

# THE ECONOMIC OUTLOOK FOR OAKLAND COUNTY IN 2015–2017

## FINAL REPORT

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A condensed version of this report was presented to the 30th annual Oakland County Economic Outlook Luncheon at the Troy Marriott Hotel on April 30, 2015. Sponsored by ten Oakland County organizations, the luncheon was hosted by the Oakland County Planning & Economic Development Services Division; Chase; and Oakland Community College. The full report is also available on the Web (updated each year) at [www.AdvantageOakland.com](http://www.AdvantageOakland.com) or [www.irlee.umich.edu/clmr](http://www.irlee.umich.edu/clmr).

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## INTRODUCTION

Many times over the past thirty years when we prepared our reports on the county, the message has been that the Oakland economy is on a roll. We are delivering the same message this year. In the current recovery since 2009, Oakland County's job growth at 12.8 percent has significantly outstripped the 6.0 percent rate recorded for the nation as well as the 8.0 percent rate posted for Michigan. From 2011 to 2013, Oakland created jobs at a scorching pace that trumped any other three-year period since the mid-1990s. The county is now into its sixth year of economic recovery, and it continues to be more broad-based across sectors, which bodes well for its sustainability. Moreover, Oakland's unemployment rate has been falling rapidly—and much more rapidly than the nation's.

As always, though, there are a few challenges that we are monitoring. First, job growth in 2014 moderated to the smallest annual increase during the current recovery, following the blistering pace of the prior three years. Second, and similar to the nation, inflation-adjusted wage growth in the county has been sluggish in recent times. And third, the unemployment rate needs to come down further, because more residents need to be vested in the recovery.

Each of these challenges poses questions that are addressed in this report. We assess whether the slowdown in 2014 portends a continuation of a slower recovery into 2015 and beyond, or not—and if not, by how much will the pace pick up again, and which sectors will take the lead? The economic recovery will not be complete until we see some growth in real wages, and we consider when, or if, wage growth will gain any traction during the next three years. We then posit what our economic scenario through 2017 implies for further improvements in the unemployment rate.

As has become our custom, we also assess how the county fares among counties of similar size around the nation according to indicators of future prosperity. In addition, we 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 Institute for Research on Labor, Employment, and the Economy. The regional model uses as inputs national economic indicators from the University's Research Seminar in Quantitative Economics in the Department of Economics. The Oakland model was constructed with the support of the Oakland County Planning & Economic Development Services Division.

Before considering our perspective on how the Oakland County economy will evolve through 2017, we first take a look at 2014, 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 2014: A REPORT CARD

A year ago (May 1, 2014), we presented our twenty-ninth economic outlook for Oakland County at the annual Economic Outlook Luncheon. Last year's forecast of employment, unemployment, and inflation for 2014 can now be compared with estimates of the outcome for that year, to see how accurate our forecast was.

In last year's presentation, we forecast that the Oakland County economy would continue its solid recovery in 2014, but with the rate of growth moderating from a red-hot, but unsustainable, pace recorded over the prior three years. That is precisely what trans-

*In the current recovery since 2009, Oakland County's job growth at 12.8 percent has significantly outstripped the 6.0 percent rate recorded for the nation as well as the 8.0 percent rate posted for Michigan.*

*The county is now into its sixth year of economic recovery, and it continues to be more broad-based across sectors, which bodes well for its sustainability. Moreover, Oakland's unemployment rate has been falling rapidly—and much more rapidly than the nation's.*

*There are a few challenges that we are monitoring: job growth in 2014 moderated to the smallest annual increase during the current recovery; inflation-adjusted wage growth has been sluggish; and the unemployment rate needs to come down further.*

*Last year, we forecast that the Oakland County economy would continue its solid recovery in 2014, but with the rate of growth moderating. That is precisely what transpired.*

pired. The recovery did continue, and private-sector job growth did slow, with a smaller contribution of 12,172 jobs in 2014 compared with 18,892 in 2013. Moreover, we came within an eyelash of nailing the magnitude of the job gain for 2014. Our forecast for 2014 was too low by 962 jobs in a private-sector work force of 646,000, a miss of only 0.1 percent, as reported in table 1.

**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	2001	+1.9
1987	+0.7	2002	+2.5
1988	-1.8	2003	+1.6
1989	-1.9	2004	+2.6
1990	+2.2	2005	+1.4
1991	+3.9	2006	+3.3
1992	-2.0	2007	0
1993	+0.5	2008	+2.2
1994	-1.3	2009	+5.5
1995	+0.2	2010	-1.6
1996	-0.5	2011	-2.3
1997	+0.6	2012	-2.2
1998	+1.3	2013	-0.8
1999	-1.2	2014	-0.1
2000	+0.6		

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

Average absolute forecast error 1986–2014: 1.7%
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	Forecast 2014	Actual 2014
Unemployment rate	6.4%	7.2%
Consumer inflation rate	1.1%	1.1%

Forecast date: April 2014

Although it’s not part of the historical track record, we were also very close in forecasting government employment losses in 2014. With government added to the private sector, we were 895 jobs light in our forecast of the 11,812 total jobs that were created in Oakland in 2014, also a miss of 0.1 percent.

We forecast job gains in all of the major industry divisions in 2014 save two, and we were correct in that prognostication with only two exceptions. The private education and health services sector lost jobs in 2014 contrary to our expectations, while information added jobs rather than suffering the small loss we anticipated.

The largest shortfall in our forecast was in health care. After adding an average of 2,500 jobs per year in 2011 and 2012, job gains in health care dwindled to less than 100 per year in the past two years, extending the slump in growth beyond what we expected. The recent sluggishness in hiring may reflect some caution as providers adjust to changes in funding and in demand for health care under the Affordable Care Act.

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Job gains most exceeded our expectations in manufacturing. Other than the auto industry, where our forecast was virtually spot-on, many of the other industries in manufacturing continued a solid pace of job growth in 2014 despite some slowdown, but not registering the more rapid deceleration that we foresaw.

The observed and forecast numbers for the unemployment and local consumer price inflation rates in 2014 are reported at the bottom of table 1. Our forecast of the unemployment rate was too low, with the recorded rate of 7.2 percent for 2014 coming in 0.8 percentage points above the 6.4 percent rate we projected a year ago. Over half of the miss can be explained by a subsequent revision of the historical data for 2013. We hit the bull’s eye on our forecast of the local inflation rate, with the outcome for 2014 of 1.1 percent matching our projection made a year ago. This is the second year in a row that we have found the center of the target on our inflation outlook.

This review gives us a glimpse of an economy continuing a solid recovery in 2014. We need to take a more detailed look at the current state of the economy, however, before we anticipate developments beyond 2014.

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## THE CURRENT STATE OF OAKLAND COUNTY’S ECONOMY

### Employment Path of the Oakland County Economy

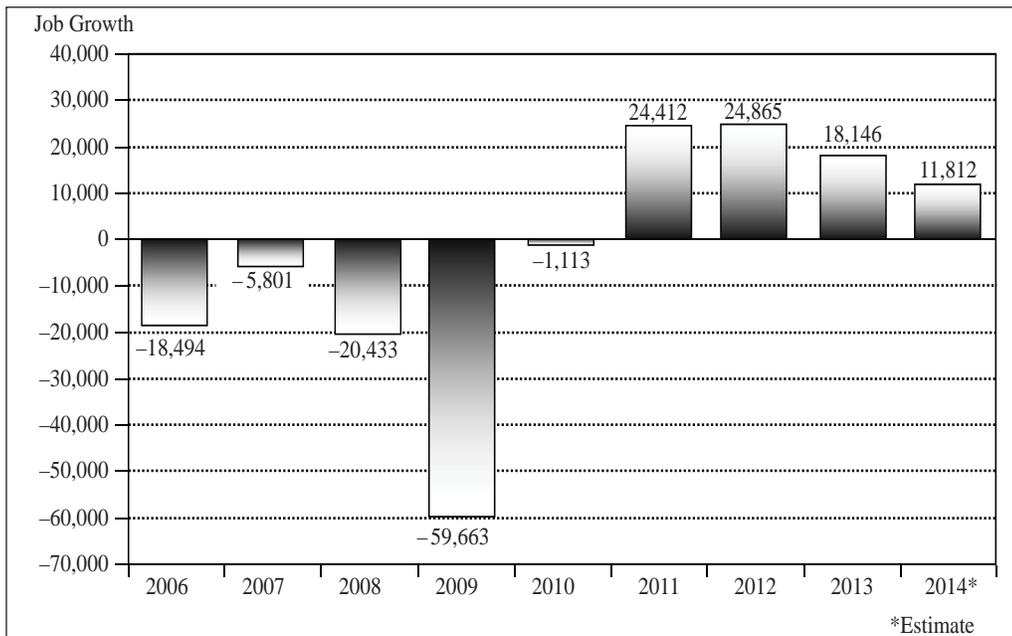
What we have learned from the report card for 2014, in addition to our favorable grade for forecast performance, is that the economy continued to grow in 2014, albeit at a slower pace than the previous three years of vigorous growth. As is verified in figure 1, Oakland’s recovery, measured by net annual job growth, continues to put the severe decline that preceded it in the rear-view mirror.

Oakland County suffered job losses from 2006 to 2009, hitting bottom in the unforgettable year of 2009 with a loss of 59,663 jobs. This low point was a culmination of the national Great Recession along with bankruptcy proceedings for both General Motors and Chrysler.

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**Figure 1. Job Growth in Oakland County, 2006–14**



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*Oakland returned to positive growth for 2011 to 2013, the county economy's best performance over three years since the mid-1990s.*

*The continuing recovery in Oakland is consistent with sustained expansion of the U.S. economy, a recovering local housing sector, and increasing Detroit Three vehicle sales—all backed by the county's strong economic fundamentals and forward-looking policy initiatives.*

*The top job producers in the recovery to date are professional and business services; trade, transportation, and utilities; and manufacturing. Government and financial activities have lost jobs over the recovery period.*

*The county's unemployment rate shrank every year from 2009 to 2014 with the recovery in the local labor market.*

By 2011, Oakland turned the corner to return to positive growth for a calendar year, creating 67,423 jobs in the three years from 2011 to 2013—a torrid pace of 3.5 percent, or 22,500 jobs per year. This was the county economy's best performance over three years since the mid-1990s.

The recovery continued in 2014, but with total job growth moderating to 11,812 additions from its sizzling pace of the prior three years. The continuing recovery in Oakland is consistent with sustained expansion of the U.S. economy, a recovering local housing sector, and increasing Detroit Three vehicle sales. All of this is backed by the county's strong economic fundamentals and forward-looking policy initiatives.

Among the major industry divisions in aggregate, the top job producers in the recovery to date have been professional and business services; trade, transportation, and utilities; and manufacturing. The two major industry divisions that have lost jobs over the recovery period are government and financial activities.

The question is whether 2014 is simply a pause in an otherwise more rapid pace of job growth moving forward, or instead is a foreshadowing of a general slowdown in the economy into 2015 and beyond. This question is addressed in the local forecast section of the report. Next up is a consideration of the unemployed in the current recovery.

