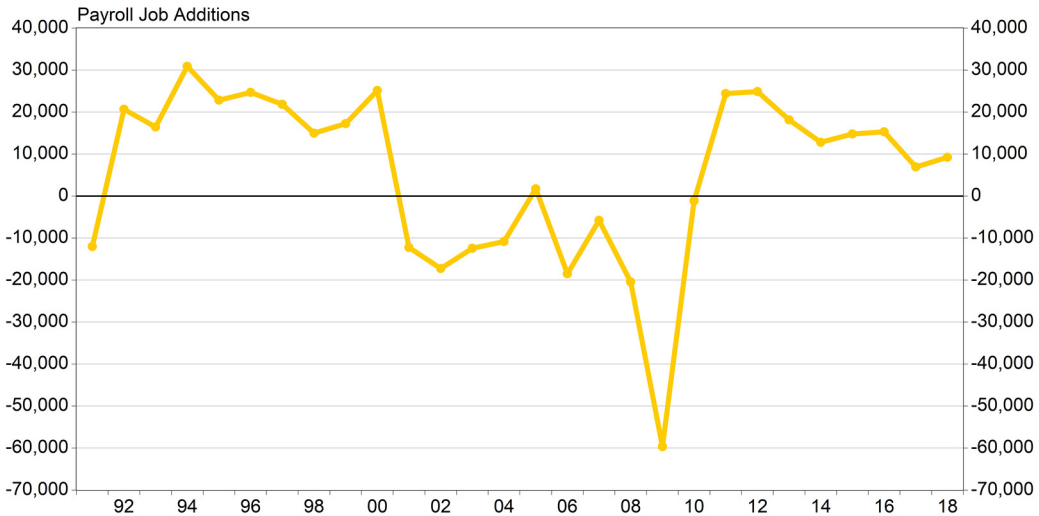
Employment Path of the Oakland County Economy

Oakland County’s economy grew vigorously during the 1990s as shown in figure 1. The county added 182,700 jobs from 1990 to 2000, an average pace of 2.8 percent per year.

The county gave up the majority of that growth during the 2000s, shedding 156,500 jobs. That came to an average rate of decline of 2.2 percent annually. In total, the county lost 86 percent of the jobs it had gained in the preceding decade.

The 2010s have seen a return to growth in Oakland County. We estimate that through 2018, the county has added back 126,500 jobs, registering an average growth rate of 2.1 percent per year.

Figure 1. Job Growth in Oakland County, 1991–2018



Job growth in the county slipped to a 1.0 percent annual pace in 2017, its slowest rate during the current recovery period. Based on the currently available data, it appears that growth bounced back nicely in 2018. We now estimate that the county added 9,300 jobs for the year, a growth rate of 1.3 percent.

The acceleration in Oakland County’s job growth is a heartening sign this far into the county’s recovery period. It is especially impressive given the recent softness in Detroit Three light vehicle sales, which have declined in each of the past three years. In our view, Oakland’s recent success reflects the ongoing diversification of the county’s economy toward future growth sectors, which has been enabled by the county’s well-educated labor force.

The 1990s were a period of vigorous growth, adding 182,700 payroll jobs, an average pace of 2.8 percent per year.

The 2000s were a tough time for Oakland, losing 156,500 jobs during the decade, an average growth rate of negative 2.2 percent per year.

Oakland has returned to job growth in the current decade, posting 126,500 job additions from 2010 to 2018, an average growth pace of 2.1 percent per year.

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Oakland County's job gains in 2018 were concentrated in three major industry divisions. In order, they were: professional and business services; private education and health services; and trade, transportation, and utilities. Together, these industries accounted for over four-fifths of the county's job gains for the year.

The government sector has continued to lag the private sector since returning to job growth in 2016. The sector grew at a 0.8 percent pace in 2018, half a percentage point slower than the private sector.

We now explore further the wage structure of the current recovery.

Job Change in Oakland County by Industry Wage Category, 2010–18

To better understand what types of jobs have been created in Oakland County over the recovery period to date, we dissected the job recovery into three wage categories. Specifically, we partitioned the 151 unique industries in our dataset into three categories based on their average annual wage in 2017: higher-wage industries (\$75,000 or more, at least 35 percent above the U.S. average of \$55,390 in 2017); middle-wage industries (\$35,000 to \$74,999); and lower-wage industries (under \$35,000, or at least 35 percent below the U.S. average). For comparison, the average annual wage in Oakland was \$61,536 in 2017. We then computed the change in employment, both in number of jobs and in percentages, over the period from 2010 to 2018 for each of the three wage categories and for the county overall. The results are shown in table 2.

The current job recovery to date is highlighted in the last column in table 2, which shows the percentage change in jobs over the eight years by wage category. Higher-wage industries grew faster than average on a percentage basis in Oakland County from 2010 to 2018. The 49,943 job additions in this category came to total growth of 25.4 percent.

Middle-wage industries grew more slowly in Oakland County on a percentage basis, 15.5 percent. Because the 2010 employment level in middle-wage industries was so large, however, that growth rate translated into 43,156 job additions, only slightly less than the number of jobs in the higher-wage industries.

Lower-wage industries added 33,361 jobs in Oakland County from 2010 to 2018, the fewest of the three wage categories. However, because the 2010 employment level in lower-wage industries was relatively small, that translated into a healthy growth rate of 24.6 percent.

An important factor behind the relatively slow growth in the middle-wage industries in Oakland County during this time is job losses in the government sector.

Table 2. Job Change in Oakland County by Industry Wage Category, 2010–18

	2010	2018	Change 2010–2018	% Change 2010–2018
Total all industries	611,142	737,602	126,460	20.7
Higher-wage industries (\$75,000 or more)	196,912	246,854	49,943	25.4
Middle-wage industries (\$35,000 to \$74,999)	278,566	321,722	43,156	15.5
Lower-wage industries (under \$35,000)	135,665	169,026	33,361	24.6

Source: BLS, Quarterly Census of Employment and Wages. Higher-wage industries have an average wage in 2017 at least 35 percent above the U.S. average (\$55,390) and lower-wage industries at least 35 percent below the U.S. average.

Next up is a consideration of the unemployed in the current recovery.

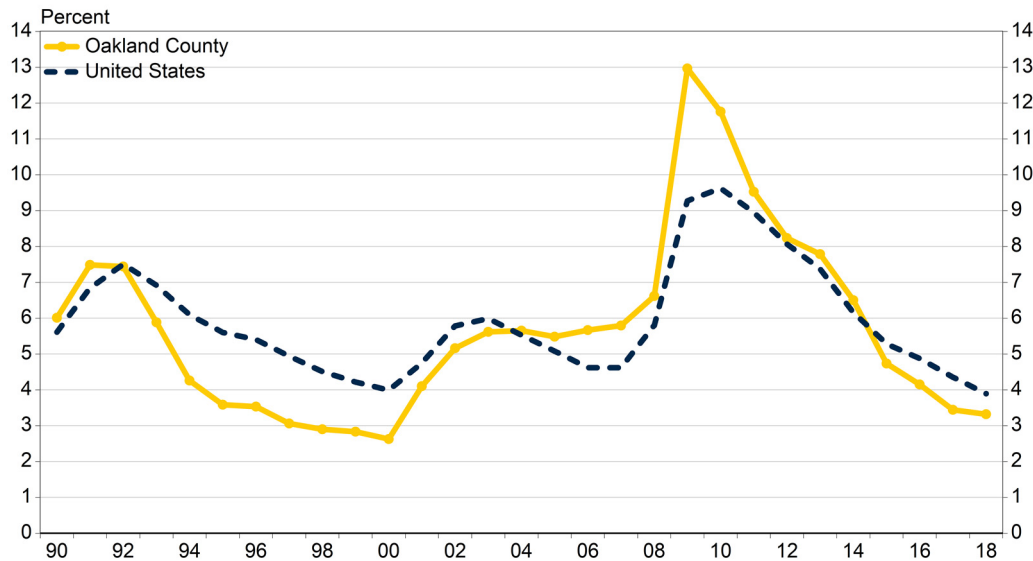
The major industry divisions adding the greatest number of jobs in 2018 were, in order: professional and business services; private education and health services; and trade, transportation, and utilities.

Job growth in Oakland over the current economic recovery to date (2010–18) is skewed toward the higher-compensated end of the wage scale, with both job growth and job additions for higher-wage industries leading middle-wage and lower-wage industries.

Unemployment Path of the Oakland County Economy

The path of Oakland County’s annual unemployment rate from 1990 to 2018 is shown in figure 2, along with the rate for the United States for comparison.

Figure 2. Unemployment Rates for Oakland County and for the United States, 1990–2018



Oakland County’s unemployment rate climbed to 7.5 percent in 1991, its peak level during the early 1990s recession. It declined over the remainder of the 1990s, reaching a low point of 2.6 percent in 2000.

Oakland’s unemployment rate climbed to 6.6 percent in 2008, before spiking during the Great Recession to 13.0 percent in 2009 and 11.8 percent in 2010. The national unemployment rates for those years were 5.8, 9.3, and 9.6 percent, respectively.

Oakland County’s unemployment rate has come down sharply since the Great Recession. Oakland’s rate fell below the national rate in 2015, and has stayed there every year since then.

Oakland’s unemployment rate averaged 3.3 percent in 2018. That was only one-tenth of a percentage point lower than the 2017 average, but it was still a move in the right direction. It was also the lowest annual unemployment rate the county had recorded since the all-time low achieved in 2000. The U.S. unemployment rate averaged 3.9 percent in 2018, six-tenths of a percentage point above Oakland County’s unemployment rate for the year.

Growth in the county’s labor force came almost to a standstill in 2018, at 0.1 percentage points. We believe that slowdown reflects a balancing act between a strong labor market, which is drawing more workers into the labor force, and a powerful downward pull from demographics, as baby boomers increasingly reach the normal retirement age.

We now turn to our traditional comparison of Oakland County with counties of similar size around the United States on a variety of economic measures.

Oakland’s unemployment rate averaged 3.3 percent in 2018—down three-quarters from its peak in 2009—the lowest annual reading since 2000, and six-tenths of a percentage point below the U.S. rate.

Growth in the county’s labor force came almost to a standstill in 2018, at 0.1 percentage points, reflecting a balancing act between a strong labor market and demographics.

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Oakland County Compared with U.S. Counties of Similar Size

It is useful to compare Oakland County's economic foundation with that of its peer counties in order to identify Oakland's relative strengths and to assess the county's prospects in the future. To form a peer group, we include all counties that have a population within 350,000 of Oakland's 2017 level of 1.25 million, i.e., all counties with between 900,000 and 1.6 million residents. There were thirty-seven such counties other than Oakland in 2017. Many of the nation's most prosperous and successful counties are included in this group. Like Oakland, many are also among the select group of U.S. counties that have a AAA bond rating with multiple rating agencies.

We ranked Oakland County and these thirty-seven other counties on five measures that we consider to be indicative of economic prospects moving forward. The rankings are shown in table 3; the data underlying the rankings are provided in appendix B. The measures we consider are: (1) educational attainment—share of the population aged 25 to 64 (prime working-age population) with at least an associate's degree in 2017; (2) child poverty—share of the population aged 17-and-under who lived within families whose income was below the poverty level in 2017; (3) median family income adjusted for the cost of living¹ in 2017; (4) high income seniors—share of persons aged 65 and older with income at least five times the poverty line in 2017; and (5) professional occupations—share of employed county residents working in professional and managerial occupations in 2017.

A lower number for the rank indicates a better position for the measure among the counties; that is, a rank of 1 is best and 38 is worst. We order the thirty-eight counties, including Oakland, by the summation of the rankings across the five measures. This order is not meant to be a rigorous measure of overall ranking, but it does give a sense of the counties' relative standings. On this basis, Oakland places sixth overall, up three places from its ranking a year ago, an impressive achievement considering that this peer group contains some of the healthiest local economies in the nation.

