Economic and Revenue Outlook

FY 2018-19, FY 2019-20 and FY 2020-21

Michigan Department of Treasury

Rachael Eubanks, State Treasurer

Office of Revenue and Tax Analysis
Eric Bussis, Chief Economist and Director
Andrew Lockwood, Manager, Forecasting and Economic Analysis
Thomas Patchak-Schuster, Economic Specialist

January 11, 2019

Economic and Revenue Outlook

FY 2018-19, FY 2019-20 and FY 2020-21

Michigan Department of Treasury

Acknowledgements

The Economic and Revenue Outlook was prepared by Eric Bussis, Director of the Office and Revenue and Tax Analysis (ORTA), Thomas Patchak-Schuster and Andrew Lockwood of ORTA. ORTA economists Scott Darragh, Denise Heidt, and Eric Krupka contributed to the estimates contained in the report. David Simon and Brian Barnes of ORTA provided editorial assistance.

Table of Contents

List of Tables

SECTION I

Administration Estimates
Executive Summary

Administration Estimates
Executive Summary
January 11, 2019

Revenue Review and Outlook

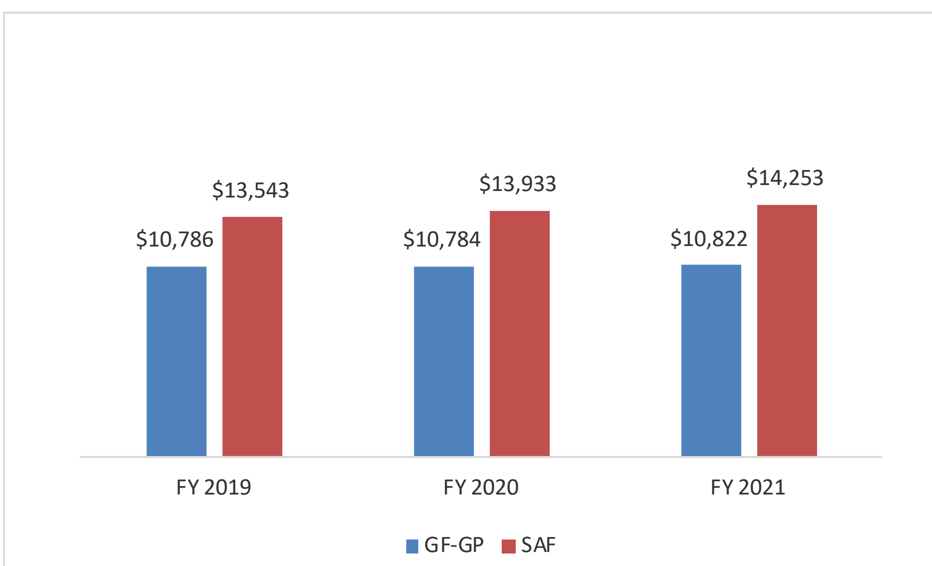
- Over the forecast horizon, revenue growth is expected as solid economic fundamentals will bring increased income tax and sales tax collections. Earmarking changes from GF-GP income tax will constrain growth of that fund.

- FY 2019 GF-GP revenue is forecast to decrease 1.5 percent to $10,786.0 million, up $374.4 million from the May 2018 Consensus estimate. FY 2019 SAF revenue is forecast to increase 1.5 percent to $13,542.6 million, down $31.8 million from the May 2018 Consensus estimate.

- FY 2020 GF-GP revenue is forecast to remain approximately flat at $10,783.9 million, up $265.2 million from the May 2018 Consensus estimate. FY 2020 SAF revenue is forecast to increase 2.9 percent to $13,932.7 million, up $31.9 million from the May 2018 Consensus estimate.

- FY 2021 GF-GP revenue is forecast to increase 0.4 percent to $10,822.1 million. FY 2021 SAF revenue is forecast to increase 2.3 percent to $14,252.6 million.

Administration GF-GP and School Aid Fund Revenue Estimates (millions of dollars)



2019, 2020 and 2021 U.S. Economic Outlook

- The U.S. economy is expected to continue to grow over the forecast horizon.

- In 2018, real GDP growth is estimated to have accelerated to 2.9 percent from 2.2 percent. However, economic growth is forecast to decelerate to 2.6 percent in 2019, 1.8 percent in 2020 and 1.6 percent in 2021.

- In 2018, national employment increased 1.6 percent marking its eighth straight national annual increase. U.S. employment is projected to rise 1.5 percent in 2019, 1.0 percent in 2020 and 0.7 percent in 2021.

- The U.S. unemployment rate has declined in each of the past eight years. In 2018, the national unemployment rate dropped 0.5 of a point to 3.9 percent – the lowest annual unemployment rate since 1969. The national unemployment rate is forecast to fall to 3.6 percent in 2019, remain unchanged at 3.6 percent in 2020 and rise to 3.7 percent in 2021.