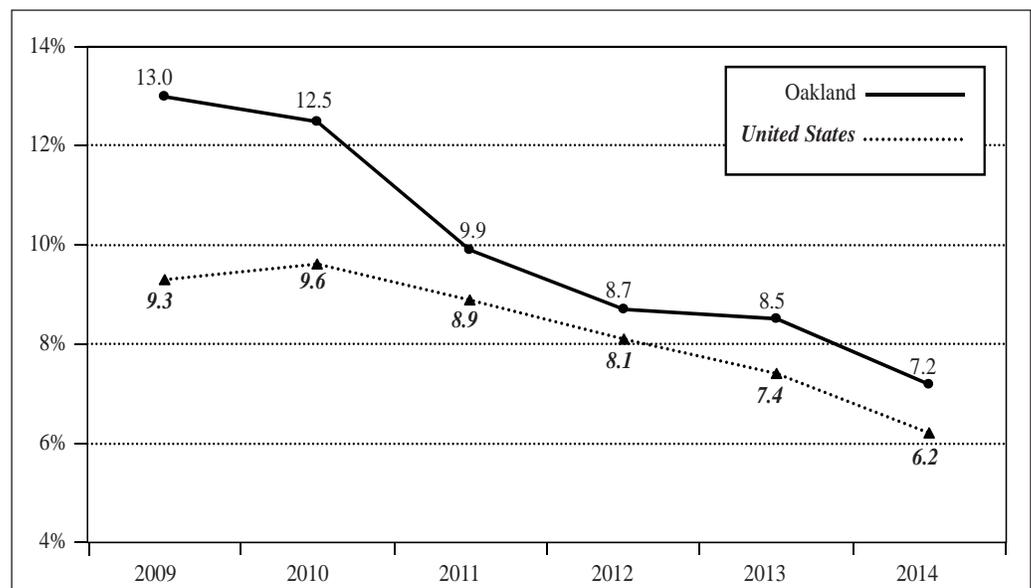
### Unemployment Path of the Oakland County Economy

The performance of Oakland's economy can also be evaluated with unemployment as the measure. The path of the county's yearly unemployment rate from 2009 to 2014 is shown in figure 2. The rate for the United States is included for comparison.

The unemployment rate for Oakland County peaked in 2009 at 13.0 percent. From then through 2014, the jobless rate shrank every year with the recovery in the local labor market, first slightly in 2010, to 12.5 percent, and then more sharply thereafter, moving down to 7.2 percent by 2014.

The decline in the rates observed for 2010 and 2011 was due in part to discouraged workers leaving the labor force, which officially removes them from the count of the unemployed. By 2012, movements in the local labor force turned positive, as a greater number of residents sought out expanding job opportunities.

**Figure 2. Unemployment Rates for Oakland County and the United States, 2009–14**



Oakland’s jobless rate has been higher than the U.S. rate so far during the recovery period, but the gap has narrowed from 3.7 percentage points in the nation’s favor in 2009 to a much smaller one percentage point in 2014. The last time the county unemployment rate was lower than the U.S. rate was for a twelve-year stretch from 1992 to 2003, inclusive.

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

As Oakland County continues to emerge from the structural and cyclical declines of recent years, it’s informative to gauge how the county’s economic foundation is positioned, as this can foreshadow future economic success. We ranked Oakland and thirty-five other counties of similar size in the United States on a series of measures that we judge to be indicators of future economic prosperity. The rankings are shown in table 2; the data underlying the rankings are provided in appendix B. The counties of comparable size to Oakland had populations between 900,000 and 1.6 million in 2014; Oakland’s population was 1.238 million.

Many of these counties are among the most prosperous in the nation—and among the small group of U.S. counties, including Oakland, that have the AAA bond rating with multiple rating agencies.

The measures used in this analysis are: (1) share of the population aged 25 to 64 (prime working-age population) with at least an associate’s degree in 2013; (2) share of the population aged 17 and under who lived within families whose income was below the poverty level in 2013; (3) median family income adjusted for the cost of living<sup>1</sup> in 2013; (4) share of persons aged 65 and older with income at least five times the poverty line in 2013; and (5) share of employed county residents working in professional and managerial occupations in 2013.

A lower number for the rank indicates a better position for the measure among the thirty-six counties; i.e., a rank of 1 is best and 36 is worst. Oakland County ranks between 5 and 16 across the five measures. Oakland is especially noteworthy for its median family income adjusted for the cost of living, where it ranks 5th,<sup>2</sup> and for its share of residents employed in professional and managerial occupations, where it ranks 7th.

The thirty-six counties are also ordered by a summation of all of the rankings. This is not meant to be a rigorous measure of overall ranking, but it is at least suggestive of relative standing. Oakland ranks in the top ten overall among the thirty-six counties on this basis, an impressive standing considering that a number of these counties house some of the healthiest local economies in the nation.

Whether we assess Oakland County with respect to how it is positioned in key economic fundamentals across all regions of the United States, or more restrictively here among many of the elite local economies, it is hard not to see the county thriving as time goes on.

<sup>1</sup>Our cost of living calculation is based upon the Bureau of Economic Analysis, Regional Price Parity Indices for Metropolitan Areas, extended to 2013 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 2013 American Community Survey.

<sup>2</sup>Without adjusting for the cost of living, the median family income in Oakland County would rank 11th.

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**Table 2. Oakland County Compared with 35 U.S. Counties of Similar Size\***  
(Ranking based on selected indicators of prosperity)

County	State	Population 2014	Associate's Degree or More	Child Poverty	Median Family Income**	High-Income		Sum of Rankings	Rank of Sum
						Persons Aged 65 or Older	Managerial, Professional		
Fairfax	VA	1,137,538	1	1	1	1	1	5	1
Montgomery	MD	1,030,447	2	3	2	2	2	11	2
Middlesex	MA	1,570,315	3	6	3	12	3	27	3
Nassau	NY	1,358,627	10	2	4	3	13	32	4
Bergen	NJ	933,572	6	7	12	6	6	37	5
Westchester	NY	972,634	7	11	8	4	8	38	6
Wake	NC	998,691	4	14	7	11	4	40	7
DuPage	IL	932,708	8	5	6	14	11	44	8
<b>Oakland</b>	<b>MI</b>	<b>1,237,868</b>	<b>12</b>	<b>10</b>	<b>5</b>	<b>16</b>	<b>7</b>	<b>50</b>	<b>9</b>
Fairfield	CT	945,438	11	8	9	7	15	50	9
Hennepin	MN	1,212,064	5	15	10	19	9	58	11
Contra Costa	CA	1,111,339	17	12	13	8	17	67	12
Fulton	GA	996,319	9	25	14	15	5	68	13
Travis	TX	1,151,145	15	20	17	9	10	71	14
Suffolk	NY	1,502,968	19	4	15	10	24	72	15
St. Louis	MO	1,001,876	14	17	11	18	12	72	15
Allegheny	PA	1,231,255	13	18	16	27	14	88	17
Honolulu	HI	991,788	20	9	21	13	27	90	18
Prince George's	MD	904,430	32	13	19	5	26	95	19
Mecklenburg	NC	1,012,539	16	19	22	22	18	97	20
Salt Lake	UT	1,091,742	27	16	18	20	20	101	21
Franklin	OH	1,231,393	21	26	23	24	16	110	22
Erie	NY	922,835	18	22	20	29	21	110	22
Palm Beach	FL	1,397,710	25	21	27	17	34	124	24
Hillsborough	FL	1,316,298	23	24	25	31	22	125	25
Cuyahoga	OH	1,259,828	24	30	24	30	19	127	26
Sacramento	CA	1,482,026	29	27	28	23	23	130	27
Pinellas	FL	938,098	26	23	29	28	25	131	28
Shelby	TN	938,803	30	33	26	21	29	139	29
Orange	CA	1,253,001	22	28	32	32	31	145	30
Pima	AZ	1,004,516	31	29	31	25	30	146	31
Milwaukee	WI	956,406	28	32	30	33	33	156	32
Marion	IN	934,243	33	31	33	34	32	163	33
Fresno	CA	965,974	35	36	34	26	35	166	34
Philadelphia	PA	1,560,297	34	34	35	36	28	167	35
Bronx	NY	1,438,159	36	35	36	35	36	178	36

\*All counties in the United States with a population between 900,000 and 1,600,000 in 2014.

\*\*Adjusted for the cost of living.

Source: Compiled by Donald Grimes and George Fulton, University of Michigan, using data from the American Community Survey 2013. Population data are from the Census Bureau population estimates program as of April 2015.

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: 2015–17

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 2015–16 are from a release on March 18, 2015, by Daniil Manaenkov and Matthew G. Hall of the Research Seminar in Quantitative Economics (RSQE) at the University of Michigan, who also provided internally generated extensions of the forecast for 2017. The national outlook is summarized in figures 3–5 by two economic indicators key to the Oakland economy.

The best single measure of the U.S. economy is inflation-adjusted, or real, Gross Domestic Product (GDP): all of the goods, services, and structures produced in the economy. Growth in real GDP averaged 2.4 percent in 2014, as shown in figure 3, and is forecast to ramp up to average 2.9 percent for 2015 and 3.2 percent for 2016, the first annual reading above 3 percent since 2005.

The more rapid growth reflects a pickup in consumer spending and a more solid recovery in residential construction activity, countered somewhat by an increasing drag on growth from net exports. Real GDP growth then tapers off a bit in 2017, to 2.9 percent.

The U.S. economy is projected to add 3.1 million payroll jobs during 2015, slightly more than during 2014, making 2015 the best year for job creation since 1999. Job gains then moderate to 2.6 million during 2016 and 2.2 million during 2017.

The unemployment rate continues to decline, falling from a calendar-year average of 6.2 percent recorded for 2014 to yearly averages of 5.3 percent for 2015, 5.0 percent for 2016, and 4.6 percent for 2017 (see figure 10).

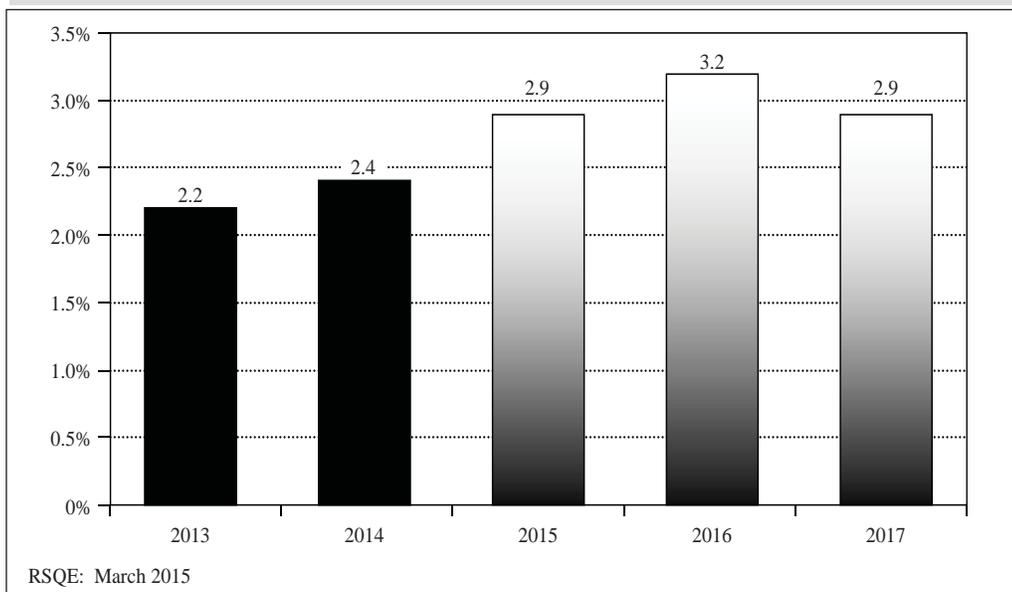
Another important input to the outlook for Oakland is the national vehicle sales forecast. From a longer-term perspective, total sales of U.S. light vehicles—cars, minivans, sport utility vehicles, crossovers, and pickup trucks—were in the range of 16 to 17+ million

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*The unemployment rate continues to decline, falling from a calendar-year average of 6.2 percent recorded for 2014 to 4.6 percent for 2017.*