Oakland's status has improved in every measure since our previous forecast with current rankings between fifth and fourteenth across the different categories. Notably, Oakland ranks 5th in professional occupations, 5th in median family income, and 6th in child poverty. Oakland's placement in these categories has helped it maintain and improve its position compared to its peers.

After last year's forecast presentation, we were asked about the distribution of child poverty within the county. Data for communities within the county are not available for the year 2017, but 5-year averages for the years 2012–2017 are available. Those statistics show dispersion in the level of child poverty across communities within Oakland County. Some communities have reported child poverty rates of zero percent, while others report levels above 40 percent. Oakland's average level of child poverty, however, has fallen in every year since 2011.

Oakland's lowest ranking came in the share of high-income seniors, but the county's ranking of 14th on this metric still placed the county well into the top half of its peer group.

We ranked Oakland among thirty-seven other counties of similar size in the United States on a series of measures we consider to be indicative of future economic prosperity.

Oakland ranks sixth overall among the thirty-eight counties, up three places from last year, an impressive achievement considering that this peer group contains some of the healthiest local economies in the nation.

¹Our cost of living calculation is based upon the Bureau of Economic Analysis, Regional Price Parity Indices for Metropolitan Areas, extended to 2017 using differences in the regional consumer price index from the national consumer price index, and adjusted to specific counties using the difference between the median gross rent in the county and the metropolitan area from the 2017 American Community Survey.

OAKLAND COUNTY ECONOMIC OUTLOOK 2019–2021

We believe that Oakland County’s strong overall performance in these measures suggest it is securely positioned now and for the future. The combination of an educated populace, a high share of managerial and professional jobs, and an attractive standard of living should provide a solid foundation for economic prosperity over our forecast period and in the years to come.

Oakland is strongly positioned to thrive in the future, with an educated populace, a high share of managerial and professional jobs, and an attractive standard of living.

Table 3
Oakland County Compared with 37 U.S. Counties of Similar Size*
 (Ranking based on selected Indicators of prosperity)

County	State	Population 2017	Associate's Degree or More	Child Poverty	Median Family Income**	High-Income Persons Aged 65 or Older	Managerial, Professional	Sum of Rankings	Rank of Sum
Fairfax	VA	1,148,433	1	8	1	1	1	12	1
Montgomery	MD	1,058,810	2	7	3	2	2	16	2
Collin	TX	969,603	5	1	2	12	3	23	3
Nassau	NY	1,369,514	10	3	6	3	13	35	4
DuPage	IL	930,128	6	4	4	11	11	36	5
Oakland	MI	1,250,836	8	6	5	14	5	38	6
Bergen	NJ	948,406	9	2	13	8	9	41	7
Westchester	NY	980,244	11	9	9	5	10	44	8
Wake	NC	1,072,203	3	15	7	15	4	44	8
Hennepin	MN	1,252,024	4	17	8	16	7	52	10
Fairfield	CT	949,921	15	13	11	6	14	59	11
Travis	TX	1,226,698	14	18	10	10	8	60	12
Contra Costa	CA	1,147,439	17	14	15	4	17	67	13
Fulton	GA	1,041,423	7	25	12	18	6	68	14
Suffolk	NY	1,492,953	20	5	14	9	22	70	15
St. Louis	MO	996,726	16	16	16	19	15	82	16
Mecklenburg	NC	1,076,837	13	22	17	24	16	92	17
Allegheny	PA	1,223,048	12	19	18	32	12	93	18
Salt Lake	UT	1,135,649	24	11	19	20	19	93	18
Prince George's	MD	912,756	35	12	20	7	23	97	20
Honolulu	HI	988,650	22	10	24	13	36	105	21
Gwinnett	GA	920,260	23	21	21	23	27	115	22
Franklin	OH	1,291,981	21	30	22	25	18	116	23
Erie	NY	925,528	18	27	23	27	26	121	24
Palm Beach	FL	1,471,150	25	23	29	17	32	126	25
Sacramento	CA	1,530,615	32	24	25	21	25	127	26
Pinellas	FL	970,637	28	20	27	29	29	133	27
Hillsborough	FL	1,408,566	26	26	30	28	24	134	28
Pima	AZ	1,022,769	29	29	32	22	28	140	29
Cuyahoga	OH	1,248,514	27	34	26	33	20	140	29
Orange	FL	1,348,975	19	28	35	34	31	147	31
Duval	FL	937,934	31	31	28	30	30	150	32
Shelby	TN	936,961	34	36	31	26	35	162	33
Marion	IN	950,082	30	32	34	35	33	164	34
Philadelphia	PA	1,580,863	36	37	37	38	21	169	35
Milwaukee	WI	952,085	33	33	33	36	34	169	35
Fresno	CA	989,255	37	35	36	31	37	176	37
Bronx	NY	1,471,160	38	38	38	37	38	189	38

*All counties in the United States with a population between 900,000 and 1,600,000 in 2017

**Adjusted for cost of living

Source: American Community Survey 2017. Census Bureau Population Estimates, April 2018.

COUNTY LEVEL REAL GDP

The Bureau of Economic Analysis recently released prototype statistics for annual Gross Domestic Product (GDP) by county covering the years 2012–2015. The left-hand map in figure 3 shows 2015 real GDP for each of the 83 counties in Michigan.

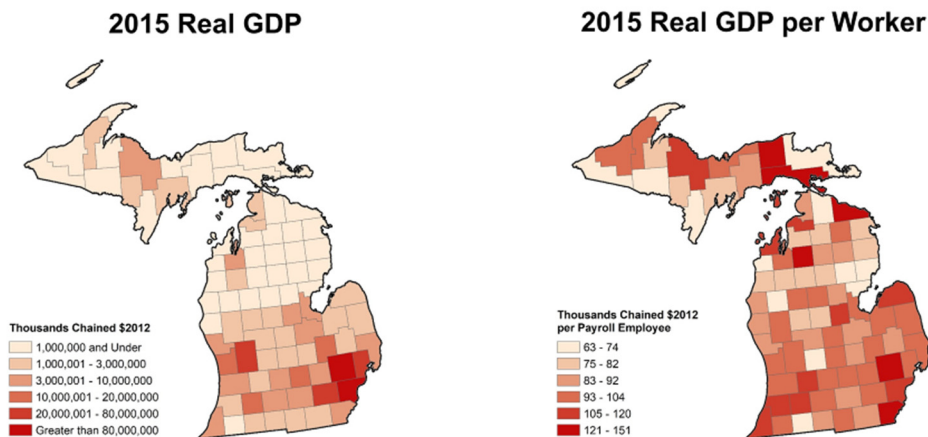
GDP measures the value of all of the goods and services produced in a particular location over a specific time period. Real GDP adjusts that measure for inflation, in this case to be expressed in 2012 dollars.

Oakland County’s real GDP was \$101 billion in 2015. That was the largest GDP out of all of the counties in Michigan, about 25 percent larger than the next-largest level, in neighboring Wayne County. In fact, Oakland County accounted for 23 percent of Michigan’s real GDP in 2015.

Private service-producing industries accounted for 76.1 percent of Oakland County’s real GDP in 2015. Private goods-producing industries accounted for 19.8 percent, while government accounted for just 4.2 percent. Relative to Michigan overall, a higher share of Oakland County’s GDP comes from private-sector service industries and a lower share comes from government.

Oakland County’s real GDP was \$101 billion in 2015, the largest out of all counties in Michigan and 23 percent of the state total.

Figure 3. Michigan County-Level GDP



The right-hand map in figure 3 shows 2015 real GDP divided by the number of payroll employees, or output per worker, for each of Michigan’s counties. Oakland County’s output per worker was \$143,100 in 2015, about 32 percent higher than the state average. Oakland’s level ranked fourth out of the state’s counties.

The three counties with higher levels of output per worker in 2015 were Kalkasa, Luce, and Mackinac, each of which had fewer than 5,000 payroll employees. We believe that the small sizes of those counties’ workforces mean their rankings on this measure should be taken with a grain of salt.

Wayne County had real output per worker of \$115,400 in 2015, which was 19.4 percent lower than Oakland’s level. Kent, Macomb, and Washtenaw Counties, with the state’s third- through fifth-largest economies, all had real output per worker near \$100,000, roughly 30 percent lower than Oakland’s.

In 2015, Oakland County’s output per worker (real GDP divided by the number of payroll employees) was \$143,100, about 32 percent higher than the state average.

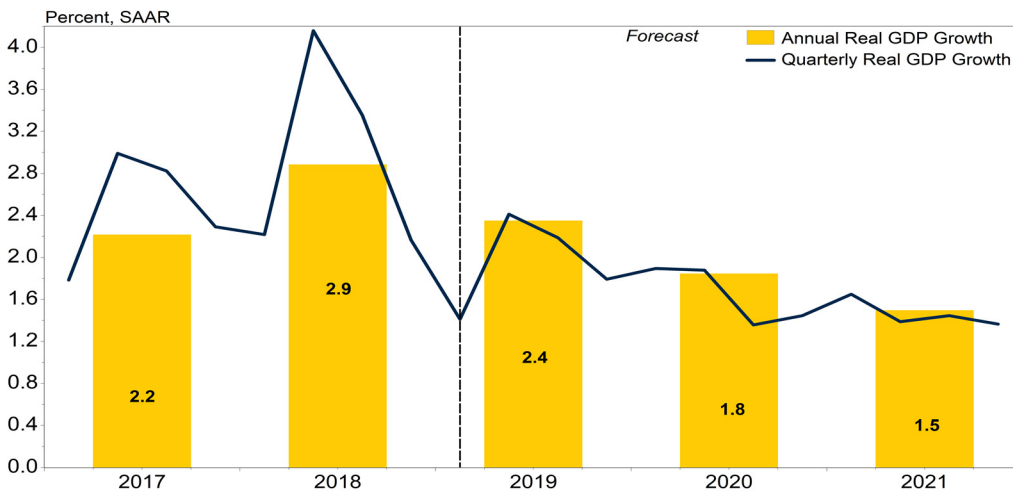
Private sector output per worker in Oakland County was even higher in 2015 than the overall level, at \$146,400. In the government sector, output per worker was \$95,200.

Oakland operates within a broader economic environment that has ramifications for our outlook for the county. As we extend our analysis into the future, we start with a summary of the national outlook.

NATIONAL OUTLOOK: 2019–21

The future course of the Oakland County economy depends in part on the overall health of the national economy. Forecasts of economic indicators for the U.S. economy in 2019–20 are from a release on March 18, 2019, by Jacob Burton, Gabriel Ehrlich, Daniil Manaenkov, Owen Nie, and Aditi Thapar of the Research Seminar in Quantitative Economics (RSQE) at the University of Michigan; they also provided internally generated extensions of the forecast to 2021. The national outlook is summarized in figures 4, 5, 6 and 7 by economic indicators that are important to Oakland’s economy.

Figure 4. Growth in U.S. Real GDP, 2017–21



The best single measure of the U.S. economy is inflation-adjusted, or real, Gross Domestic Product (GDP), which comprises all of the goods, services, and structures produced in the economy. As shown in figure 4, real GDP grew by 2.9 percent in 2018, on par with 2015 as the strongest performance of this business cycle expansion. Growth slowed during the course of 2018, however, from an annual rate of 4.2 percent in the second quarter to 2.2 percent in the fourth quarter.

It appears that real GDP growth will continue through June 2019, thus establishing a record for the longest economic expansion in U.S. history.