- Housing starts increased an estimated 4.6 percent in 2018. Housing starts are forecast to rise 1.9 percent in 2019, 1.7 percent in 2020 and 2.5 percent in 2021. In 2021, starts are expected to total 1.337 million units – still historically low.

- In 2018, light vehicle sales rose slightly to an estimated 17.2 million units. Over the forecast horizon, light vehicle sales are projected to fall to 16.9 million units in 2019, 16.6 million units in 2020 and 16.5 million units in 2021.

- In 2018, inflation accelerated to an estimated 2.5 percent. Inflation is forecast to slow to 2.0 percent in 2019, accelerate to 2.3 percent in 2020 and slow to 2.2 percent in 2021.

2019, 2020 and 2021 Michigan Economic Outlook

- The Michigan economy continues to grow over the forecast from 2019 to 2021. Michigan wage and salary employment and personal income are expected to show considerable growth.

- Michigan wage and salary employment increased an estimated 1.3 percent in 2018. Michigan employment is forecast to rise 0.8 percent in 2019, 0.7 percent in 2020 and 0.6 percent in 2021.

- The Michigan unemployment rate has dropped each year since 2010. In 2018, the Michigan unemployment rate fell to an estimated 4.4 percent. The Michigan unemployment rate is forecast to decline to 3.9 percent in 2019, remain unchanged at 3.9 percent in 2020 and fall to 3.8 percent in 2021.

- After dropping 8.3 percent in 2009 (the largest percent decline since 1945), Michigan wages and salaries have increased each year. In 2018, Michigan wages and salaries grew an estimated 4.4 percent. Michigan wages and salaries are forecast to rise 3.6 percent in 2019, increase 4.0 percent in 2020 and rise 3.8 percent in 2021.

- Michigan personal income increased an estimated 3.8 percent in 2018. Michigan income is projected to increase 3.7 percent in 2019, and to rise 4.0 percent in both 2020 and 2021.

- On a fiscal year basis, Michigan disposable income rose 3.9 percent in FY 2018. Disposable income is projected to rise 3.7 percent in FY 2019, increase 4.0 percent in FY 2020 and rise 3.9 percent in FY 2021.

- Wages and salaries increased 3.7 percent in FY 2018. Wages and salaries are forecast to increase 3.7 percent in FY 2019, rise 4.0 percent in FY 2020, and increase 3.8 percent in FY 2021.

Forecast Risks

- International geopolitical and international trade tensions and U.S. household and business concerns about these tensions have grown markedly in recent months. Chief international trade risks surround the ongoing U.S.-China trade war, the United Kingdom's imminent departure from the European Union, and the re-negotiation of the North American Free Trade Agreement.

- Current political divisions in the U.S. federal government and the resultant political impasses pose a substantial risk to future policymaking and more broadly the U.S. macroeconomy.

- Uncertainty surrounds what future actions the Fed will take over the forecast horizon (including rate adjustments and quantitative easing) and the impact of Fed actions on consumer and business sentiment, spending and investment.

- To the extent to which consumer and business expectations drop going forward, sentiment could drop sharply and, in turn, weaken the macroeconomy.

- Slower than expected economic growth across Asia and Europe could have a negative impact on the U.S. economy.

- Lower than expected vehicle sales would weaken the U.S. and Michigan economies.