**Figure 3. Growth in U.S. GDP, 2013–17**



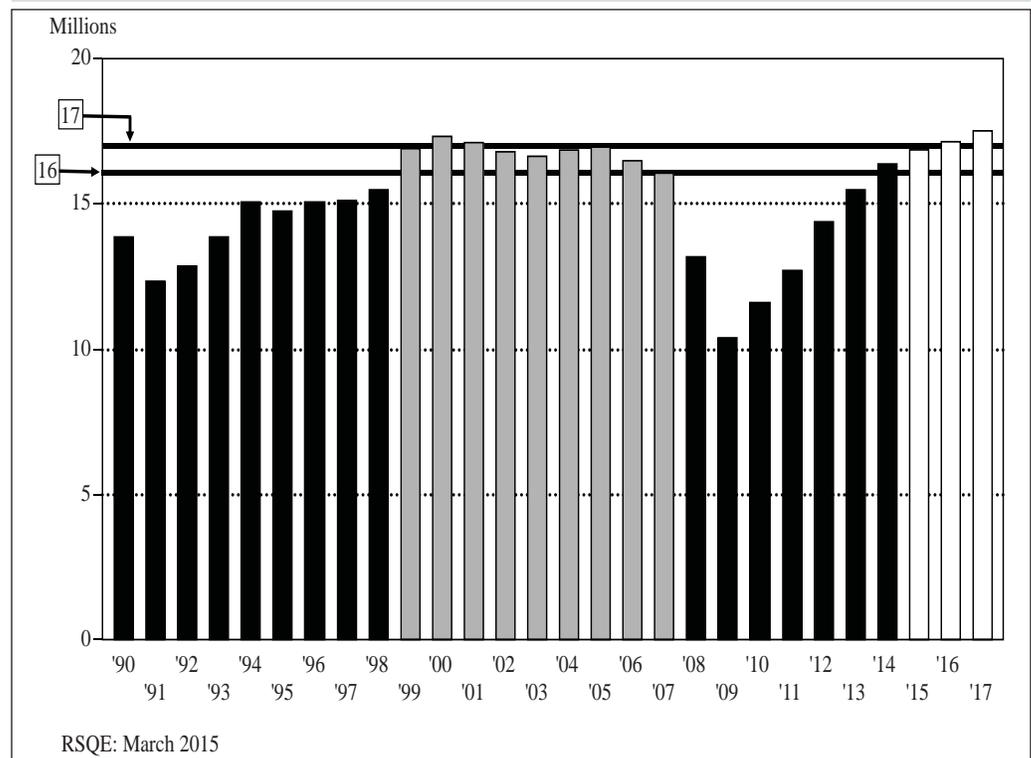
*Total sales of U.S. light vehicles—cars, minivans, sport utility vehicles, crossovers, and pickup trucks—were in the range of 16 to 17+ million units sold annually from 1999 to 2007, then retreated to 10.4 million units by 2009.*

*Sales have subsequently increased each year, checking in at 16.4 million units sold in 2014, the highest annual level in eight years.*

units sold annually from 1999 to 2007, as shown in figure 4. Sales then retreated to 10.4 million units by 2009, and have increased in excess of one million units each year since then until 2013, reaching 15.5 million units in that year.

The industry crossed the 16 million line in 2014, checking in at 16.4 million units sold, the highest annual level in eight years. In the forecast, we continue moving upward from there. Pent-up demand continues to be a significant factor in the climb: the average age of vehicles on the road today is still at record levels, vehicle sales remain historically low relative to the driving-age population, and the potential exists for higher participation of younger drivers in the market as the economy continues to improve.

**Figure 4. U.S. Light Vehicle Sales, 1990–2017**



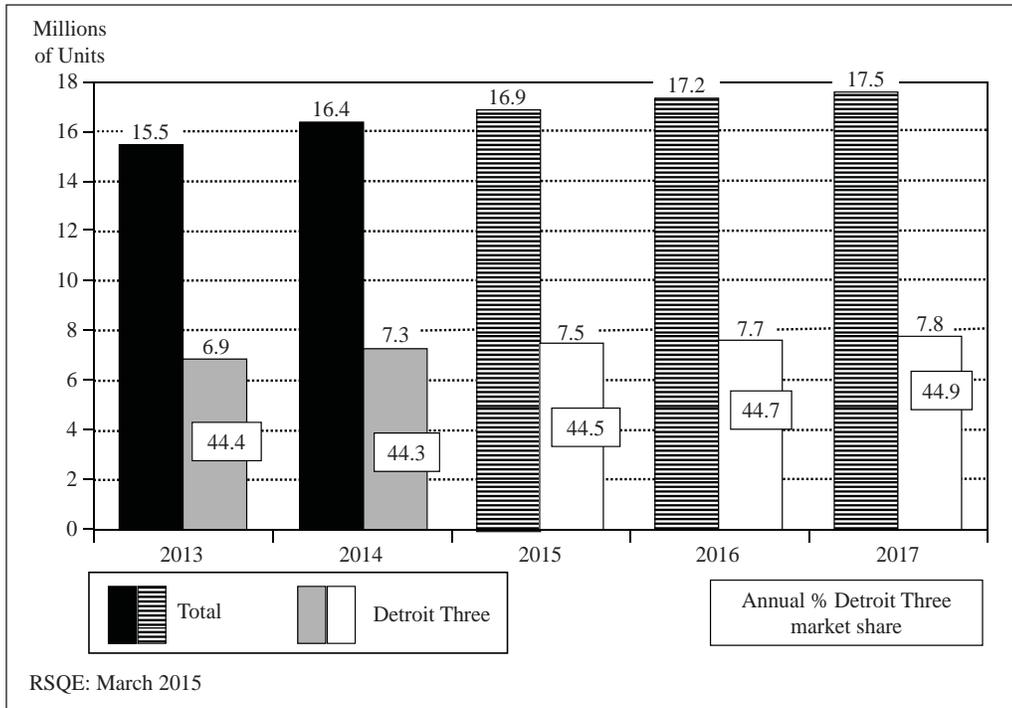
*Total unit sales of U.S. light vehicles are forecast to rise to 16.9 million in 2015, 17.2 million in 2016, and 17.5 million by 2017. The projection for 2017 would set an all-time record for a calendar year.*

*Detroit Three sales are projected to move up progressively from 7.3 million units in 2014 to 7.8 million by 2017, a slower rate of increase compared with recent history.*

From a shorter-term perspective, total unit sales of U.S. light vehicles are forecast to rise to 16.9 million in 2015 from 16.4 million posted in 2014, and to increase further to 17.2 million in 2016 and 17.5 million by 2017, as shown in figure 5. The sales forecast for 2016 would be the highest annual level in sixteen years, and the projection for 2017 would set an all-time record for a calendar year. The continuing increase anticipated for light vehicle sales in 2015–16 rides largely on the back of strong truck sales. In 2016, vehicle sales are projected to be the highest since 2000, another period of cheap gasoline and rising truck popularity.

We see the Detroit Three’s share of the light vehicle market drifting up from 44.3 percent in 2014 to 44.9 percent by 2017. The projections for total sales and the Detroit Three’s share of that market, taken together, yield our outlook for Detroit Three sales, which move up progressively from 7.3 million units in 2014 to 7.8 million by 2017. This path reflects a slower rate of increase over the next three years compared with recent history. Detroit Three sales rose by 900,000 units over the two years from 2012 to 2014, almost twice the cumulative gain of 500,000 units we are forecasting over the next three years combined.

**Figure 5. U.S. Light Vehicle Sales, Total vs. Detroit Three, 2013–17**



We now turn to our view of the prospects for the Oakland County economy through 2017.

### OAKLAND COUNTY OUTLOOK: 2015–17

The economic outlook for Oakland County through 2017 is measured using information on employment, real wages, unemployment, and inflation. First, we evaluate the county’s prospects for job growth in total, putting that in context with recent job market developments.

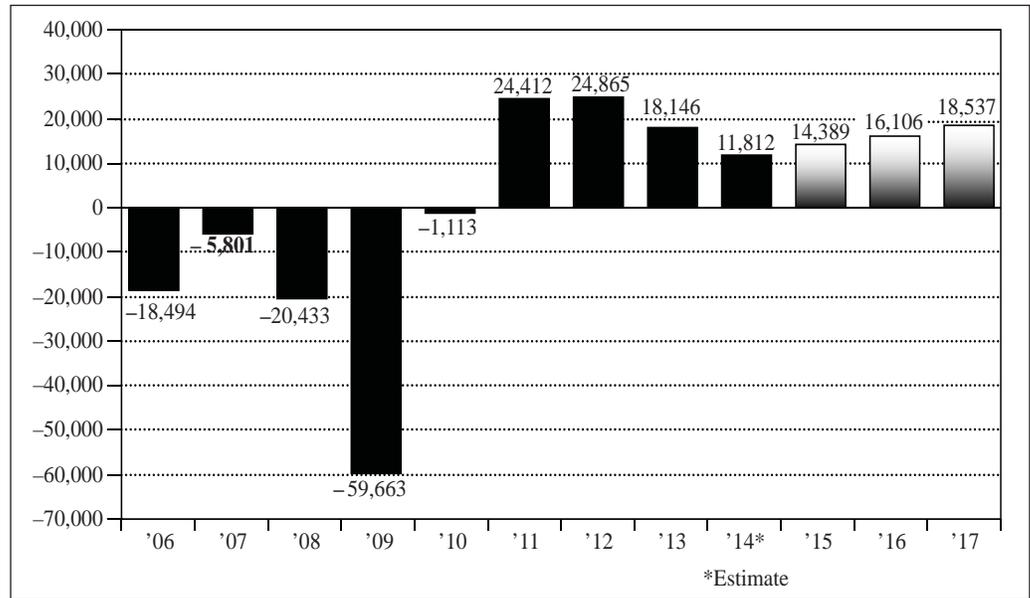
The Oakland County economy is now entering its sixth year of recovery since the recession’s low point at the end of 2009. (The annual data indicate a small loss for 2010, but this is an artifact of calculating job changes based on calendar-year averages, which masks the upturn in employment at the beginning of 2010.) Over the period 2009 to 2014, the county’s job growth (12.8 percent) greatly outpaced both the nation’s (6.0 percent) and the state’s (8.0 percent).

Following the deceleration to 11,812 job additions in 2014, we project the pace of growth to pick up again in 2015, increasing to 14,389 jobs, as shown in figure 6. Job growth continues to pick up the pace over the following two years, with the county adding 16,106 jobs in 2016 and 18,537 in 2017, extending the span of the current recovery to eight years. That growth path generates an increase of 49,032 jobs over the next three calendar years—a brisk pace averaging 2.3 percent per year from 2014 to 2017. Oakland’s recovery continues to be supported by a U.S. economy that expands through 2017 and by increasing Detroit Three vehicle sales, as well as by the county’s strong economic fundamentals.

*The Oakland County economy is now entering its sixth year of recovery since the recession’s low point at the end of 2009. Over the period 2009 to 2014, the county’s job growth greatly outpaced both the nation’s and the state’s.*

*Following a deceleration in job additions in 2014, the pace of growth is projected to pick up again in 2015. Job growth continues to pick up the pace over the following two years, extending the span of the current recovery to eight years.*

**Figure 6. Job Growth in Oakland County, 2006–17**



*From the spring of 2000 to the state’s low point in the third quarter of 2009, the county lost 163,314 jobs. Then the recovery followed: from the summer of 2009 to the end of the published data in the third quarter of 2014, Oakland gained 88,439 jobs.*

*From then to the end of 2017, the county is forecast to create an additional 53,775 jobs, thus replenishing 87 percent of the jobs lost from the spring of 2000 to the summer of 2009, returning the county to the job levels it posted in the second half of 2001, about a year and a half into the nine-year decline.*

*In contrast, the state as a whole is forecast to fall, by the end of 2017, well short of the employment level enjoyed at its peak in the spring of 2000, a job recovery rate of 69 percent compared with Oakland’s 87 percent.*

The current recovery is put in broader historical context by considering how much ground the Oakland economy is making up from 2009 through 2017 relative to what it lost in the preceding decline—a challenging benchmark considering the severity of the downturn.