We expect GDP growth to decelerate over the next few years, as the temporary boost from the tax cuts in the Tax Cuts and Jobs Act of 2017 and the extra federal spending from the fiscal 2018 and 2019 budgets both fade.

We expect the Federal Reserve to slow its recent pace of monetary tightening going forward. We foresee one additional increase in the range for the federal funds rate this year and one more in 2020 followed by a flat path in 2021.

Overall, we are projecting annual real GDP growth to register 2.4 percent in 2019, 1.8 percent in 2020, and 1.5 percent in 2021.

Real GDP grew by 2.9 percent in 2018 on par with 2015 as the strongest performance of this business cycle expansion.

It appears that real GDP growth will continue through June 2019, thus establishing a record for the longest economic expansion in U.S. history.

We are projecting real GDP growth of 2.4 percent in 2019, 1.8 percent in 2020, and 1.5 percent in 2021 as the fiscal stimulus fades.

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Our forecast assumes a relatively rosy scenario for international trade relations, with no further tariffs imposed by the United States or retaliatory tariffs by other nations. If trade tensions begin to worsen again, our forecast could prove to be too optimistic.

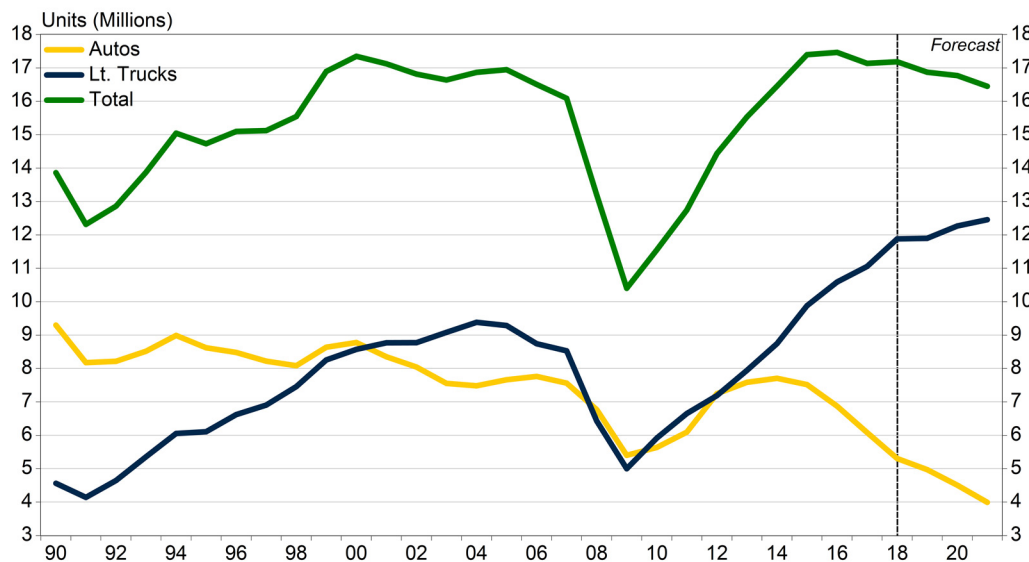
Although we are projecting growth to slow down over the next few years, our baseline outlook does not include a national recession over the forecast horizon. We believe that the Fed will be able to engineer a so-called “soft landing,” with growth slowing but not venturing into negative territory.

We view the most prominent risk to our forecast as the possible eruption of an international trade war. Although the recently enacted tariffs on Chinese products should not push us into a recession on their own, an escalating cycle of retaliatory tariffs between the United States and its trading partners does run that risk.

Another important input to the outlook for Oakland is the national vehicle sales forecast. From a longer-term perspective, total sales of U.S. light vehicles—cars, minivans, sport utility vehicles, crossovers, and pickup trucks—exceeded 16 million units in every year from 1999 through 2007 before plunging to 13.2 million units in 2008 with the onset of the Great Recession, as shown in figure 5. Sales bottomed out at 10.4 million units in 2009, and then grew every year through 2016, when they set an all-time record of 17.5 million units, although that pace now feels like a hazy memory. Sales came to 17.2 million units in 2018, a slight uptick from 2017.

We are projecting light vehicle sales to fall to 16.9 million this year before sliding to 16.8 million in 2020 and 16.5 million in 2021.

Figure 5. U.S. Light vehicle Sales, 1990–2021



The decline is driven by automobiles, as light truck sales, which include minivans, SUVs, and CUVs, continue to grow at a moderate pace. We see the light truck share of vehicle sales edging up to 76 percent of the market in 2021.

The decline in unit sales of light vehicles over our forecast period obscures a more heartening trend, which is that real U.S. light vehicle output continues to inch up as shown in figure 6.

The difference between the trends for sales and real output, or value added, arises from the diverging fortunes of automobiles and light trucks. Since light trucks contain more

We view the most prominent risk to our forecast as the possible eruption of an international trade war.

Total sales of U.S. light vehicles grew every year from 2009 to 2016, when they set an all-time record of 17.5 million units. Sales then downshifted in 2017–18 to between 17.1 and 17.2 million units.

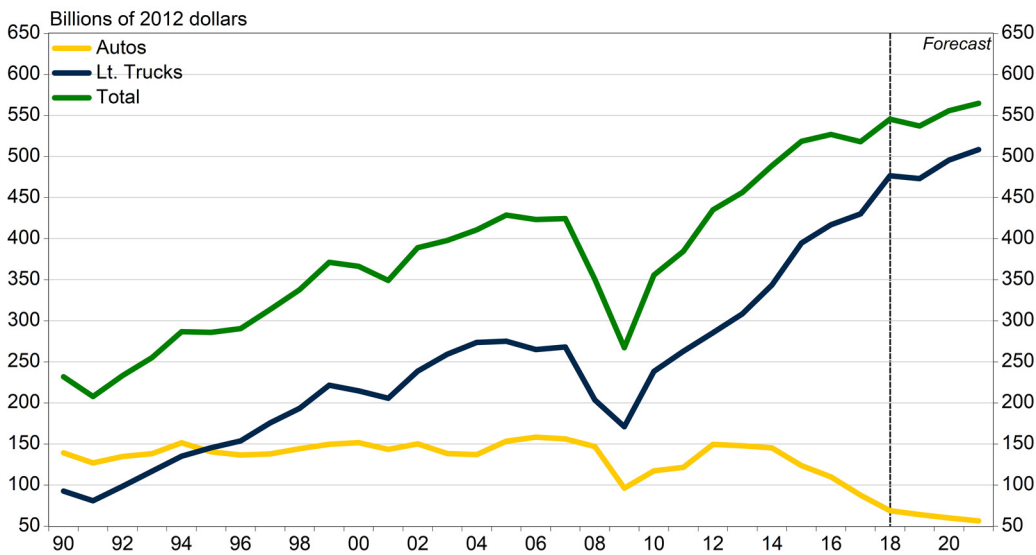
We see sales decelerating a bit further to 16.9 million units in 2019, 16.8 million in 2020, and 16.5 million in 2021.

value added than automobiles, the continued growth of light truck sales outweighs the decline in auto sales when it comes to vehicle output. We forecast average growth of 2.2 percent per year in real output of light trucks from 2018 to 2021, compared with an average decline of 6.5 percent per year in automobiles.

We expect total real U.S. light vehicle output to grow from 546 billion chained 2012 dollars in 2018 to 565 billion dollars in 2021, for a modest average growth rate of 1.2 percent per year. That growth is better than the declines we expect for unit sales, but it is still slower than the average annual growth rate of 5.6 percent recorded between 2011 and 2018

Despite the decline in the number of vehicles sold we expect that the real dollar value of vehicle output will increase as buyers shift from cars to light trucks, mini-vans, SUVs, and CUVs.

Figure 6. U.S. Light Vehicle Output, 1990–2021



The Detroit Three’s share of the light vehicle market fell from 42 percent in 2017 to 41.7 percent last year as the overall market eked out a small gain, as shown in figure 7.

We see the Detroit Three share dipping a bit further to 41.4 percent in 2019 before nudging back up to 41.5 percent in 2020 and 2021.

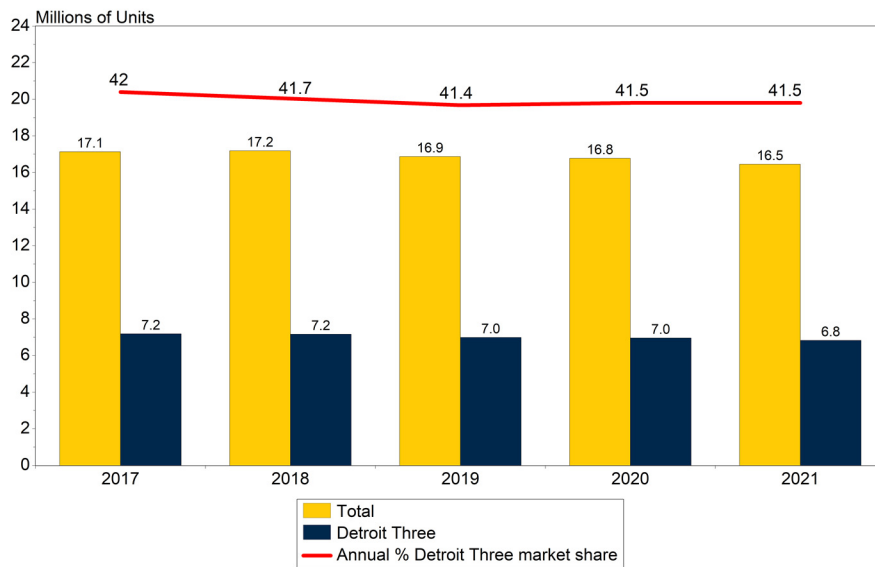
When combined with our outlook for the total light vehicle market, this projection yields a declining profile for Detroit Three sales. Detroit Three sales fall from 7.2 million units per year in 2017 and 2018 to 7.0 million units per year in each of 2019 and 2020. They then fall a bit further to 6.8 million units in 2021.

Our forecast makes several relatively optimistic assumptions: that this year’s contract negotiations between the United Autoworkers and the Detroit Three automakers are completed without a prolonged work stoppage; the United States-Mexico-Canada Agreement is ratified successfully in all three nations; the Trump administration does not impose new tariffs on automotive imports from the European Union; and the trade tensions with China do not result in any substantial new tariffs.

We now turn to our view of the prospects for the Oakland County economy through 2020.

We forecast Detroit Three sales to fall from 7.2 million units in 2017 and 2018 to 7.0 million in each of 2019 and 2020. They then fall a bit further to 6.8 million units in 2021.

Figure 7. U.S. Light Vehicle Sales, Total vs. Detroit Three, 2017–21



OAKLAND COUNTY OUTLOOK: 2019–21

The economic outlook for Oakland County through 2020 is measured using information on employment, unemployment, inflation, and the real wage. First, we consider the local rate of inflation.

Inflation

Local inflation is measured in figure 8 by the growth rate of the Detroit Consumer Price Index (CPI). Consumer price data are compiled at the regional level; they are not available for the county in isolation.

Since 1990, Detroit CPI inflation has averaged 2.2 percent per year, about three-tenths of a percentage point lower than the average U.S. rate of 2.5 percent.

Local and national inflation both registered 2.4 percent in 2018, pushed upward by a large increase in energy prices that persisted through most of the year. That was the highest level since 2011, when Detroit CPI inflation registered 3.3 percent and national CPI inflation clocked in at 3.1 percent.