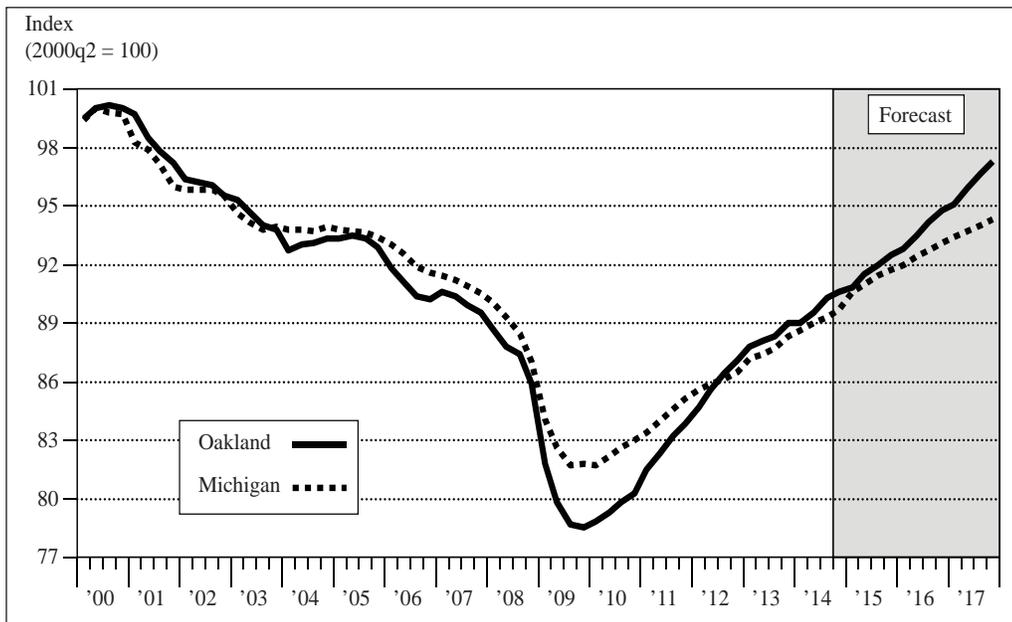
The quarterly path of total jobs from the start of 2000 to the end of 2017, adjusted for seasonal variations, is shown in figure 7. We include the same profile for Michigan, with both the county and state employment paths indexed to equal 100 in the second quarter of 2000, representing Michigan’s previous peak employment level. Using 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.

From the spring of 2000 to the state’s low point in the third quarter of 2009, the county lost 163,314 jobs. Then the recovery followed: from the summer of 2009 to the end of the published data in the third quarter of 2014, Oakland gained 88,439 jobs.

From then to the end of 2017, we are forecasting that the county will create an additional 53,775 jobs, thus cumulating to 142,214 job additions from the bottom of the downturn through 2017 (88,439 + 53,775). That would replenish 87 percent, or about seven in eight, of the jobs lost from the spring of 2000 to the summer of 2009, returning the county to the job levels it posted in the second half of 2001, about a year and a half into the nine-year decline.

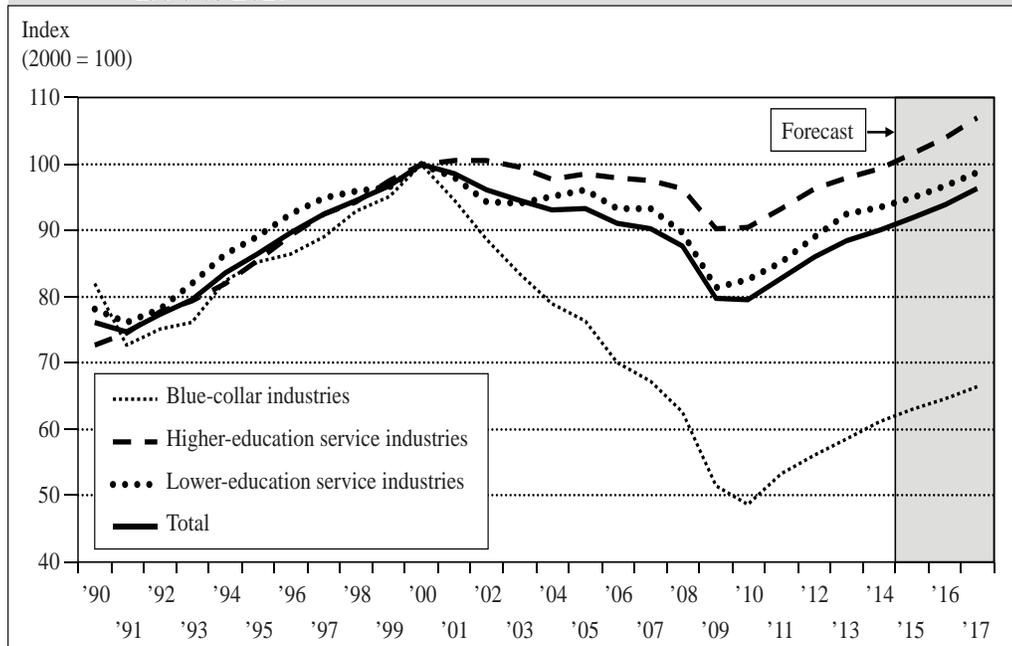
In contrast, the state as a whole is forecast to fall, by the end of 2017, well short of the employment level enjoyed at its peak in the spring of 2000, a job recovery rate of 69 percent compared with Oakland’s 87 percent. The employment decline was more precipitous in Oakland (a drop of 21.3 index points) than for the state (down 18.3 index points) from the spring of 2000 to the summer of 2009. Oakland’s recovery, however, has been more robust through the end of the published data in the third quarter of 2014, with the county gaining 11.6 index points compared with 7.6 index points for the state. The gap between the pace of recovery then continues to widen in the county’s favor through 2017.

**Figure 7. Total Jobs in Oakland County vs. Michigan, Seasonally Adjusted, First Quarter of 2000 to Fourth Quarter of 2017**



The employment data for Oakland County shown in figure 7 are converted to annual averages and extended back to 1990 in figure 8; the values are indexed so that the level of employment in 2000 is set equal to 100. Figure 8 also includes similarly scaled employment index values for three broad industry categories: (1) traditional blue-collar industries such as manufacturing, construction, mining, and transportation; (2) higher-educational-attainment service-providing industries such as government, health services, professional services and corporate headquarters, wholesale trade, financial activities, and information services; and (3) service-providing industries that tend to employ workers with lower educational attainment such as retail trade, leisure and hospitality services, business services such as temporary help, and repair and personal services.

**Figure 8. Employment Growth in Oakland County by Selected Industry Groups, 1990 to 2017**



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*There was a sharp decline in employment in the blue-collar industries between 1990 and 1991, corresponding to the 1990–91 recession. Employment in lower-educational-attainment service industries also declined then, as did employment in total, whereas employment grew in higher-educational-attainment service industries.*

*Between 1991 and 2000, however, employment in total and for all three industry categories increased at about the same rate.*

*Despite the relatively rapid growth in jobs in the blue-collar industries since the end of the most recent recession, the story of employment in Oakland County since 2000 has been the shift in concentration from blue-collar jobs to higher-educational-attainment service industry jobs.*

*The average inflation-adjusted wage in Oakland peaked in 1999 at \$57,597, a 19.8 percent gain from 1990.*

*Over the period 1999 to 2013, the average real wage in Oakland tended to decline, reaching a low of \$54,758 in 2013, 4.9 percent below its peak level in 1999.*

There was a sharp decline in employment in the blue-collar industries between 1990 and 1991, corresponding to the 1990–91 recession. Employment in lower-educational-attainment service industries also declined then, as did employment in total, whereas employment grew in higher-educational-attainment service industries. Between 1991 and 2000, however, employment in total and for all three industry categories increased at about the same rate.

After 2000, job growth among the industry categories diverged sharply. Employment in the blue-collar industries declined by more than half between 2000 and 2010 (from an index value of 100 to 48.6). Employment in the higher-education service industries increased slightly between 2000 and 2002, but then declined slowly between 2002 and 2007. With the onset of the Great Recession, employment in this category fell by 7.4 percent between 2007 and 2010. Employment in the lower-education service industries fell by 17.5 percent from 2000 to 2010, closely patterning job movements in total.

From 2010 to 2014, employment in all three industry categories increased steadily, with slightly faster growth in the blue-collar industries as is typical during the earlier stages of recovery from a severe recession. Over the forecast period from 2014 to 2017, however, the most rapid growth occurs in the higher-education service industries.

By 2017, employment in the blue-collar category will still be slightly below its 2007 level, and well below its 2000 level. In contrast, employment in the higher-education service category was almost at its 2000 level in 2014, and by 2017 it will be 6.9 percent above that level. Employment in the lower-education service category will still be slightly below its 2000 level by 2017.

Despite the relatively rapid growth in jobs in the blue-collar industries since the end of the most recent recession, the story of employment in Oakland County since 2000 has been the shift in concentration from blue-collar jobs to higher-educational-attainment service industry jobs, a trend we see continuing beyond our forecast period.

The average real wage (in 2013 dollars) in Oakland County between 1990 and 2017 is presented in figure 9 for the same industry groups as in the previous analysis of employment. This is the first time we have forecast the average wage in the county, but given the recent focus on this measure, we have included it in this year's study.<sup>3</sup>

The average inflation-adjusted wage in Oakland peaked in 1999 at \$57,597, a 19.8 percent gain from 1990. Wage gains were widespread across almost all industries, with increases over those nine years of 14.7 percent in the blue-collar industries, 22.3 percent in the higher-education service industries, and 16.5 percent in the lower-education service industries.

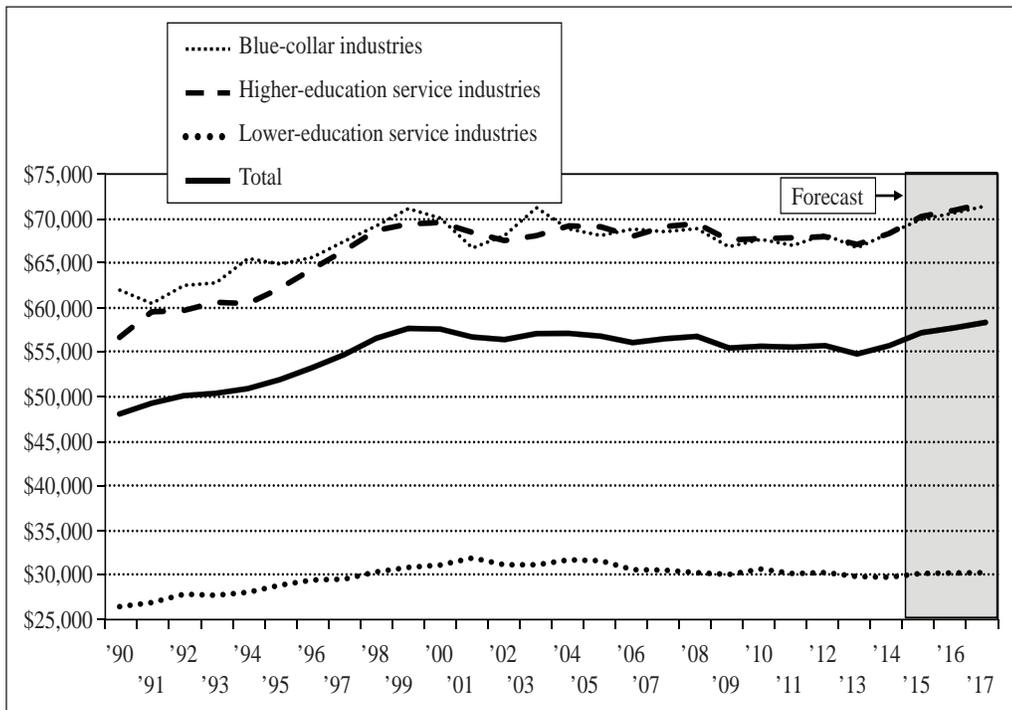
Over the period 1999 to 2013, the average real wage in Oakland tended to decline, reaching a low of \$54,758 in 2013, 4.9 percent below its peak level in 1999. The average wage in the blue-collar industries declined a little more than in the other industry categories, but almost all industries saw a decline.