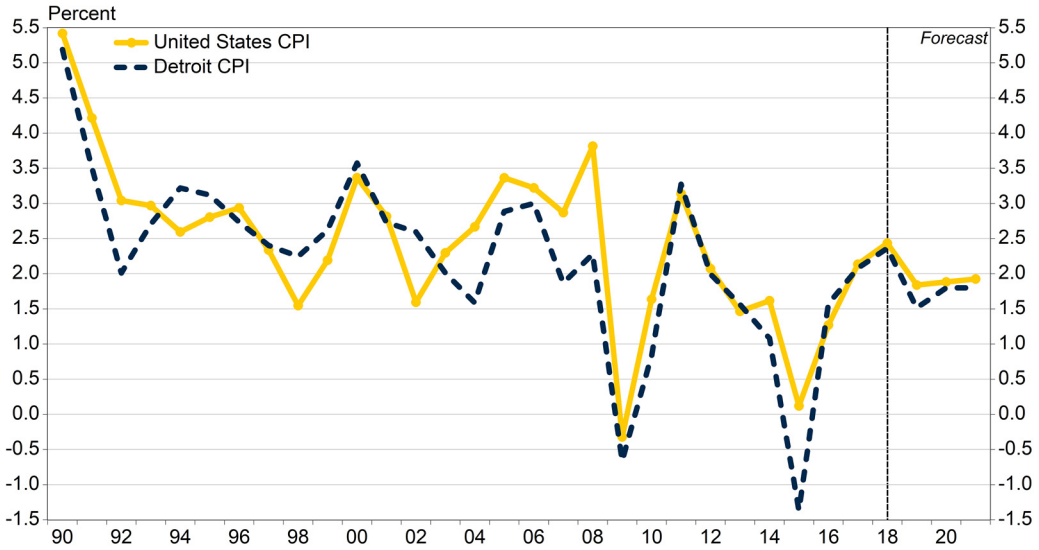
Energy prices tumbled toward the end of 2018 and the start of 2019, which should cause inflation to dip this year. We are forecasting national inflation of 1.8 percent and local inflation of only 1.5 percent for the year.

Inflation then inches back up toward the Federal Reserve’s target of 2.0 percent as energy prices stabilize. We are forecasting local inflation of 1.8 percent per year in 2020 and 2021. National inflation runs one-tenth of a percentage point higher than local inflation in each of those years.

Local prices rose 2.4 percent in 2018, pushed upward by a large increase in energy prices that persisted through most of the year.

We are forecasting local inflation of 1.8 percent per year in 2020 and 2021. National inflation runs one-tenth of a percentage point higher than local inflation in each of those years.

Figure 8. Inflation Rate, Detroit and U.S. CPI 1990–2021



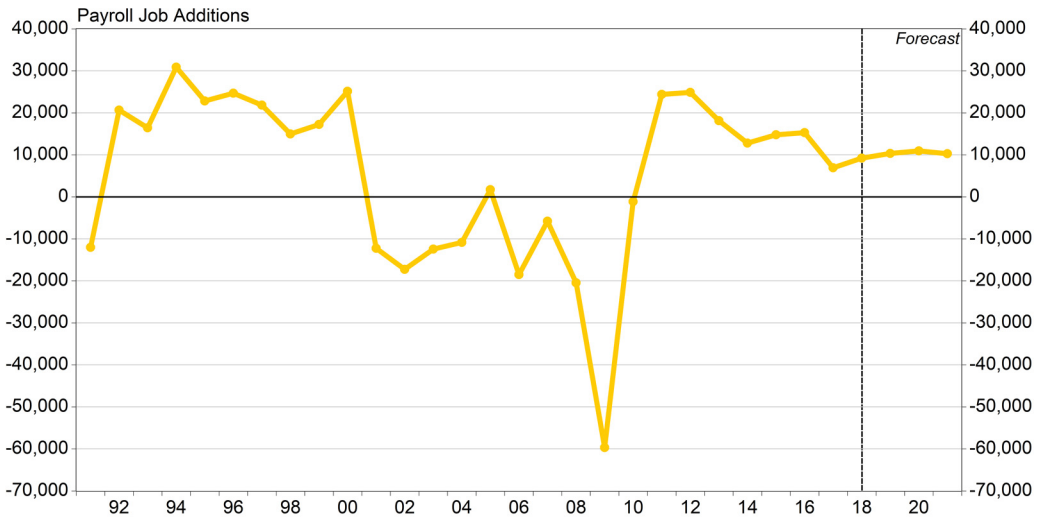
Next, we evaluate the county’s prospects for job growth in total, putting that in context with recent job market developments.

Employment Path

On a quarterly basis, using our estimates for the end of 2018, Oakland County has now completed nine consecutive years of job growth since the previous recession’s low point at the end of 2009. (The small number of job losses recorded in 2010 is a statistical artifact that results from calendar-year averaging. The county actually gained jobs in each quarter of the year, but not quickly enough to take the annual average above its level the previous year.) The slowdown in job growth to the rate of 1.0 percent in 2017 was a temporary hiccup partially brought on by statistical revisions. The pace of growth bounced back in 2018 to 1.3 percent.

On a quarterly basis, Oakland County has now completed nine consecutive years of job growth.

Figure 9. Annual Job Growth in Oakland County, 1991–2021



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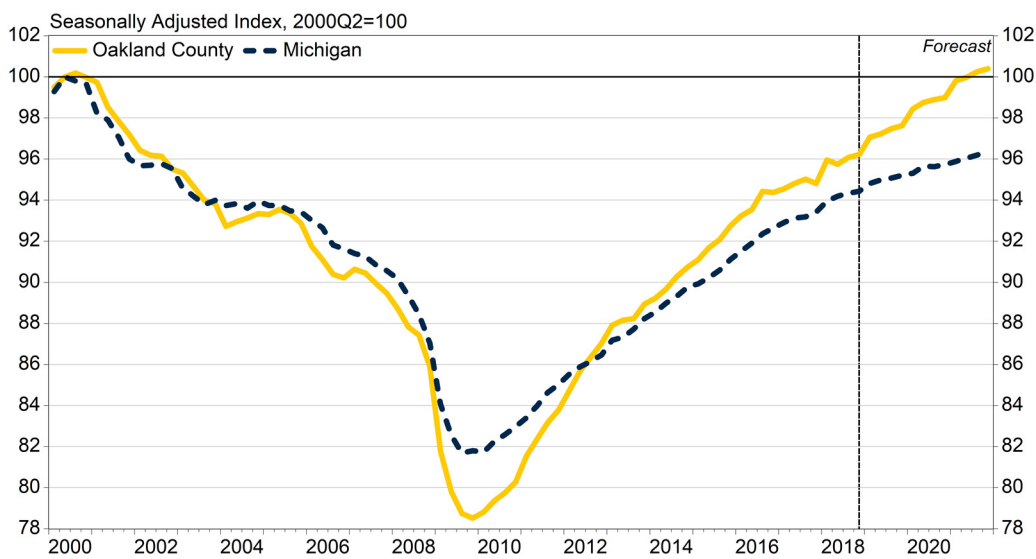
We expect growth of 1.4 percent in 2019, 1.5 percent in 2020, and 1.4 percent in 2021. That growth translates into gains of 10,300 jobs this year, 10,900 in 2020, and 10,300 in 2021 as shown in figure 9.

In total, we are forecasting 31,600 job additions over our forecast period, an average pace of 1.4 percent per year. That is a substantially faster pace than we currently anticipate for both the United States and the state of Michigan over our forecast period.

If our forecast proves correct, the span of Oakland’s current recovery will extend to at least twelve years, the longest stretch of time for which we have records. The county’s upward trajectory continues to be supported by its strong economic fundamentals.

To put Oakland County’s recovery from the Great Recession into perspective, in figure 10 we plot the quarterly path of the county’s total employment, adjusted for seasonal variations, from the beginning of 2000 to the end of our forecast period in 2021. We include the same path for Michigan, with both the county and state employment paths indexed to equal 100 in the second quarter of 2000, when Michigan reached its peak employment level.²

Figure 10. Total Jobs in Oakland County vs. Michigan, Seasonally Adjusted, First Quarter of 2000 to Fourth Quarter of 2021



Oakland County reached its peak employment level in the third quarter of 2000 before losing 166,500 jobs from then until the fourth quarter of 2009, its Great Recession-era low point—a decline of 21.6 percent from its peak employment level.

Oakland’s decline was more severe proportionally than Michigan’s peak-to-trough decline from the second quarter of 2000 to the third quarter of 2009. Michigan lost 859,100 jobs in that time, 18.3 percent of its peak level. Oakland’s labor market has recovered

We forecast gains of 10,300 jobs (1.4 percent) in 2019, 10,900 (1.5 percent) in 2020, and 10,300 (1.4 percent) in 2021—cumulating to 31,600 job additions over our three-year forecast period, an average pace of 1.4 percent—substantially faster than our forecast for both the nation and state.

If correct, our forecast extends Oakland’s recovery to at least twelve years, the longest stretch of time for which we have records.

From the spring of 2000 to the county’s low point in the fall of 2009, the county lost 166,500 jobs. Then the recovery followed: from the fall of 2009 to the fall of 2018, Oakland gained back 136,100 jobs.

²Using index values permits us to compare on the same figure two regions with widely different employment scales. To clarify: an index value of 90 indicates that employment in the relevant period is 90 percent of its level in the base period (in this case, the second quarter of 2000), that is, it’s 10 percent less than the base period value. An index value of 110 indicates a level of employment that is 10 percent higher than its level in the base period.

OAKLAND COUNTY ECONOMIC OUTLOOK 2019–2021

more vigorously from the recession than Michigan’s overall. We estimate that Oakland recovered 136,100 jobs from the end of 2009 to the end of 2018.

We forecast that Oakland County will create an additional 32,100 jobs from the end of 2018 to the end of 2021. (That total differs slightly than the total using calendar-year averages reported alongside Figure 9 because it is from the end of 2018 to the end of 2021.)

In our forecast, Oakland County sets a new employment peak in the summer of 2021. By contrast, the state as a whole is forecast to remain four percentage points below its peak employment level in that quarter.

The more vigorous job growth we are projecting for Oakland County relative to Michigan overall means that the gap between the two index lines in the figure continues to grow, from 1.8 index points at the end of 2018 to 4.0 points at the end of 2021.

Job Change by Industry Wage Category, 2018–21

The job change in Oakland County from 2018 to 2021 is distributed in table 4 across industry sectors based on each industry’s average wage, showing for the forecast period the same data that table 2 presented for the years 2010 to 2018. The categories are higher-, medium-, and lower-wage industries. The method for partitioning the data is outlined in the text for table 2.

The last column of table 4 shows, on a percentage basis, our forecast of job growth among the higher-, middle-, and lower-wage industries over the next three years. On a percentage basis, we are forecasting that job growth will be similar in all industry wage categories over the next three years. Employment in both higher-wage and lower-wage industries is expected to increase by 4.4 percent, while employment in middle-wage industries will grow by 4.1 percent.

Table 4. Job Change in Oakland County by Industry Wage Category, 2018–21

	2018	2021	Change 2018–2021	% Change 2018–2021
Total all industries	737,602	769,172	31,570	4.3
Higher-wage industries (\$75,000 or more)	246,854	257,684	10,830	4.4
Middle-wage industries (\$35,000 to \$74,999)	321,722	335,012	13,290	4.1
Lower-wage industries (under \$35,000)	169,026	176,476	7,450	4.4

Source: BLS, Quarterly Census of Employment and Wages. Higher-wage industries have an average wage in 2017 at least 35 percent above the U.S. average (\$55,390) and lower-wage industries at least 35 percent below the U.S. average.

One factor we see boosting growth in the middle-wage industries is the government sector’s return to growth in Oakland County. Government employment started increasing in the county in 2016, and we expect its growth to continue at a modest pace over the forecast period.

In terms of job counts, the higher- and middle-wage industries account for over three-quarters of the net new jobs created in the county from 2018 to 2021.