We estimate that the average real wage grew by 1.7 percent in 2014, the blue-collar industries leading the way with a gain of 2.4 percent. This was largely due to strong wage growth in construction and some of the non-motor-vehicle manufacturing industries, as labor shortages in some of the skilled trades caused firms to increase pay and hours worked. The average real wage also increased at a healthy pace in the higher-education service category, but it fell by 0.2 percent in the lower-education service group.

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<sup>3</sup>The 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 9. Average Real Wage in Oakland County by Selected Industry Groups, 1990 to 2017**



Over the forecast period from 2014 to 2017, we see the average real wage growing by 4.6 percent, reaching \$58,266 (in 2013 dollars), 1.2 percent above 1999. This growth reflects both the “bonus” from a negative rate of inflation in 2015 (see figure 11), and a tightening of the labor market due to a declining unemployment rate (see figure 10) that should put more pressure on wages.<sup>4</sup>

We anticipate that the real wage gains over the next three years will be spread across all major industry groups, with the greatest gains accruing to the higher-education service industries (4.9 percent), and the smallest increases occurring among the lower-education service category (1.7 percent). It is possible that the recently announced wage increases by some of the larger retail chain stores such as Walmart, Marshalls, and T.J. Maxx could generate a more favorable outcome for the lower-education service industries, but competitive market pressures could also limit those gains.

The projected job movements in total shown in figure 6 are distributed among twenty-eight major industry divisions in table 3, and into 235 finer industry divisions in appendix A. The detail for the employment forecast presented in table 3 includes, for each industry, the level of employment in 2014 (including three quarters of preliminary data); the forecast change for 2015, 2016, and 2017; and the cumulative change over the three-year period 2014–17. The table also includes the average annual wage for each industry category in 2013 (as does appendix A).<sup>5</sup>

<sup>4</sup>Current wage growth data have also been biased downward in two ways: (1) baby boomers entering retirement and being replaced by younger workers at lower salaries, and (2) the long-term unemployed accepting lower wages.

<sup>5</sup>The 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.

*Over the forecast period from 2014 to 2017, we see the average real wage growing by 4.6 percent, reaching \$58,266 (in 2013 dollars), 1.2 percent above 1999.*

*This growth reflects both the “bonus” from a negative rate of inflation in 2015, and a tightening of the labor market due to a declining unemployment rate that should put more pressure on wages.*

*We anticipate that the real wage gains over the next three years will be spread across all major industry groups, with the greatest gains accruing to the higher-education service industries, and the smallest increases occurring among the lower-education service category.*

**Table 3. Forecast of Employment in Oakland County by Major Industry Division, 2015–17\***

	Estimate 2014	Forecast Employment Change				Average Annual Wage 2013
		'14-'15	'15-'16	'16-'17	'14-'17	
<b>TOTAL JOBS (Number of persons)</b>	<b>690,377</b>	<b>14,389</b>	<b>16,106</b>	<b>18,537</b>	<b>49,032</b>	<b>\$54,758</b>
(Annual percentage change)	(1.7)	(2.1)	(2.3)	(2.6)		N.A.
TOTAL GOVERNMENT	44,552	-32	20	207	194	51,197
TOTAL PRIVATE	645,825	14,421	16,087	18,330	48,838	55,011
GOODS-PRODUCING	83,710	2,277	2,114	2,229	6,620	68,872
Natural resources, mining, construction	22,189	1,136	960	981	3,078	62,550
Manufacturing	61,520	1,140	1,154	1,248	3,542	71,087
Fabricated metal products	11,461	210	250	253	713	58,296
Machinery	10,859	96	132	145	372	75,729
Transportation equipment (motor vehicles)	19,559	391	457	506	1,353	86,268
Other manufacturing	19,642	444	315	344	1,103	60,382
PRIVATE SERVICE-PROVIDING	562,116	12,144	13,972	16,102	42,218	52,993
Trade, transportation, and utilities	122,584	1,996	2,207	2,636	6,838	48,824
Wholesale trade	35,686	659	774	917	2,350	83,652
Retail trade	76,046	880	975	1,218	3,072	30,723
Transportation, warehousing, and utilities	10,852	457	458	501	1,416	56,564
Information	16,040	351	273	340	965	74,180
Financial activities	48,644	631	872	1,107	2,611	73,979
Finance and insurance	33,430	197	437	583	1,217	86,076
Real estate and rental and leasing	15,214	434	435	525	1,394	45,524
Professional and business services	181,495	5,277	6,286	7,051	18,615	66,709
Professional, scientific, and technical	103,864	4,868	4,612	5,122	14,602	78,536
Management of companies and enterprises	13,928	238	425	430	1,094	113,836
Administrative support and waste management	63,703	171	1,249	1,499	2,919	38,652
Private education and health services	107,935	1,546	2,325	2,811	6,681	46,326
Private education services	10,968	168	221	298	687	40,729
Health care and social assistance	96,967	1,377	2,104	2,513	5,994	46,994
Leisure and hospitality	62,136	2,052	1,752	1,812	5,615	18,759
Other services	21,490	294	257	345	896	31,147
Unclassified	1,793	-3	0	0	-3	46,497

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

The government sector is forecast to lose 32 jobs in 2015 following an estimated loss of 360 in 2014. Employment in the government sector has declined every year since 2005, but it finally turns around to add 20 jobs in 2016 and 207 in 2017, as the sector continues to adapt to its stringent financial challenges. By the end of our forecast period in 2017, the government sector accounts for only 6.1 percent of the jobs in the county, down from a peak of 8.3 percent in 2009 (when private-sector employment was sharply and temporarily reduced in the recession); this is its lowest share since at least 1990, when our data series starts.

Job gains in the private sector are expected to accelerate in 2015, increasing by 14,421 jobs compared with 12,173 in 2014. Job growth continues to accelerate in 2016 and 2017, bringing the total to 48,838 jobs from 2014 to 2017, a solid increase averaging 2.5 percent per year.

The aggregate industry category of natural resources, mining, and construction gains 3,078 jobs over the next three years, all of them in construction; the very small natural resources and mining components lose a handful of jobs. The construction industry benefits from a revival in residential construction after struggling through a long dry spell. All components of the construction industry enjoy relatively strong job growth, with the greatest number of additional jobs (994) being created among building equipment contractors such as plumbing, electrical, and HVAC contractors, as well as residential building contractors (648).

The manufacturing sector gains 1,140 jobs in 2015, 1,154 in 2016, and 1,248 in 2017. While this represents solid job growth for the sector, these gains are down substantially from the rate of growth between 2010 and 2014, when manufacturing was adding an average of 3,127 jobs per year. (The slowing job growth is a natural progression as the business cycle matures.) By 2017, the manufacturing sector accounts for only 8.8 percent of the jobs in the county, down from 16 percent in 1990 and 14 percent in 2000. We expect that its share will continue to slip beyond 2017.

Leading the early stages of the recovery was transportation equipment (motor vehicle) manufacturing, which added 3,037 jobs (21.8 percent) in 2011 and 2,290 (13.5 percent) in 2012. Growth slowed to only 53 jobs in 2013 and 251 in 2014. We see some acceleration in growth over the following three years—391 jobs in 2015, 457 in 2016, and 506 in 2017—an average annual growth rate of 2.3 percent. By 2017, employment in transportation equipment manufacturing will still be 10.1 percent below 2008 levels, and will account for only 2.8 percent of the jobs in the county, down from 6 percent in 2000. While factory jobs in the auto industry are no longer leading the recovery, the industry's white-collar component will continue to expand at much-above-average growth rates.

Other components of manufacturing outside of the auto industry have grown much more rapidly than autos recently, collectively adding 2,199 jobs in 2013 and 1,654 in 2014. We are forecasting that the pace of these gains will slow over the next three years, cumulating to 2,188 job additions between 2014 and 2017. The manufacturing industries that see the largest job gains over the forecast period are fabricated metals (713), machinery (372), chemicals (325), and plastics (171). The manufacturing sector excluding motor vehicles accounts for a larger share of total employment in 2017 than does motor vehicle manufacturing: 6 percent versus 2.8 percent. Indeed, some of these manufacturing industries are forecast to be at or near peak employment levels in 2017, including chemicals, machine shops, metal coating and heat treating, electrical equipment, and medical equipment.

*Employment in the government sector has declined every year since 2005, but it finally turns around to add jobs in 2016 and 2017, as the sector continues to adapt to its stringent financial challenges.*

*The construction industry benefits from a revival in residential construction after struggling through a long dry spell.*

*By 2017, the manufacturing sector accounts for only 8.8 percent of the jobs in the county, down from 16 percent in 1990 and 14 percent in 2000. We expect that its share will continue to slip beyond 2017.*

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*Wholesale trade sees accelerating job growth over the next three years, with the industry paying relatively high average wages. Within this industry division, motor vehicle and parts merchant wholesalers see very strong growth.*

*Retail trade adds jobs over the next three years, over one-third of them in motor vehicle and parts dealers.*

*Relatively strong growth in trucking and other transportation services reflects strength in manufacturing production, construction activity, and consumer spending.*

*Newspaper and book publishers lose jobs between 2014 and 2017, but software publishing is expected to boom.*

*The finance and insurance industry shows weak growth over the forecast period, especially in banking, but real estate sees strong growth.*

*Between 2009 and 2014, employment in professional services exploded, and it is expected to continue to grow although at a more subdued pace. This aggregate industry category is the heart of the knowledge economy, and in Oakland County it is closely identified with the motor vehicle industry.*

Wholesale trade<sup>6</sup> sees accelerating job growth over the next three years, accumulating to a gain of 2,350 jobs, with the industry paying relatively high average wages (\$83,652 in 2013). Within this industry division, motor vehicle and parts merchant wholesalers see very strong growth (1,087 jobs) from 2014 to 2017, averaging 6.5 percent per year. This industry has enjoyed robust growth over the past quarter-century, with employment tripling between 1990 and 2017.

Retail trade, a much larger and generally lower-paying sector than wholesale trade, adds 3,072 jobs over the next three years, an average growth rate of 1.3 percent per year. Over one-third of these gains are in motor vehicle and parts dealers, which increases by 1,243 jobs over the forecast period (4.1 percent per year). This industry, unlike most of retail, pays above-average wages (\$58,057 in 2013). Other retail industries adding jobs over the forecast horizon include clothing stores (1,221 jobs) and building material and garden supply stores (638). Furniture stores, food and beverage stores, gasoline stations, and discount department stores all lose jobs between 2014 and 2017. Technology, especially the Internet, is reducing the number of workers needed for each retail transaction.

Transportation services and utilities add 1,416 jobs over the next three years. The relatively strong growth in trucking and other transportation services (1,352 jobs) reflects continued expansion of manufacturing production (even as employment gains slow), a rebound in construction activity, and increased local consumer spending as real wage and job growth pick up.

The information sector adds 965 jobs over the next three years (2 percent per year). Newspaper and book publishers lose 192 jobs between 2014 and 2017, reducing employment in this industry to less than one-half of its peak employment realized in 2003. On the other hand, the software publishing industry in Oakland is expected to boom, with jobs growing by 9.9 percent per year between 2014 and 2017, a cumulative gain of 693 jobs over the period.

The finance and insurance industry contributes 197 jobs in 2015, followed by accelerating growth in 2016 and 2017. Over the three-year forecast period, however, this amounts to an average annual growth rate of only 1.2 percent, the weakest performance of any major private-sector industry. The weakness is concentrated in banking, which adds only 117 jobs from 2014 to 2017, as well as in insurance carriers, where the net gain is a single job. Securities and investment brokers and insurance agents contribute jobs at a healthier clip over the forecast period, adding 387 and 308 jobs, respectively.

The real estate and rental and leasing industry sees strong growth over the next three years (1,394 jobs or 3 percent per year), as the real estate industry continues to recover. Note that most real estate agents are self-employed and thus are not included in these statistics.

Between 2009 and 2014, employment in professional services exploded by 27,818 jobs (6.4 percent per year). This aggregate industry category is the heart of the knowledge economy, and in Oakland County it is closely identified with the motor vehicle industry. We expect that this industry category will continue to grow over the next three years, albeit at a somewhat more subdued pace, adding 14,602 jobs (4.5 percent per year).

Job growth in professional services over the forecast period is concentrated in testing laboratories (5,727 jobs) and engineering services (4,843). Along with company management, which adds 1,094 jobs over the next three years, these industries form the core

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<sup>6</sup>“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.

<http://www.census.gov/eos/www/naics/index.html>

of the white-collar auto industry. By 2017, these three industries will account for 5.8 percent of all employment in Oakland compared with 4.9 percent in 2000 and only 3.2 percent in 1990—a pattern that is a mirror image of the long-term decline in employment in the blue-collar auto industry.

Some other professional service industries that see relatively strong job growth over the forecast horizon are marketing research and other professional services (920 jobs), computer systems design (905), and management and technical consulting services (583). Administrative and waste management services gain 2,919 jobs over the next three years, with 1,219 of those jobs being added in employment services (which include temporary help agencies); 587 jobs in business support services such as call centers and collection agencies; and 493 jobs in building services such as janitorial and landscaping services.

Employment in private education services increases by 687 jobs over the forecast period. All of these job gains occur in trade and technical schools as opposed to private elementary and secondary schools or private four-year colleges, which lose a small number of jobs from 2014 to 2017.

Health care and social assistance adds 5,994 jobs over the forecast period. Within this industry division, the largest job gains occur in individual and family social assistance (987 jobs), hospitals (984), offices of physicians (674), community care facilities for the elderly (634), and nursing care facilities (445). Efforts to reduce growth in health care spending have constrained job growth in health care services in the past couple of years, and could continue to do so in the future. On the other hand, the aging of the baby boom generation ensures that the demand for health care will increase.

The leisure and hospitality services category gains 5,615 jobs (2.9 percent per year) from 2014 to 2017. Full-service restaurants account for over one-half of these gains (3,091 jobs). Limited-service restaurants (i.e., fast-food restaurants) contribute 1,291 jobs. Over the same period, employment at fitness centers increases by 346 jobs and at golf courses and country clubs by 334 jobs.

The “other services” sector covers a wide variety of industries: repair services (including auto repair), personal services (such as hair salons and dry cleaners), membership organizations, and private household services. Taken together, these industries grow by 896 jobs over the forecast period. The largest gains are in personal care services (368 jobs) and membership organizations (313).

As shown in figure 10, the sustained job growth we are projecting for Oakland County through 2017 is accompanied by an unemployment rate that continues to decline over the forecast period, from 7.2 percent in 2014 to 5.3 percent in 2015, and then falls further to 4.7 percent in 2016 and 4.3 percent in 2017. The drop of 2.9 percentage points over the three-year period brings the jobless rate down into the neighborhood of where it was in 2001, in the earliest stages of the economic decline during the first decade of the 2000s.

The county labor force has grown since 2012, although weakly so in 2014. We are forecasting that it will continue to grow through 2017, modestly in 2015 and more vigorously thereafter, as improving job opportunities encourage more people to reenter the labor force in the hope of finding employment. If, instead, the labor force declines or expands at a slower pace than we anticipate, then the unemployment rate would fall more rapidly with the employment gains we are projecting.

Oakland’s unemployment rate was 3.7 percentage points above the U.S. rate in 2009 (13.0 percent versus 9.3 percent), but the gap has narrowed since then, to one percentage point in 2014 (7.2 percent versus 6.2 percent). We are forecasting that the nation and the county will come in at the same rate in 2015 (5.3 percent) before switching positions starting in 2016, with Oakland’s jobless rate maintaining an advantage of three-tenths of a percentage point in 2016 and 2017.

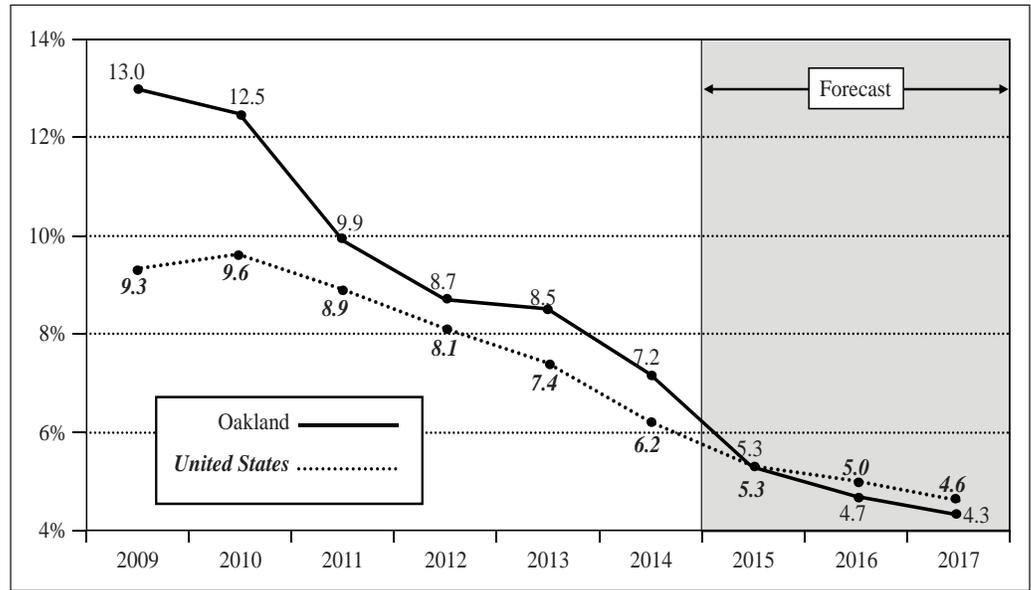
*Employment in private education services increases over the forecast period, but only in trade and technical schools as opposed to private elementary and secondary schools or private four-year colleges, which lose a small number of jobs.*

*Efforts to reduce growth in health care spending have constrained job growth in health care services in the past couple of years, and could continue to do so in the future. On the other hand, the aging of the baby boom generation ensures that the demand for health care will increase.*

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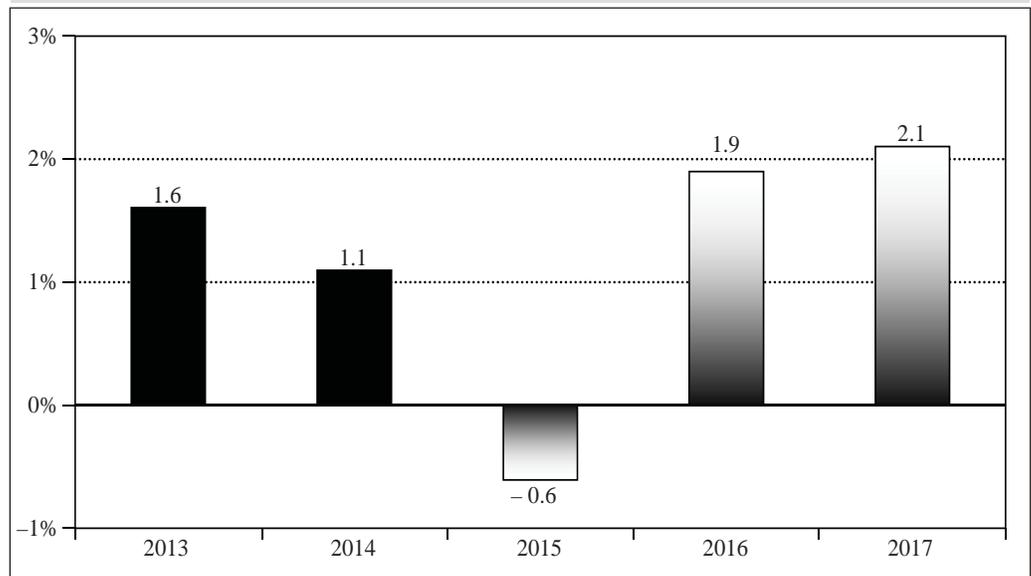
**Figure 10. Unemployment Rates for Oakland County and for the United States, 2009–17**



*The sharp drop in oil prices is a major factor in a decline in the local price index for calendar-year 2015 compared with 2014. Local inflation then rebounds in 2016, spurred by a continuing partial recovery in crude oil prices.*

Local inflation is measured in figure 11 by the growth rate of the Detroit Consumer Price Index (CPI), representing the Detroit metro area overall, as consumer price data are not compiled for the county in isolation. Oil prices dropped sharply at the end of 2014 and the beginning of 2015. They are expected to rise somewhat during much of 2015 but to remain low. This pattern is a major factor in a decline of 0.6 percent in the local price index for calendar-year 2015 compared with 2014. Local inflation then rebounds in 2016 to 1.9 percent, a tenth of a percentage point below the U.S. rate, spurred by the continuing partial recovery in crude oil, and thus gasoline, prices. Local inflation nudges up to 2.1 percent in 2017, equal to the rate forecast for the U.S. CPI.

**Figure 11. Inflation Rate, Detroit CPI, 2013–17**



## CONCLUSION

We foresee an Oakland County economy that continues to march on in 2015, and then accelerates over the following two years, extending the span of the current recovery to eight years. The county is projected to add 14,389 jobs in 2015, 16,106 in 2016, and 18,537 in 2017, cumulating to an increase of 49,032 jobs over the three calendar years, a healthy clip averaging 2.3 percent per year.

Every major industry division contributes to job creation over the next three years. The top job producers among them are professional, scientific, and technical services; and health care and social assistance. Professional, scientific, and technical services, the heart of the knowledge economy, alone accounts for three in ten of the total jobs created from 2014 to 2017.

In response to the sustained job growth, the county unemployment rate falls by almost 3 percentage points from calendar-year 2014 to 2017, and moreover, re-establishes its position below the U.S. rate by 2016. And all of this transpires in a low-inflation environment.

Movements in the average real wage in Oakland have been sluggish for some time, but we are forecasting that wages will pick up to grow 4.6 percent between 2014 and 2017, benefiting from the decline in prices in 2015 and a tightening labor market that puts more pressure on wages. As with employment opportunities, the greatest gains in wages accrue to those working in the higher-educational-attainment service industries.

The primary risks to the forecast include, internationally: (1) any significant change to economic growth among U.S. trading partners, with particular concerns related to the Eurozone and the softer growth in China, and (2) the highly uncertain path of oil prices. Nationally, the risks are: (1) uncertainties over the phasing in of monetary policy tightening, and (2) the path of domestic wage growth. Locally: (1) shortages of skilled personnel hindering the hiring of workers, a phenomenon that has already surfaced in Oakland and is bound to increase over time with the county's vibrant economy, and (2) the technological evolution of the auto industry, in which Oakland is a leading player, escalating more than we anticipate. Finally, a general source of risk would be natural causes, particularly abnormal weather.