Employment by Detailed Industry Category

The projected job movements in total shown for 2018–21 in figure 9 are distributed among twenty-eight major industry divisions in table 5, and into 204 finer industry divi-

From yearend 2018 to yearend 2021, the county is forecast to create an additional 32,100 jobs, cumulating to 168,200 job additions from the bottom of the downturn through 2021, more than replenishing the jobs lost during the first decade of the 2000s.

In our forecast, Oakland County achieves a new employment peak in the summer of 2021.

On a percentage basis, we forecast job growth to increase between 4.1–4.4 percent across all wage categories from 2018–21. In terms of job counts, more than three-quarters of the net new jobs are created in higher- and middle-wage industries.

FINAL REPORT

sions in appendix A. The detail for the employment forecast presented in table 5 includes, for each industry, the level of employment in 2018 (including three quarters of preliminary data); the forecast change for 2019, 2020, and 2021; and the cumulative change over the three-year period 2018–21. The table also includes the average annual wage for each industry category in 2017 (as does appendix A).³

The government sector turned the corner to job growth in 2016 after ten consecutive years of job losses, and growth continued in 2017 and 2018. We believe the rebound in government employment is here to stay. We expect job gains to average around 1.1 percent per year over the forecast period, for a total of 1,516 job additions from 2018 to 2021. The path of those gains is uneven over the forecast period because temporary workers hired to help conduct the 2020 Census boost the job count for that year. Nonetheless, the growth that we foresee in the government sector through 2021 does not keep pace with growth in the private sector.

Private-sector employment grew 3.1 percent per year in the first four years of the economic recovery, from 2009 to 2013. The pace of growth then slowed to 2.2 percent per year between 2013 and 2016. In 2017, the number of private-sector jobs in the county only grew by 1.0 percent, partly because of statistical revisions that reassigned some professional and technical services jobs to locations outside the county.

In 2018, job growth picked up to 1.3 percent. We are forecasting that jobs in the private sector will expand at a rate of 1.4 percent in each of the next three years, cumulating to 30,055 total jobs; accounting for 95 percent of all job gains in the county.

The construction industry accounts for 97 percent of the jobs in the aggregate industry category of natural resources, mining, and construction. The category adds 2,124 jobs over the next three years, as residential construction continues to pick up. Specialty trades contractors account for 1,544 total job additions, and residential building contractors account for another 281 job gains.

Job growth in the manufacturing sector had been slowing prior to 2016, from 5,756 job additions in 2011 to just 655 in 2015. The sector rebounded nicely with 2,185 new jobs in 2016 and 2,386 new jobs in 2017, but 2018 saw a return to slower growth with only 523 job additions. We expect job gains in manufacturing to continue, but at a modest pace of 688 in 2018, 428 in 2020, and 259 in 2021.

Transportation equipment (motor vehicle) manufacturing led growth in the early stages of the recovery, with a total of 5,328 job additions in 2011 and 2012 combined. Growth slowed to an average of only 263 job additions per year from 2013 to 2016. The industry unexpectedly added 1,450 jobs in 2017, but job gains slipped to only 69 in 2018. Over the next three years we expect transportation equipment manufacturing to add a total of 569 jobs, due in large part to the expansion of production activity at General Motors' Lake Orion assembly plant.

The government sector turned the corner to job growth in 2016 after ten consecutive years of job losses, and growth continued in 2017 and 2018. We are forecasting these gains to continue, at an average pace of 1.1 percent per year from 2018–2021.

The construction industry continues to benefit from a pickup in residential construction, adding 2,124 jobs over the next three years.

Growth in the manufacturing sector slowed to just 523 job additions in 2018. We expect similar growth over the forecast period for a total of 1,435 new jobs.

Motor vehicle manufacturing contributed only 69 new jobs in 2018. We see job growth totaling 569 jobs over the forecast period in this sector, due in large part to the expansion of production activity at General Motors' Lake Orion assembly plant.

³The historical employment data are from the Bureau of Labor Statistics Quarterly Census of Employment and Wages. The average annual wage includes both full- and part-time workers, weighted equally. Consequently, the average wages for industries that employ a disproportionately large number of part-time workers, such as retail trade and leisure and hospitality, are much lower than they would be if the wages were calculated only for full-time workers.

OAKLAND COUNTY ECONOMIC OUTLOOK 2019–2021

Table 5. Forecast of Jobs in Oakland County by Major Industry Division, 2018–21*

	Estimate 2018	Forecast Employment Change				Average Annual Wage 2017
		2018–2019	2019–2020	2020–2021	2018–2021	
TOTAL JOBS (Number of persons)	737,602	10,347	10,941	10,282	31,570	61,536
(Annual percentage change)	(1.3)	(1.4)	(1.5)	(1.4)	(1.4)	N.A.
TOTAL GOVERNMENT	45,417	459	940	117	1,516	53,785
TOTAL PRIVATE	692,184	9,888	10,001	10,165	30,055	62,047
GOODS-PRODUCING	94,383	1,421	1,141	936	3,499	79,414
Natural resources, mining, construction	27,061	734	713	677	2,124	71,196
Manufacturing	67,322	688	428	259	1,375	82,674
Fabricated metal products	10,357	35	-102	-178	-245	61,646
Machinery	11,565	58	98	74	230	83,196
Transportation equipment (motor vehicles)	21,829	272	172	125	569	105,481
Other manufacturing	23,571	323	261	237	821	70,842
PRIVATE SERVICE-PROVIDING	597,801	8,467	8,860	9,229	26,556	59,302
Trade, transportation and utilities	130,449	940	914	1,024	2,878	54,477
Wholesale trade	37,369	303	424	445	1,172	96,191
Retail trade	79,289	262	202	280	744	34,838
Transportation, warehousing and utilities	13,792	375	289	299	963	57,402
Information	14,946	178	68	78	324	80,946
Financial activities	53,751	857	843	855	2,555	83,436
Finance and insurance	37,262	498	481	490	1,468	97,254
Real estate and rental and leasing	16,490	359	363	365	1,087	52,835
Professional and business services	187,339	2,470	2,772	2,726	7,969	76,995
Professional, scientific, and technical	103,944	2,537	2,247	2,197	6,980	91,429
Management of companies and enterprises	18,364	226	194	-33	387	124,769
Administrative support and waste management	65,031	-293	331	562	601	43,089
Private education and health services	116,531	2,444	2,494	2,702	7,641	50,170
Private education services	11,118	226	115	127	467	44,851
Health care and social assistance	105,412	2,219	2,379	2,575	7,173	50,761
Leisure and hospitality	70,898	1,602	1,549	1,576	4,727	21,682
Other services	22,498	0	218	268	487	35,591
Unclassified	1,390	-25	0	0	-25	50,427

*Some subtotals do not add to totals due to rounding of annual average computations.

Employment growth in all other manufacturing industries averaged 3.4 percent per year from 2012 to 2017, compared with 2.5 percent per year in transportation equipment. Job growth in the non-auto manufacturing industries slowed to 1.0 percent in 2018. We expect job growth to continue to slow over the next three years, to 0.9 percent in 2019, 0.6 percent in 2020, and 0.3 percent in 2021, for a total addition of 805 jobs.

Machinery and chemicals account for over one-half of these job gains over the forecast period, adding 230 and 218 jobs, respectively. The fabricated metals industry is forecast to lose 245 jobs over the next three years.

Employment growth in non-auto manufacturing industries slowed to 1.0 percent in 2018. We expect growth to slow further to 0.9 percent in 2019, 0.6 percent in 2020, and 0.3 percent in 2021, for a total addition of 805 jobs.

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Employment in wholesale trade⁴ is forecast to grow 1.0 percent per year over the next three years, cumulating to 1,314 job additions. Motor vehicle and parts merchant wholesalers account for over half of those job gains (623).

Retail trade is a much larger sector than wholesale trade, but generally pays lower wages. We are bearish on the growth prospects for retail in light of the many job cuts and store closings that have been announced recently both nationally and in Michigan. Online competition, technological advances, and the growth of big-box retailers that are less labor-intensive than smaller stores all weigh on employment growth in retail trade. We see growth averaging just 0.3 percent per year over the forecast period, for a total of 744 new jobs. We would not be surprised if growth in this sector turns out even weaker than we currently expect.

Transportation and warehousing grow at a relatively strong average rate of 2.4 percent per year from 2018 to 2021, producing a total of 921 new jobs. Many of these new jobs are effectively replacing jobs in brick and mortar retail stores as on-line shopping continues to expand.

The information sector adds a total of 324 jobs over the next three years, a modest pace of 0.7 percent per year. Newspaper and book publishers lose 206 jobs between 2018 and 2021, reflecting a long-term decline that by 2018 had claimed sixty percent of the industry's jobs since its peak in 2003.

The finance and insurance industry was slow to recover in Oakland County after the Great Recession, losing 771 jobs from 2010 to 2014. Employment in the industry then grew at a robust pace of 1,164 jobs (3.4 percent) per year between 2014 and 2017. Growth slowed sharply in 2018 to only 300 jobs (0.8 percent). We expect growth to pick up a bit to an average pace of 489 jobs per year over the next three years, for a total of 1,468 jobs. We are forecasting that depository credit intermediation establishments, such as commercial banks, will show flat employment over the next three years as rising mortgage interest rates take a toll. Insurance carriers, agencies, and other activity related to insurance are expected to fare a bit better, adding 669 jobs over the next three years.

The real estate and rental and leasing industry grows by a total of 1,087 jobs over the next three years, for an average growth rate of 2.2 percent per year, as the residential real estate market continues to improve. Most real estate agents are self-employed, and thus are not included in the payroll employment statistics presented here.

From 2009 to 2018, employment in the professional and business services super-sector grew by 51,041 jobs, an average rate of 3.6 percent per year. This super-sector accounted for 40 percent of all job gains in the county between 2009 and 2018, almost twice its share of total employment in 2009 (22 percent). This aggregate category contains three divisions: professional, scientific, and technical services; management of companies and enterprises; and administrative support and waste management. Many of the jobs associated with the knowledge economy are in this sector, which in Oakland County is closely identified with the motor vehicle industry. Over the next three years we expect this super-sector to add 7,969 jobs.

Wholesale trade sees job growth of 1.0 percent per year over the next three years, led by motor vehicle and parts merchant wholesalers.

We are bearish on the growth prospects for retail trade employment. Online competition, technological advances, and the growth of big-box retailers all weigh on employment growth, which we see averaging just 0.3 percent per year over the forecast period.

Transportation and warehousing grow at a relatively strong average rate of 2.4 percent per year from 2018 to 2021. Many of these new jobs are effectively replacing jobs in brick and mortar retail stores as on-line shopping continues to expand.

The information sector adds a total of 324 jobs over the next three years, a modest pace of 0.7 percent per year.

The finance and insurance industry is expected to add 1,468 jobs over the next three years.

The real estate and rental and leasing industry grows at an average rate of 2.2 percent per year over the next three years, as the residential real estate market continues to improve.

Employment in the professional and business services super-sector grew at a sizzling rate of 3.6 percent per year from 2009 to 2018. Many of the jobs associated with the knowledge economy are in this sector, and in Oakland it is closely identified with the motor vehicle industry. Over the next three years we expect this super-sector to add 7,969 jobs.

⁴“Wholesalers sell merchandise to other businesses and normally operate from a warehouse or office. These warehouses and offices are characterized by having little or no display of merchandise. In addition, neither the design nor the location of the premises is intended to solicit walk-in traffic.” U.S. Census Bureau NAICS industry definition.

<https://www.census.gov/naics/>

OAKLAND COUNTY ECONOMIC OUTLOOK 2019–2021

The professional, scientific, and technical services division accounts for 88 percent of that job growth: 6,980 jobs from 2018 to 2021, or 2.2 percent per year. Engineering services add 1,860 jobs in those years, while testing laboratories contribute another 2,073 jobs, computer systems design and related services grows by 590 jobs, and specialized design services add 544 jobs.

Management of companies is another core part of the white-collar auto industry in Oakland County. This division grows by a relatively modest 387 jobs from 2018 to 2021.

Administrative support and waste management services, which includes temporary help services, grew very rapidly in the first few years of the recovery, adding jobs at an average rate of 6.7 percent per year between 2009 and 2013. Since 2013, however, employment in this sector has declined by 103 jobs as local employers decided that they needed to hire workers on a permanent basis rather than as temporary employees. We are forecasting very modest employment growth of 0.3 percent per year in this sector over the next three years, for a total job gain of 601.

Employment growth in private education services has been moderate since 2009, averaging 1.0 percent per year through 2017. In 2018, employment declined by 247 jobs. We foresee it rebounding to growth of 1.4 percent per year from 2018 to 2021, or 467 total new jobs.

Health care and social assistance adds 7,173 jobs over the next three years, an average growth rate of 2.2 percent per year. That pace is faster than the sector's average annual growth rate of 1.5 percent since 2009. The aging of the baby boomers will increase demand for health care workers. We forecast hospitals to add 2,800 jobs, ambulatory health care services to add 1,271 jobs, and social assistance to add 1,701.

The leisure and hospitality services industry was on a tear from 2011 to 2017, growing at an average rate of 4.0 percent per year. Growth came nearly to a stop in 2018 when this industry added only 252 jobs, a growth rate of 0.4 percent. We expect the good times to return, but at a more moderate pace, with average growth of 2.2 percent per year from 2018 to 2021. That growth path yields a total of 4,727 new jobs by 2021.

The “other services” sector covers a wide variety of industries: repair services (including auto repair), personal services (such as hair styling and laundry services), membership organizations, and private household workers. We expect that this sector will expand modestly over the forecast period, adding a total of 487 jobs.

Unemployment

The healthy jobs forecast for Oakland County leads unemployment to continue its decline through 2021 as shown in figure 11. The local unemployment rate falls from 3.3 percent in 2018 to 2.7 percent in 2019 and 2.6 percent in 2020 and 2021. The 2.6 percent unemployment rate in 2020 and 2021 would tie Oakland's lowest rate on record, achieved in the year 2000.

The county's labor force inched up by a tenth of a percentage point in 2018 after averaging growth of 2.4 percent per year in 2016 and 2017. We expect labor force growth to rebound after 2018's weak showing to a rate of 2.2 percent in 2019, after which it will slow to a more sustainable average annual rate of 1.1 percent in 2020 and 2021.

There are two major forces affecting the growth of Oakland County's labor force. On the one hand, the strong labor market is encouraging previously discouraged workers to seek out work. On the other hand, demographic factors, such as retirements among the

After losing 247 jobs in 2018, we forecast the private education services sector to rebound with 467 total jobs from 2018–2021.

Health care and social assistance adds 7,173 jobs over the next three years, led by hospitals, ambulatory health care services, and social assistance.

After blazing growth from 2011–17, the leisure and hospitality services industry came nearly to a stop in 2018. We expect a return to moderate growth from 2018–2021, with average growth of 2.2 percent yielding a total of 4,727 new jobs.

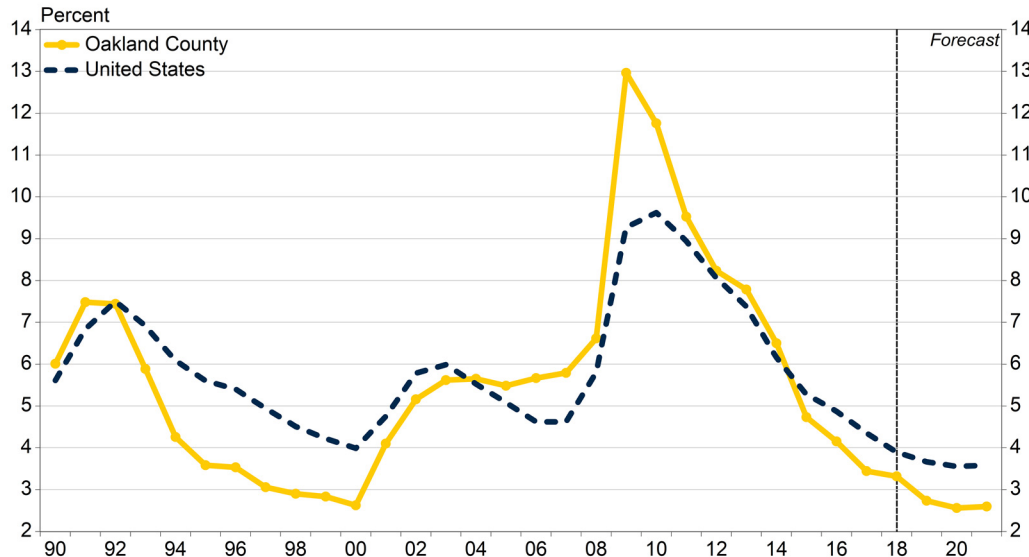
The healthy job growth in Oakland County is accompanied by an unemployment rate that continues to decline, reaching 2.6 percent in 2020 and 2021, tying the lowest rate on record for the county.

After a flat 2018, the county's labor force grows by 2.2 percent in 2019, followed by 1.1 percent growth in 2020 and 2021.

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baby boomers, put downward pressure on the labor force participation rate. We see those two forces roughly offsetting each other over the next few years, leading to middling growth of the labor force.

Figure 11. Unemployment Rates for Oakland County and for the United States, 1990–2021



Oakland’s unemployment rate of 3.3 percent was six-tenths of a percentage point lower than the U.S. rate of 3.9 percent in 2018. We expect that gap to widen to a full percentage point each year from 2019 to 2021, as the unemployment rate nears historical lows in both Oakland and the United States.

Real Wage

The average real wage, adjusted for inflation to be expressed in 2017 dollars, in Oakland County for the years 1990–2021 is shown in figure 12.⁵ We display the average real wage across all industries as well as for three broad industry categories: (1) traditional blue-collar industries such as manufacturing, construction, mining, and transportation; (2) service-providing industries that tend to employ workers with higher educational attainment, such as government, health services, professional services and corporate headquarters, wholesale trade, financial activities, and information; and (3) lower-educational-attainment service-providing industries such as retail trade, leisure and hospitality, business support services such as temporary help, and repair and personal services.

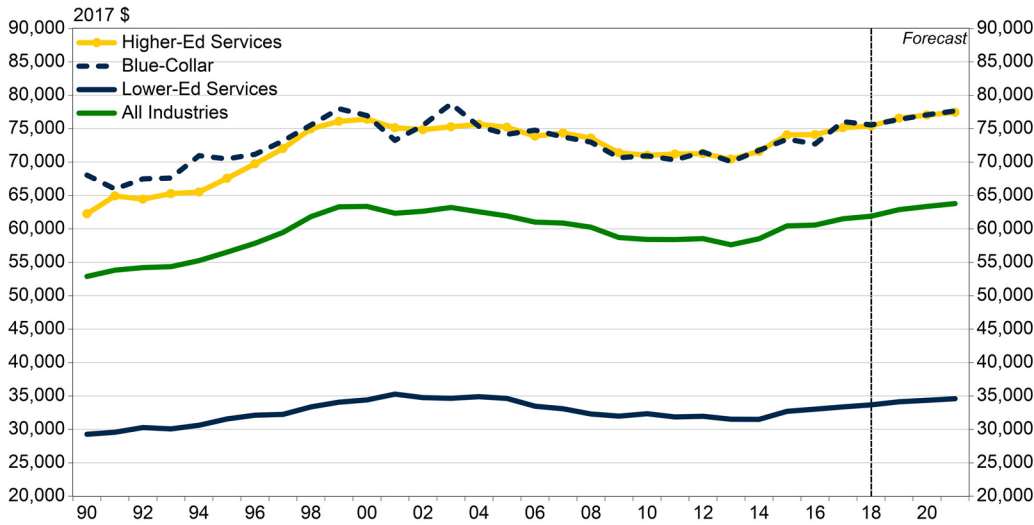
The average inflation-adjusted wage rose in all major industry sectors from 1990 to 2000. The overall average real wage increased by 1.8 percent per year, from \$52,888 in 1990 to \$63,369 in 2000.

Average real wages then entered a long period, from 2000 to 2013, in which they trended downwards, hitting a low point of \$57,622 in 2013. That level was 9.1 percent lower than in 2000.

Oakland’s unemployment rate was six-tenths of a percentage point lower than the U.S. rate in 2018. We expect that gap to widen to a full percentage point for each year in the forecast period.

⁵The wage series are averages per worker, and do not include variations in hours worked, a measure that is not available to us in the detail we would require. This is likely less of a consideration over the longer term.

Figure 12. Average Real Wage in Oakland County by Selected Industry Group, 1990–2021



From 2013 to 2017, real wages increased by an average of 1.7 percent per year, buoyed by low consumer price inflation, bringing average real wages to \$61,536 in 2017. Somewhat higher price inflation of 2.4 percent in 2018 converted a nominal wage increase of 3.0 percent into a real wage gain of only 0.6 percent.

Real wage growth rebounds to 1.6 percent in 2019 with a slowdown in inflation, before settling in at about a 0.7 percent annual growth rate in 2020 and 2021 as inflation picks up.

Over the next three years, we are forecasting that real wages will increase by a total of 2.8 percent in blue-collar and lower-education services industries, and by 2.7 percent in higher-education services industries.

Despite this growth, in 2021, real wages in the blue-collar industries will remain 1.4 percent below their 2003 peak levels, and wages in lower-education services industries will remain 1.9 percent below their 2001 peak levels. On the other hand, real wages in higher-education services industries will climb 1.3 percent above their previous peak levels achieved in 2000.

CONCLUSION

The Oakland County economy continues on its unrelenting roll deep into the current recovery period. From 2014–16 the county added an average of 14,300 jobs per year, before decelerating to a gain of 6,913 jobs in 2017, a slowdown we attribute largely to data revisions. Job growth then picked up to 9,228 in 2018. Job growth in the county has continued recently even with slight declines in Detroit Three vehicle sales in each of the past three years.

The county’s average job growth pace of 2.4 percent per year from 2010 to 2018 outdistanced both the nation and the state over the same period. We are forecasting that the county will gain 32,000 jobs between 2018 and 2021, a pace of 1.4 percent per year, again faster than both the nation and state. Job growth in Oakland County is skewed toward the better-compensated end of the wage scale over the forecast period, consistent

From 2013 to 2017, real wages increased by an average of 1.7 percent per year, buoyed by low consumer price inflation.

Somewhat higher price inflation of 2.4 percent in 2018 converted a nominal wage increase of 3.0 percent into a real wage gain of only 0.6 percent.

Real wage growth rebounds to 1.6 percent in 2019 with a slowdown in inflation, before settling in at about a 0.7 percent annual growth rate in 2020 and 2021 as inflation picks up.

The county’s average job growth pace of 2.4 percent per year from 2010 to 2018 outdistanced both the nation and the state over the same period.

We are forecasting a total of 32,000 job additions from 2018 to 2021.

FINAL REPORT

with the trend in the current recovery period to date. The higher- and middle-wage industries make over 75 percent of the new jobs in the county. Job gains are widespread across all major industries, but with the largest additions occurring in the knowledge-based professional, scientific, and technical services industry; health services; and leisure and hospitality.