Our positive outlook for the Oakland County economy is supported in the shorter term by a U.S. economy that expands through 2017, and by increasing Detroit Three vehicle sales. Beyond our three-year forecast horizon, the prospects for the county economy remain bright, in large part the consequence 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.

These strengths don't simply arise in a vacuum, however. Credit for the county's continued economic prosperity should also be given to county leadership that has for years crafted and implemented forward-looking policy initiatives that anticipated developments in the New Economy. The county's Emerging Sectors, Automation Alley, and Medical Main Street programs, along with its promotion of skilled trades as a career and education in general, are several examples of such forward-looking policies, with still more initiatives going down the road. Oakland County continues to keep its foot on the gas pedal.

*We foresee an Oakland County economy that continues to march on in 2015, and then accelerates over the following two years, extending the span of the current recovery to eight years.*

*The county unemployment rate falls by almost 3 percentage points from calendar-year 2014 to 2017, re-establishing its position below the U.S. rate by 2016—and this transpires in a low-inflation environment.*

*We are forecasting that wages will grow 4.6 percent between 2014 and 2017, with the greatest gains occurring in the higher-educational-attainment service industries.*

*One risk to the forecast is shortages of skilled workers, a phenomenon that has already surfaced in Oakland and is bound to increase over time with the county's vibrant economy.*

*The prospects for the county economy remain bright, in large part due to its strong economic fundamentals. Credit for the county's continued economic prosperity should also be given to county leadership for forward-looking policy initiatives that anticipated developments in the New Economy.*

## Appendix A

## Forecast of Employment in Oakland County by Detailed Industry Division, 2015–17

	Estimate	Forecast			Average
	2014	2015	2016	2017	Annual Wage 2013
TOTAL PAYROLL JOBS (Number of persons)	690,377	704,766	720,872	739,409	\$54,758
(Annual percentage change)	(1.7)	(2.1)	(2.3)	(2.6)	N.A
TOTAL GOVERNMENT	44,552	44,520	44,539	44,746	51,197
Federal government	4,554	4,505	4,478	4,485	66,225
Postal Service	3,504	3,505	3,513	3,544	60,942
Federal government NEC	1,050	1,000	966	941	82,424
State and local government	39,998	40,015	40,061	40,261	49,447
Local libraries	512	510	512	517	19,543
Local education and health services	22,947	22,972	22,933	22,938	51,202
Elementary and secondary schools	20,749	20,853	20,823	20,831	52,308
Other education and health services	2,198	2,119	2,110	2,107	40,826
Local public administration	12,236	12,221	12,302	12,465	46,233
State and other local government	4,302	4,312	4,315	4,340	52,687
TOTAL PRIVATE	645,825	660,246	676,332	694,663	55,011
GOODS-PRODUCING	83,710	85,986	88,101	90,329	68,872
Natural resources and mining	651	646	641	638	30,651
Agriculture, forestry, fishing, and hunting	518	509	502	497	23,815
Mining, quarrying, and oil and gas extraction	133	137	139	141	56,066
Construction	21,539	22,680	23,645	24,629	63,488
Construction of buildings	5,762	6,088	6,432	6,760	69,031
Residential	3,044	3,222	3,457	3,692	69,964
Nonresidential	2,718	2,866	2,975	3,067	68,050
Heavy and civil engineering construction	1,908	1,992	2,060	2,145	70,670
Utility systems	846	881	899	926	60,617
Land subdivision	208	208	219	235	71,928
Highway, street, and bridge construction	802	845	877	912	83,216
Other heavy construction	51	58	65	73	50,010
Specialty trade contractors	13,869	14,599	15,154	15,724	60,332
Building foundation and exterior	2,007	2,105	2,174	2,247	47,302
Building equipment	7,994	8,451	8,720	8,988	67,461
Building finishing	2,054	2,089	2,158	2,228	47,488
Other specialty trade contractors	1,814	1,955	2,102	2,261	57,518
Manufacturing	61,520	62,661	63,815	65,062	71,087
Food	965	1,014	1,044	1,081	26,471
Bakeries and tortilla manufacturing	453	495	524	554	16,913
Food manufacturing NEC	512	519	520	526	34,315
Textile products	161	170	176	183	27,447
Wood products	119	123	124	124	50,847
Paper products	257	274	282	286	72,168
Printing and related support activities	1,854	1,851	1,842	1,832	54,485
Chemicals	2,971	3,074	3,184	3,296	83,264
Plastics and rubber products	3,281	3,362	3,408	3,452	48,310
Nonmetallic mineral products	1,113	1,124	1,148	1,177	56,601
Primary metals	1,389	1,400	1,382	1,372	82,620
Fabricated metals	11,461	11,671	11,921	12,175	58,296
Forging and stamping	979	1,038	1,083	1,125	55,236
Architectural and structural metals	749	764	772	781	49,931
Machine shops and threaded products	4,391	4,424	4,475	4,530	63,031
Coating, engraving, and heat treating metals	2,079	2,153	2,237	2,320	51,092
Other fabricated metals	1,615	1,594	1,603	1,614	61,666
Fabricated metals NEC	1,648	1,698	1,751	1,805	57,750

## Appendix A continued

## Forecast of Employment in Oakland County by Detailed Industry Division, 2015–17

	Estimate	Forecast			Average
	2014	2015	2016	2017	Annual Wage 2013
Machinery	10,859	10,954	11,086	11,231	\$75,729
Industrial machinery	764	789	798	807	74,259
Commercial and service industry machinery	454	459	469	477	62,870
Metalworking machinery	5,433	5,431	5,467	5,511	73,669
Turbine and power transmission equipment	568	567	568	573	81,178
Other general purpose machinery	3,294	3,350	3,419	3,491	82,548
Machinery NEC	345	358	364	370	58,109
Computer and electronic products	2,373	2,348	2,331	2,317	67,629
Semiconductors and electronic components	1,317	1,269	1,247	1,226	59,890
Electronic instruments	744	749	745	744	73,732
Computer and electronic products NEC	312	330	339	348	89,396
Electrical equipment, appliances, components	1,146	1,165	1,181	1,198	65,491
Transportation equipment	19,559	19,950	20,406	20,912	86,268
Motor vehicle bodies and trailers	905	1,001	1,074	1,144	103,000
Aerospace products and parts	1,047	1,052	1,065	1,077	71,382
Transportation equipment NEC	17,607	17,896	18,267	18,692	86,437
Furniture and related products	465	478	500	520	47,420
Miscellaneous manufacturing	2,618	2,720	2,783	2,847	53,571
Medical equipment and supplies	918	933	950	969	50,921
Other miscellaneous manufacturing	1,700	1,787	1,832	1,878	55,120
Manufacturing NEC	932	983	1,016	1,061	48,069
<b>PRIVATE SERVICE-PROVIDING</b>	<b>562,116</b>	<b>574,259</b>	<b>588,232</b>	<b>604,334</b>	<b>52,993</b>
Trade, transportation, and utilities	122,584	124,580	126,787	129,422	48,824
Wholesale trade	35,686	36,345	37,119	38,036	83,652
Merchant wholesalers, durable goods	23,759	24,398	25,033	25,798	89,320
Motor vehicles and parts	5,251	5,625	5,972	6,338	87,024
Commercial equipment	5,581	5,581	5,600	5,656	106,925
Office equipment	1,005	996	987	983	66,564
Computers and software	2,652	2,644	2,646	2,663	138,155
Medical equipment	1,342	1,346	1,364	1,398	85,920
Commercial equipment NEC	583	595	603	613	71,523
Electric goods	4,033	4,118	4,159	4,208	96,811
Machinery and supply	4,724	4,794	4,915	5,101	81,398
Industrial machinery	3,144	3,176	3,247	3,366	81,813
Machinery and supply NEC	1,580	1,619	1,668	1,735	80,468
Merchant wholesalers, durable goods NEC	4,170	4,280	4,386	4,495	67,680
Merchant wholesalers, nondurable goods	7,099	7,168	7,333	7,510	67,391
Paper and paper products	405	403	400	394	68,246
Druggists' goods	1,941	1,987	2,055	2,125	64,462
Groceries and related products	1,335	1,365	1,397	1,430	49,829
Chemicals	1,413	1,391	1,397	1,433	101,247
Miscellaneous nondurable goods	1,182	1,180	1,239	1,277	63,049
Merchant wholesalers, nondurable goods NEC	824	840	845	852	69,050
Wholesale electronic markets, agents, brokers	4,828	4,780	4,753	4,727	80,226
Retail trade	76,046	76,927	77,901	79,119	30,723
Motor vehicle and parts dealers	9,820	10,333	10,682	11,062	58,057
Furniture and home furnishings stores	2,482	2,445	2,430	2,412	33,144
Electronics and appliance stores	4,205	4,229	4,250	4,293	44,319
Building material and garden supply dealers	6,312	6,518	6,721	6,951	38,168
Food and beverage stores	11,112	10,926	10,872	10,898	22,772
Health and personal care stores	5,503	5,510	5,522	5,538	35,751

## Appendix A continued

## Forecast of Employment in Oakland County by Detailed Industry Division, 2015–17

	Estimate	Forecast			Average
	2014	2015	2016	2017	Annual Wage 2013
Retail trade (continued)					
Gasoline stations	1,986	1,988	1,969	1,959	\$17,042
Clothing and clothing accessories stores	8,247	8,634	9,060	9,469	19,017
Sporting goods, hobby, book, and music stores	4,163	4,162	4,179	4,222	22,353
General merchandise stores	15,916	15,860	15,859	15,873	22,402
Department stores, except discount	4,322	4,350	4,369	4,395	24,803
Discount department stores	4,351	4,209	4,118	4,032	18,568
Warehouse clubs and supercenters	6,127	6,136	6,155	6,178	24,803
All other general merchandise stores	1,116	1,165	1,217	1,267	15,513
Miscellaneous store retailers	5,206	5,195	5,235	5,320	26,041
Nonstore retailers	1,094	1,126	1,122	1,121	46,418
Transportation and warehousing	9,572	10,003	10,443	10,925	45,610
Truck transportation	3,114	3,276	3,432	3,595	53,337
Couriers and messengers	1,531	1,580	1,623	1,665	49,114
Warehousing and storage	1,245	1,184	1,157	1,139	53,325
Transportation and warehousing NEC	3,682	3,962	4,232	4,526	35,076
Utilities	1,280	1,305	1,323	1,342	134,029
Information	16,040	16,391	16,664	17,005	74,180
Publishing (except Internet)	3,929	4,088	4,255	4,430	90,626
Newspaper, book, and directory publishers	1,801	1,715	1,660	1,609	66,412
Software publishers	2,127	2,374	2,594	2,820	115,397
Motion pictures and sound recording	2,399	2,455	2,456	2,475	30,869
Motion picture and video production	446	442	459	476	78,529
Motion picture and video exhibition	1,394	1,417	1,429	1,451	10,613
Motion pictures and sound recording NEC	560	596	568	549	68,471
Broadcasting (except Internet)	1,452	1,479	1,504	1,533	94,274
Telecommunications	5,679	5,711	5,709	5,726	75,206
Wireless telecommunications carriers	853	866	853	837	88,901
Telecommunications NEC	4,825	4,845	4,856	4,889	72,630
Data processing, hosting, and related services	1,893	1,897	1,911	1,932	66,868
Information NEC	688	760	829	909	81,515
Financial activities	48,644	49,275	50,148	51,255	73,979
Finance and insurance	33,430	33,628	34,065	34,648	86,076
Credit intermediation and related activities	14,500	14,491	14,687	14,913	78,676
Depository credit intermediation	8,753	8,695	8,742	8,813	74,084
Commercial banking	6,424	6,344	6,378	6,435	77,878
Depository credit intermediation NEC	2,329	2,351	2,365	2,378	64,317
Nondepository credit intermediation	4,611	4,661	4,792	4,925	88,606
Real estate credit intermediation	1,732	1,732	1,770	1,811	72,198
Nondepository credit intermediation NEC	2,879	2,929	3,022	3,114	98,214
Activities related to credit intermediation	1,135	1,134	1,152	1,176	67,132
Mortgage and nonmortgage loan brokers	370	400	438	477	75,939
Activities related to credit intermediation NEC	765	734	715	698	57,322
Securities, commodity contracts, investments	4,353	4,461	4,574	4,739	142,355
Insurance carriers and related activities	14,524	14,622	14,750	14,941	76,519
Insurance carriers	7,517	7,507	7,496	7,518	82,618
Direct property and casualty insurers	1,866	1,841	1,820	1,802	83,139
Insurance carriers NEC	5,651	5,666	5,676	5,716	82,434
Insurance agencies, brokerages, and related	7,007	7,115	7,254	7,423	69,375
Insurance agencies and brokerages	4,888	5,003	5,129	5,268	72,434
Other insurance-related activities	2,119	2,112	2,126	2,155	61,429
Finance and insurance NEC	55	54	54	54	120,786