Oakland County's unemployment rate averaged 3.3 percent in 2018, the lowest annual reading since 2000, and 0.6 percentage point below the average U.S. rate of 3.9 percent for the year. In concert with the sustained employment gains in our forecast, we see continued declines in Oakland's unemployment rate over the next three years, falling to 2.7 percent in 2019 and 2.6 percent in 2020 and 2021, a percentage point below our projected U.S. rate of 3.6 percent. We see the labor force continuing to grow in the forecast period, albeit at a slower and more sustainable pace than recent years, prompted by a tight labor market that encourages previously discouraged workers to seek out jobs.

The average real wage is forecast to increase by 1.6 percent in 2019 and by 0.7 percent in 2020 and 2021. Real wage growth of one percent or more per year has been the exception rather than the rule over the past 50 years. Local price inflation is expected to remain below 2 percent over the next three years.

The primary risks to the accuracy of the forecast emanating outside of Oakland County include uncertainty over: (1) oil prices and geopolitical events; (2) U.S. fiscal policy; (3) U.S. monetary policy; and (4) U.S. trade policy, including the possible eruption of an international trade war. Locally, the risks include: (1) growing shortages of labor with the tightening labor market and aging population—the job growth we anticipate is only possible if it is accompanied by growth in the labor force; and (2) the technological evolution of the auto industry, in which Oakland is a leading player, escalating more than we anticipate.

Beyond our three-year forecast horizon, the prospects for the county economy remain bright, largely because of its strong economic fundamentals. Oakland has a relatively low cost of living compared with other elite local economies nationwide, as well as a highly educated populace. It has an enviable position as a center of automotive engineering, research, and design. And its strengths reside in enterprises that are becoming increasingly associated with the New Economy of the twenty-first century.

Another Oakland asset has been county leadership and its forward-looking policy initiatives. The county's Emerging Sectors, Automation Alley, Medical Main Street, and Tech248 programs, along with a promotion of skill enhancement for occupations that mesh with the evolving knowledge- and information-based economy, are several examples of innovative policies that are validated by our data.

At the beginning of this report, we identified some historic milestones for the Oakland County economy that are currently within its grasp, and we posed the question as to whether the county can reach or surpass some of these milestones over the next few years. Our view is that the county can, and will, establish new standards over our three-year forecast horizon. We see the Oakland economy establishing a new mark for its longest expansion on record, resulting in a span of at least twelve years. We expect the county to achieve a new all-time employment peak in the summer of 2021. We also anticipate that the annual unemployment rate for Oakland in 2020 and 2021 will equal the lowest rate on record for the county. All of this is forecast to take place in an environment of very moderate inflation and growing real wages, with job growth tilted toward the better-compensated end of the wage scale. It really doesn't get much better than that for one of the nation's elite regional economies.

We see continued declines in Oakland's unemployment rate, falling from 3.3 percent in 2018 to 2.6 percent in 2020 and 2021, a percentage point below our projected U.S. rate.

The average real wage is forecast to increase by 1.6 percent in 2019 and by 0.7 percent in 2020 and 2021

Local price inflation is forecast to remain below 2 percent over the next three years.

The prospects for the county economy remain bright, largely because of its strong economic fundamentals and the county leadership's forward-looking and innovative policy initiatives that are validated by our data.

We see the Oakland County economy reaching several historic milestones:

(1) Establishing a new mark for its longest expansion on record.

(2) Achieving a new all-time employment peak in the summer of 2021.

(3) The annual unemployment rate in 2020 and 2021 reaches the lowest rate on record for the county.

It really doesn't get much better than that for one of the nation's elite regional economies.

OAKLAND COUNTY ECONOMIC OUTLOOK 2019–2021

Appendix A: Forecast of Jobs in Oakland County by Detailed Industry Division, 2019–21

	Estimate	Forecast			Average Annual Wage
	2018	2019	2020	2021	2017
TOTAL PAYROLL JOBS (Number of persons)	737,602	747,948	758,890	769,172	61,536
(Annual percentage change)	1.3	1.4	1.5	1.4	N.A.
TOTAL GOVERNMENT	45,417	45,876	46,816	46,933	53,785
Federal government	4,720	4,704	5,069	4,702	69,535
Postal service	3,782	3,791	3,820	3,850	63,934
Federal government NEC	938	913	1,250	852	92,504
State and local government	40,697	41,172	41,747	42,231	51,918
Local libraries	564	578	590	605	21,713
Local education and health services	22,360	22,559	22,912	23,177	52,581
Elementary and secondary schools	20,590	20,782	21,137	21,403	53,450
Other education and health services	1,769	1,776	1,775	1,773	43,096
Local public administration	13,102	13,333	13,495	13,650	50,226
State and other local government	4,671	4,703	4,750	4,800	57,064
TOTAL PRIVATE	692,184	702,073	712,074	722,239	62,047
GOODS-PRODUCING	94,383	95,804	96,945	97,881	79,414
Natural resources and mining	843	849	863	875	33,381
Agriculture, forestry, fishing, and hunting	677	685	699	710	26,092
Mining, quarrying, and oil and gas extraction	165	163	164	165	61,259
Construction	26,218	26,946	27,644	28,310	72,427
Construction of buildings	6,700	6,777	6,927	7,067	76,334
Residential	3,163	3,259	3,352	3,444	65,590
Nonresidential	3,537	3,519	3,574	3,622	85,634
Heavy and civil engineering construction	2,267	2,332	2,398	2,448	84,064
Specialty trade contractors	17,251	17,836	18,319	18,795	69,382
Building foundation and exterior	2,559	2,638	2,685	2,760	61,958
Building equipment	9,598	9,905	10,160	10,401	74,924
Building finishing	2,930	3,037	3,148	3,250	58,656
Other specialty trade contractors	2,164	2,257	2,326	2,385	66,823
Manufacturing	67,322	68,010	68,438	68,697	82,674
Food	1,775	1,824	1,896	1,979	39,663
Textile products	166	162	161	160	29,408
Wood products	161	158	156	155	69,831
Paper products	442	458	451	443	67,742
Printing and related support activities	2,015	2,003	1,984	1,962	65,034
Chemicals	3,744	3,823	3,894	3,961	95,690
Plastics and rubber products	3,926	3,948	3,934	3,904	53,366
Nonmetallic mineral products	1,086	1,056	1,040	1,023	68,824
Primary metals	1,380	1,371	1,363	1,354	143,509
Fabricated metals	10,357	10,392	10,290	10,112	61,646
Forging and stamping	1,185	1,214	1,226	1,231	60,162
Architectural and structural metals	665	634	626	569	54,967
Machine shops and threaded products	3,085	3,028	2,954	2,873	65,718
Coating, engraving, and heat treating metals	2,056	2,105	2,057	2,001	49,968
Other fabricated metals	1,837	1,871	1,903	1,931	67,241
Fabricated metals NEC	1,530	1,540	1,525	1,507	65,228
Machinery	11,565	11,623	11,720	11,795	83,196
Industrial machinery	714	676	669	661	87,305
Commercial and service industry machinery	858	918	969	1,021	52,919
Metalworking machinery	6,085	6,062	6,094	6,115	81,146
Turbine and power transmission equipment	488	490	484	478	82,464
Other general purpose machinery	3,146	3,209	3,240	3,259	95,701
Machinery NEC	274	268	265	261	60,709

FINAL REPORT

Appendix A continued: Forecast of Jobs in Oakland County by Detailed Industry Division, 2019–21

	Estimate	Forecast		Average Annual Wage	
	2018	2019	2020	2021	
Computer and electronic products	3,077	3,093	3,128	3,157	75,786
Electrical equipment, appliances, components	1,069	1,047	1,042	1,034	78,820
Transportation equipment	21,829	22,101	22,273	22,398	105,481
Motor vehicle bodies and trailers	1,048	1,068	1,087	1,112	117,229
Aerospace products and parts	1,087	1,112	1,111	1,109	82,354
Transportation equipment NEC	19,693	19,921	20,074	20,177	106,269
Furniture and related products	547	558	570	579	56,964
Miscellaneous manufacturing	3,302	3,450	3,575	3,698	58,151
Medical equipment and supplies	575	574	570	565	58,635
Other miscellaneous manufacturing	2,727	2,876	3,005	3,133	58,034
Manufacturing NEC	882	941	962	982	46,338
PRIVATE SERVICE-PROVIDING	597,801	606,268	615,128	624,357	59,302
Trade, transportation, and utilities	130,449	131,390	132,304	133,328	54,477
Wholesale trade	37,369	37,672	38,096	38,540	96,191
Merchant wholesalers, durable goods	26,994	27,264	27,619	27,993	96,673
Motor vehicles and parts	6,868	7,053	7,268	7,491	98,089
Commercial equipment	4,626	4,576	4,549	4,530	114,331
Electric goods	5,133	5,160	5,155	5,148	108,285
Machinery and supply	5,645	5,762	5,914	6,065	89,227
Merchant wholesalers, durable goods NEC	4,722	4,712	4,733	4,759	73,500
Merchant wholesalers, nondurable goods	7,501	7,560	7,639	7,721	82,566
Wholesale electronic markets, agents, brokers	2,874	2,848	2,837	2,827	113,335
Retail trade	79,289	79,551	79,753	80,033	34,838
Motor vehicle and parts dealers	11,622	11,909	12,069	12,221	63,707
Furniture and home furnishings stores	2,617	2,610	2,621	2,632	38,814
Electronics and appliance stores	4,657	4,661	4,645	4,637	53,592
Building material and garden supply dealers	6,643	6,685	6,601	6,513	40,565
Food and beverage stores	13,410	13,370	13,427	13,507	24,315
Health and personal care stores	7,179	7,388	7,508	7,626	36,242
Gasoline stations	2,269	2,270	2,298	2,326	21,163
Clothing and clothing accessories stores	7,360	7,224	7,172	7,151	20,092
Sporting goods, hobby, book, and music stores	2,852	2,804	2,788	2,784	25,985
General merchandise stores	14,572	14,419	14,320	14,256	25,024
Miscellaneous store retailers	4,884	4,976	5,067	5,142	27,375
Nonstore retailers	1,225	1,235	1,236	1,238	63,065
Transportation and warehousing	12,297	12,659	12,934	13,218	49,586
Truck transportation	3,747	3,767	3,833	3,897	59,152
Couriers and messengers	2,287	2,324	2,353	2,380	44,654
Warehousing and storage	1,511	1,582	1,604	1,624	59,576
Transportation and warehousing NEC	4,751	4,986	5,144	5,317	40,813
Utilities	1,495	1,508	1,522	1,536	118,138
Information	14,946	15,124	15,192	15,270	80,946
Publishing (except Internet)	3,843	3,870	3,835	3,786	96,490
Newspaper, book, and directory publishers	1,376	1,300	1,234	1,170	72,940
Software publishers	2,467	2,569	2,601	2,616	110,485
Motion pictures and sound recording	1,918	1,877	1,894	1,907	33,703
Motion picture and video production	447	391	382	374	68,979
Motion picture and video exhibition	1,356	1,370	1,395	1,415	12,117
Motion pictures and sound recording NEC	115	116	118	119	86,050
Broadcasting (except Internet)	1,484	1,491	1,516	1,541	93,091
Telecommunications	4,776	4,840	4,788	4,752	80,326
Data processing, hosting, and related services	1,747	1,835	1,890	1,942	84,912
Information NEC	1,179	1,212	1,268	1,342	94,827

OAKLAND COUNTY ECONOMIC OUTLOOK 2019–2021

Appendix A continued: Forecast of Jobs in Oakland County by Detailed Industry Division, 2019–21