## Appendix A continued

## Forecast of Employment in Oakland County by Detailed Industry Division, 2015–17

	Estimate	Forecast			Average
	2014	2015	2016	2017	Annual Wage 2013
Real estate and rental and leasing	15,214	15,648	16,083	16,607	\$45,524
Real estate	11,972	12,339	12,733	13,199	45,663
Lessors of real estate	5,421	5,505	5,604	5,708	40,852
Offices of real estate agents and brokers	1,339	1,381	1,464	1,570	48,076
Activities related to real estate	5,212	5,453	5,666	5,921	50,534
Rental and leasing services	2,914	2,964	2,986	3,025	40,471
Lessors of nonfinancial intangible assets	327	345	364	383	74,597
Professional and business services	181,495	186,772	193,059	200,110	66,709
Professional and technical services	103,864	108,732	113,344	118,466	78,536
Legal services	11,867	11,961	12,063	12,182	82,022
Accounting and bookkeeping services	6,147	6,189	6,247	6,354	64,675
Architectural and engineering services	44,041	47,570	51,023	54,874	76,786
Architectural services	1,273	1,337	1,405	1,488	76,958
Engineering services	23,038	24,676	26,235	27,881	72,840
Testing laboratories	19,295	21,105	22,914	25,022	82,168
Engineering services NEC	436	453	469	484	65,948
Specialized design services	2,133	2,277	2,478	2,724	83,220
Computer systems design and related services	20,328	20,707	20,992	21,233	82,356
Management and technical consulting services	8,679	8,922	9,090	9,262	80,751
Scientific research and development services	1,409	1,466	1,533	1,603	160,973
Advertising, PR, and related services	4,373	4,413	4,421	4,426	83,892
Other professional and technical services	4,887	5,226	5,497	5,807	52,446
Management of companies and enterprises	13,928	14,167	14,592	15,022	113,836
Administrative support and waste management	63,703	63,874	65,123	66,622	38,652
Administrative and support services	62,445	62,660	63,912	65,401	38,391
Office administrative services	4,073	4,119	4,241	4,409	54,834
Employment services	30,926	30,836	31,429	32,145	42,409
Business support services	6,440	6,677	6,855	7,027	38,295
Investigation and security services	5,384	5,372	5,388	5,418	26,029
Services to buildings and dwellings	11,902	11,854	12,099	12,395	24,383
Other support services	2,409	2,437	2,507	2,575	47,842
Administrative and support services NEC	1,311	1,365	1,393	1,431	43,762
Waste management and remediation services	1,258	1,213	1,211	1,221	53,725
Private education and health services	107,935	109,481	111,805	114,616	46,326
Education services	10,968	11,137	11,357	11,655	40,729
Elementary and secondary schools	3,947	3,937	3,896	3,880	36,142
Colleges and universities	2,174	2,128	2,119	2,143	37,920
Education services NEC	4,848	5,072	5,343	5,632	45,677
Health care and social assistance	96,967	98,344	100,448	102,961	46,994
Ambulatory health care	40,033	40,367	41,149	42,131	54,127
Offices of physicians	14,463	14,559	14,797	15,137	75,539
Offices of dentists	6,262	6,302	6,409	6,545	48,204
Offices of other health practitioners	4,854	4,912	5,013	5,116	40,572
Outpatient care centers	2,643	2,698	2,752	2,817	52,888
Medical and diagnostic laboratories	1,559	1,581	1,675	1,815	47,191
Home health care services	9,007	9,051	9,238	9,434	33,473
Other ambulatory health care services	1,244	1,264	1,266	1,268	39,779
Hospitals	31,798	31,991	32,349	32,781	55,427
Nursing and residential care facilities	15,313	15,798	16,356	16,955	26,336
Nursing care facilities	4,515	4,711	4,851	4,960	31,336
Residential mental health facilities	2,955	2,993	3,092	3,217	23,835

## Appendix A continued

## Forecast of Employment in Oakland County by Detailed Industry Division, 2015–17

	Estimate	Forecast			Average
	2014	2015	2016	2017	Annual Wage 2013
Nursing and residential care facilities (continued)					
Community care facilities for the elderly	6,193	6,383	6,601	6,827	\$24,560
Other residential care facilities	1,651	1,711	1,812	1,951	22,079
Social assistance	9,823	10,188	10,594	11,093	22,474
Individual and family services	5,019	5,263	5,587	6,006	23,657
Child day care services	3,477	3,546	3,557	3,549	18,472
Social assistance NEC	1,327	1,380	1,450	1,538	28,929
Leisure and hospitality	62,136	64,188	65,940	67,751	18,759
Arts, entertainment, and recreation	9,126	9,504	9,787	10,074	33,166
Spectator sports	1,123	1,256	1,322	1,367	94,797
Golf courses and country clubs	2,022	2,189	2,281	2,356	25,722
Fitness and recreational sports centers	3,922	4,022	4,131	4,268	17,059
Arts, entertainment, and recreation NEC	2,059	2,036	2,052	2,082	38,183
Accommodation and food services	53,010	54,684	56,153	57,678	16,300
Accommodation	3,857	3,886	3,917	3,930	23,665
Food services and drinking places	49,153	50,798	52,236	53,747	15,743
Restaurants and other eating places	43,373	45,010	46,358	47,774	15,499
Full-service restaurants	23,591	24,866	25,762	26,682	17,451
Limited-service restaurants	17,176	17,546	17,985	18,467	12,800
Cafeterias, grill buffets, and buffets	449	457	447	444	18,560
Snack and nonalcoholic beverage bars	2,157	2,140	2,163	2,182	14,449
Special food services	3,992	3,902	3,921	3,953	18,734
Drinking places, alcoholic beverages	1,788	1,886	1,958	2,020	15,108
Other services	21,490	21,783	22,041	22,385	31,147
Repair and maintenance	5,841	5,922	6,000	6,085	40,557
Automotive repair and maintenance	4,148	4,176	4,206	4,243	38,511
Repair and maintenance NEC	1,694	1,745	1,794	1,841	45,464
Personal and laundry services	8,289	8,426	8,566	8,742	23,016
Personal care services	4,838	4,926	5,056	5,205	20,552
Personal and laundry services NEC	3,452	3,500	3,510	3,536	26,619
Membership associations and organizations	5,966	6,081	6,163	6,279	35,654
Private households	1,393	1,355	1,311	1,280	22,363
Private unclassified service-providing	1,793	1,789	1,789	1,789	46,497
<u>Addendum</u>					
Unemployment rate	7.2	5.3	4.7	4.3	N.A.

## Appendix B

## Oakland County Compared with 35 U.S. Counties of Similar Size\*—Indicator Values

County	State	Population 2014	Associate's Degree or More	Child Poverty	Median Family Income**	High-Income	
						Persons Aged 65 or Older	Managerial, Professional
Fairfax	VA	1,137,538	66.9%	7.3%	\$102,280	62.6%	55.9%
Montgomery	MD	1,030,447	62.3%	9.4%	94,049	56.3%	54.9%
Middlesex	MA	1,570,315	62.2%	11.0%	93,103	37.6%	53.0%
Nassau	NY	1,358,627	55.0%	8.6%	87,633	45.5%	43.5%
Bergen	NJ	933,572	57.4%	11.3%	80,384	41.0%	47.6%
Westchester	NY	972,634	57.1%	13.3%	84,214	43.5%	46.6%
Wake	NC	998,691	59.2%	14.6%	85,170	38.0%	49.7%
DuPage	IL	932,708	56.8%	9.5%	85,270	36.2%	45.1%
<b>Oakland</b>	<b>MI</b>	<b>1,237,868</b>	<b>54.3%</b>	<b>13.0%</b>	<b>86,144</b>	<b>35.0%</b>	<b>46.7%</b>
Fairfield	CT	945,438	54.8%	11.9%	83,543	39.9%	42.3%
Hennepin	MN	1,212,064	57.9%	15.6%	81,631	31.1%	46.6%
Contra Costa	CA	1,111,339	48.4%	13.5%	77,889	39.6%	41.4%
Fulton	GA	996,319	56.4%	25.0%	77,073	35.8%	48.4%
Travis	TX	1,151,145	52.1%	21.7%	75,844	39.4%	45.7%
Suffolk	NY	1,502,968	46.9%	9.5%	76,871	38.7%	36.9%
St. Louis	MO	1,001,876	53.1%	16.8%	81,470	31.1%	43.7%
Allegheny	PA	1,231,255	54.0%	18.8%	76,425	22.6%	43.2%
Honolulu	HI	991,788	46.8%	12.0%	69,438	36.7%	36.2%
Prince George's	MD	904,430	36.5%	13.6%	70,856	42.8%	36.6%
Mecklenburg	NC	1,012,539	51.2%	19.9%	69,166	27.7%	40.8%
Salt Lake	UT	1,091,742	41.0%	16.4%	72,692	30.0%	38.5%
Franklin	OH	1,231,393	46.3%	25.5%	68,776	25.7%	41.4%
Erie	NY	922,835	48.1%	23.7%	70,596	22.2%	38.2%
Palm Beach	FL	1,397,710	42.0%	22.5%	60,692	31.4%	34.0%
Hillsborough	FL	1,316,298	42.7%	24.0%	61,564	21.9%	38.0%
Cuyahoga	OH	1,259,828	42.0%	28.0%	67,327	22.0%	39.5%
Sacramento	CA	1,482,026	38.6%	26.2%	59,912	27.7%	37.3%
Pinellas	FL	938,098	41.7%	23.7%	58,391	22.3%	36.8%
Shelby	TN	938,803	38.2%	35.8%	60,992	28.1%	35.7%
Orange	CA	1,253,001	43.6%	26.4%	56,329	20.3%	34.7%
Pima	AZ	1,004,516	37.6%	26.7%	57,110	25.5%	35.4%
Milwaukee	WI	956,406	39.4%	33.3%	57,287	18.2%	34.1%
Marion	IN	934,243	36.0%	30.4%	53,955	17.1%	34.6%
Fresno	CA	965,974	28.1%	42.8%	49,573	23.5%	28.4%
Philadelphia	PA	1,560,297	33.0%	36.1%	41,743	15.1%	35.8%
Bronx	NY	1,438,159	27.1%	42.0%	31,454	16.6%	23.9%

\*All counties in the United States with a population between 900,000 and 1,600,000 in 2014.

\*\*Adjusted for the cost of living.

Source: Compiled by Donald Grimes and George Fulton, University of Michigan, using data from the American Community Survey 2013. Population data are from the Census Bureau population estimates program as of April 2015.