	Estimate	Forecast			Average Annual Wage
	2018	2019	2020	2021	2017
Financial activities	53,751	54,608	55,451	56,306	83,436
Finance and insurance	37,262	37,759	38,240	38,730	97,254
Credit intermediation and related activities	16,504	16,783	16,945	17,091	88,413
Depository credit intermediation	8,989	8,986	8,985	8,988	87,049
Commercial banking	6,751	6,755	6,758	6,765	95,160
Depository credit intermediation NEC	2,238	2,231	2,227	2,223	62,495
Nondepository credit intermediation	6,098	6,316	6,440	6,544	93,809
Real estate credit intermediation	3,177	3,341	3,442	3,528	79,324
Nondepository credit intermediation NEC	2,921	2,975	2,999	3,017	107,500
Activities related to credit intermediation	1,418	1,481	1,520	1,559	74,801
Securities, commodity contracts, investments	4,519	4,575	4,648	4,724	162,428
Insurance carriers and related activities	16,071	16,233	16,475	16,740	88,130
Insurance carriers	7,978	8,014	8,096	8,194	94,359
Direct property and casualty insurers	2,391	2,405	2,417	2,429	92,924
Insurance carriers NEC	5,588	5,608	5,679	5,764	94,960
Insurance agencies, brokerages, and related	8,093	8,219	8,379	8,546	81,482
Insurance agencies and brokerages	5,596	5,709	5,846	5,989	82,176
Other insurance-related activities	2,497	2,510	2,533	2,557	79,874
Finance and insurance NEC	167	169	172	175	121,542
Real estate and rental and leasing	16,490	16,849	17,212	17,577	52,835
Real estate	12,907	13,191	13,484	13,784	53,428
Lessors of real estate	5,331	5,346	5,394	5,443	51,083
Offices of real estate agents and brokers	1,401	1,451	1,507	1,550	53,274
Activities related to real estate	6,175	6,394	6,583	6,792	55,621
Rental and leasing services	3,423	3,496	3,562	3,622	47,668
Lessors of nonfinancial intangible assets	159	161	166	170	91,507
Professional and business services	187,339	189,809	192,582	195,307	76,995
Professional and technical services	103,944	106,481	108,728	110,925	91,429
Legal services	12,431	12,570	12,749	12,928	92,002
Accounting and bookkeeping services	6,418	6,570	6,662	6,737	69,765
Architectural and engineering services	39,433	40,674	42,071	43,485	102,085
Architectural services	1,398	1,405	1,440	1,474	86,642
Engineering services	21,281	21,906	22,537	23,142	93,987
Testing laboratories	16,221	16,814	17,531	18,294	115,003
Engineering services NEC	533	549	563	575	74,810
Specialized design services	2,673	2,813	3,006	3,217	115,446
Computer systems design and related services	22,099	22,481	22,616	22,688	89,025
Management and technical consulting services	8,738	8,898	8,986	9,077	85,253
Scientific research and development services	1,260	1,253	1,283	1,310	138,465
Advertising, PR, and related services	4,507	4,522	4,512	4,495	72,592
Other professional and technical services	6,387	6,701	6,843	6,988	60,017
Management of companies and enterprises	18,364	18,590	18,784	18,751	124,769
Administrative support and waste management	65,031	64,739	65,070	65,632	43,089
Administrative and support services	63,635	63,345	63,663	64,211	42,613
Office administrative services	4,045	4,006	4,035	4,086	55,403
Employment services	28,499	28,326	28,107	28,034	48,348
Business support services	8,473	8,650	8,804	8,955	42,977
Investigation and security services	5,385	5,334	5,394	5,454	33,155
Services to buildings and dwellings	13,176	12,927	12,994	13,126	28,621
Other support services	2,851	3,011	3,229	3,448	46,893
Administrative and support services NEC	1,206	1,091	1,100	1,108	46,159
Waste management and remediation services	1,396	1,394	1,408	1,421	64,681

FINAL REPORT

Appendix A continued: Forecast of Jobs in Oakland County by Detailed Industry Division, 2019–21

	Estimate	Forecast			Average Annual Wage
	2018	2019	2020	2021	2017
Private education and health services	116,531	118,975	121,469	124,171	50,170
Education services	11,118	11,344	11,459	11,586	44,851
Elementary and secondary schools	3,860	3,919	3,936	3,956	42,348
Colleges and universities	1,848	1,810	1,784	1,762	39,921
Education services NEC	5,411	5,615	5,739	5,868	48,565
Health care and social assistance	105,412	107,631	110,010	112,586	50,761
Ambulatory health care	41,024	41,369	41,795	42,295	58,126
Offices of physicians	14,445	14,532	14,619	14,718	81,873
Offices of dentists	6,524	6,628	6,706	6,807	52,094
Offices of other health practitioners	5,836	5,901	6,041	6,215	45,546
Outpatient care centers	2,714	2,751	2,806	2,868	54,622
Medical and diagnostic laboratories	1,391	1,389	1,396	1,405	46,946
Home health care services	8,336	8,304	8,303	8,306	37,383
Other ambulatory health care services	1,778	1,864	1,922	1,976	40,229
Hospitals	35,028	35,872	36,846	37,827	61,230
Nursing and residential care facilities	16,746	17,143	17,629	18,148	29,207
Nursing care facilities	5,378	5,534	5,650	5,793	36,477
Residential mental health facilities	2,435	2,424	2,430	2,442	28,447
Community care facilities for the elderly	6,503	6,548	6,728	6,911	25,893
Other residential care facilities	2,430	2,638	2,821	3,003	23,672
Social assistance	12,614	13,247	13,741	14,315	24,069
Individual and family services	6,683	7,120	7,513	7,986	24,029
Child day care services	4,077	4,121	4,170	4,217	21,527
Social assistance NEC	1,855	2,005	2,058	2,113	32,162
Leisure and hospitality	70,898	72,500	74,050	75,626	21,682
Arts, entertainment, and recreation	10,556	10,708	10,967	11,196	36,372
Golf courses and country clubs	2,485	2,513	2,549	2,586	27,250
Fitness and recreational sports centers	4,519	4,635	4,784	4,934	18,241
Arts, entertainment, and recreation NEC	3,552	3,560	3,634	3,675	61,085
Accommodation and food services	60,342	61,792	63,083	64,430	19,012
Accommodation	5,332	5,772	6,082	6,439	24,759
Food services and drinking places	55,010	56,020	57,001	57,991	18,495
Restaurants and other eating places	48,626	49,547	50,426	51,342	18,232
Full-service restaurants	26,233	26,633	27,113	27,604	20,542
Limited-service restaurants	19,050	19,528	19,850	20,174	15,055
Cafeterias, grill buffets, and buffets	599	596	588	587	19,530
Snack and nonalcoholic beverage bars	2,745	2,789	2,874	2,977	17,671
Special food services	4,019	4,081	4,166	4,218	21,445
Drinking places, alcoholic beverages	2,365	2,392	2,410	2,431	18,342
Other services	22,498	22,498	22,716	22,984	35,591
Repair and maintenance	6,006	6,132	6,189	6,253	46,126
Automotive repair and maintenance	4,024	4,075	4,097	4,127	44,150
Repair and maintenance NEC	1,982	2,057	2,093	2,126	50,463
Personal and laundry services	9,803	9,750	9,849	9,979	25,919
Personal care services	5,276	5,374	5,498	5,627	23,803
Personal and laundry services NEC	4,527	4,376	4,352	4,352	28,267
Membership associations and organizations	5,466	5,384	5,443	5,513	44,347
Private households	1,223	1,231	1,234	1,239	26,532
Private unclassified service-providing	1,390	1,365	1,365	1,365	50,427
<u>Addendum</u>					
Unemployment rate	3.3	2.7	2.6	2.6	N.A.

OAKLAND COUNTY ECONOMIC OUTLOOK 2019–2021

Appendix B: Indicator Values for Comparison of Oakland County with 37 U.S. Counties of Similar Size

County	State	Population 2017	Associate's Degree or More	Child Poverty	Median Family Income**	High-Income Persons Aged 65 or Older	Managerial, Professional
Fairfax	VA	1,148,433	67.6%	9.8%	112,170	61.7%	57.0%
Montgomery	MD	1,058,810	64.6%	9.4%	101,275	57.3%	54.9%
Collin	TX	969,603	61.6%	6.0%	102,867	41.3%	53.1%
Nassau	NY	1,369,514	57.8%	7.3%	99,356	48.7%	45.7%
DuPage	IL	930,128	60.8%	7.5%	99,849	42.1%	46.5%
Oakland	MI	1,250,836	59.2%	9.1%	99,584	39.3%	50.2%
Bergen	NJ	948,406	59.1%	6.2%	92,446	44.3%	48.4%
Westchester	NY	980,244	57.7%	10.1%	95,272	46.2%	48.3%
Wake	NC	1,072,203	62.3%	12.0%	98,671	38.7%	51.1%
Hennepin	MN	1,252,024	61.8%	14.5%	98,221	37.7%	49.6%
Fairfield	CT	949,921	56.1%	11.3%	93,734	45.2%	45.7%
Travis	TX	1,226,698	56.2%	15.0%	93,936	42.1%	49.5%
Contra Costa	CA	1,147,439	51.2%	11.9%	87,554	48.1%	43.2%
Fulton	GA	1,041,423	59.9%	20.1%	92,941	35.3%	50.0%
Suffolk	NY	1,492,953	48.8%	8.3%	87,978	43.3%	39.9%
St. Louis	MO	996,726	54.5%	13.5%	87,071	34.3%	45.4%
Mecklenburg	NC	1,076,837	56.2%	16.5%	84,928	30.8%	44.9%
Allegheny	PA	1,223,048	57.2%	15.1%	83,758	26.9%	46.4%
Salt Lake	UT	1,135,649	45.4%	10.8%	83,197	33.0%	40.7%
Prince George's	MD	912,756	39.4%	11.0%	81,076	44.8%	39.7%
Honolulu	HI	988,650	48.1%	10.2%	76,927	41.2%	35.4%
Gwinnett	GA	920,260	47.4%	15.9%	78,846	30.8%	38.5%
Franklin	OH	1,291,981	48.1%	22.5%	78,506	29.7%	42.7%
Erie	NY	925,528	50.1%	22.1%	77,803	27.6%	38.7%
Palm Beach	FL	1,471,150	45.1%	16.5%	68,879	35.9%	36.6%
Sacramento	CA	1,530,615	40.5%	18.1%	73,711	32.8%	38.8%
Pinellas	FL	970,637	42.9%	15.8%	69,046	27.2%	37.4%
Hillsborough	FL	1,408,566	44.7%	21.8%	67,464	27.5%	39.6%
Pima	AZ	1,022,769	42.5%	22.4%	67,275	32.2%	37.5%
Cuyahoga	OH	1,248,514	43.0%	26.8%	72,131	25.3%	40.5%
Orange	FL	1,348,975	49.0%	22.4%	63,341	25.1%	36.9%
Duval	FL	937,934	40.9%	23.4%	68,884	27.1%	37.0%
Shelby	TN	936,961	39.6%	30.2%	67,302	28.5%	35.4%
Marion	IN	950,082	41.2%	24.7%	65,197	24.0%	36.2%
Philadelphia	PA	1,580,863	36.8%	31.9%	52,529	19.3%	40.2%
Milwaukee	WI	952,085	39.9%	25.8%	65,371	22.5%	36.1%
Fresno	CA	989,255	29.1%	28.5%	60,309	27.0%	29.3%
Bronx	NY	1,471,160	28.5%	39.6%	36,908	20.0%	24.6%
<i>State of Michigan</i>			41.0%	19.7%	74,667	25.7%	36.7%
<i>United States</i>			42.4%	18.4%	73,891	29.5%	38.2%

*All counties in the United States with a population between 900,000 and 1,600,000 in 2017.

**Adjusted for cost of living.

Source: American Community Survey 2017. Census Bureau Population Estimates, April 2018. Median Family Income adjusted using BEA price parity indices for 2016 and extended to counties by relative gross rent.