SECTION II

Economic Review

Economic Review
January 11, 2019

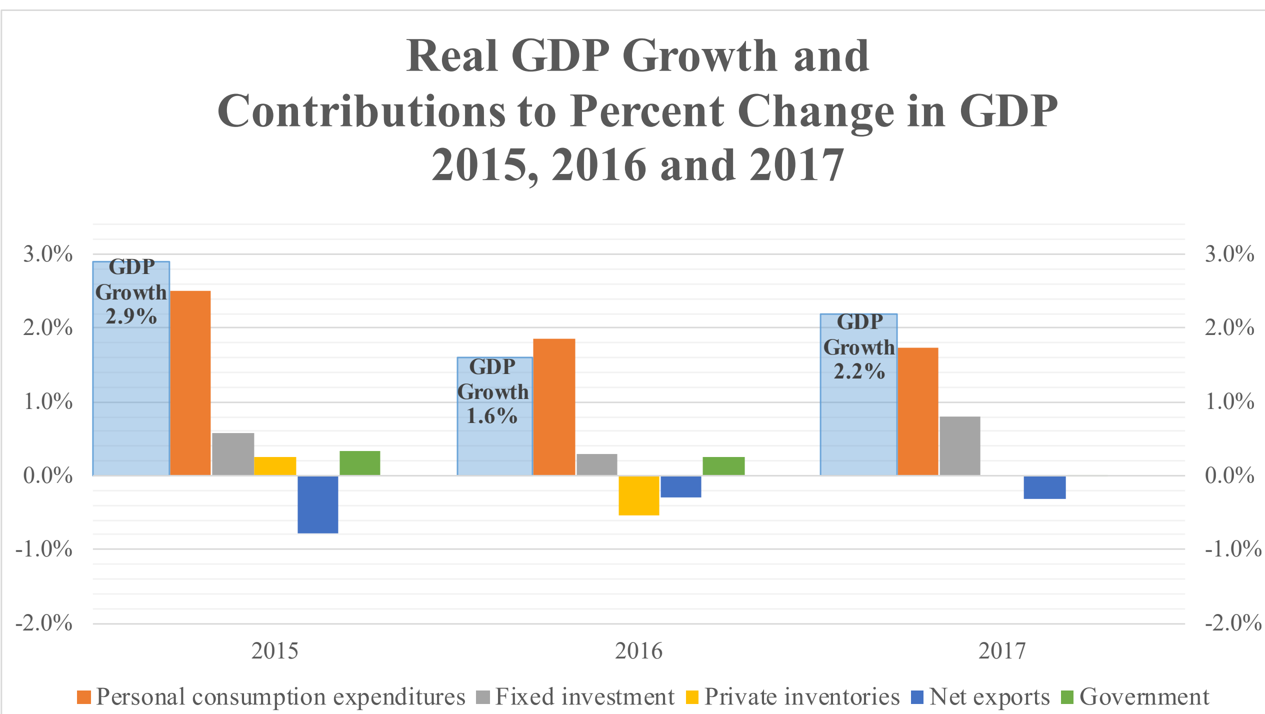
Current U.S. Economic Situation

Overall Economic Growth

The current U.S. economic expansion is one of the longest expansions, but also one of the slowest expansions on record.

The current U.S. economic expansion is over 9 years old. According to the Institute for Supply Management, the overall U.S. economy expanded for its 116th straight month in December 2018. **Real Gross Domestic Product (GDP)** has grown in all but three quarters since the end of the Great Recession.

After growing 2.9 percent in 2015, real GDP slowed to 1.6 percent in 2016 – matching 2011 growth as the slowest annual real GDP gain in the current expansion. However, growth accelerated to 2.2 percent in 2017. In addition, growth has accelerated in 2018. Through the first three quarters of 2018, average real GDP is up 2.8 percent from average real GDP in the first three quarters of 2017. Comprising the largest share of the level of real GDP, consumption has played the largest role in supporting overall annual real GDP growth as the graph below illustrates.



Employment

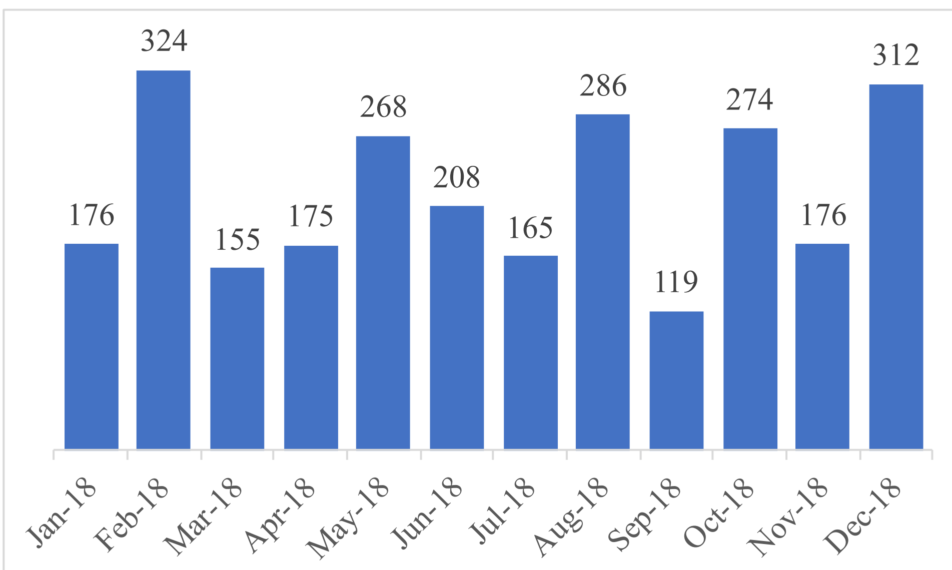
Overall Wage and Salary Employment

Wage and salary employment growth remains strong, with employment at an all-time high.

The current streak of monthly employment gains (99 months) is by far the longest on record.

U.S. wage and salary employment has continued rising since the May 2018 Consensus Conference. December 2018 marked the 99th consecutive increase from the prior month in national wage and salary employment. Consequently, at 150.3 million jobs, the December 2018 employment level represents the all-time high monthly U.S. employment level. Since the May 2018 Consensus Conference, employment rose by 1.8 million jobs (an average of 226,000 jobs increase per month). Compared to a year ago, December 2018 employment was up by 2.6 million jobs (1.8 percent). The most recent three-month average of employment gains (October 2018-December 2018), equaled 254,000 jobs – the highest three-month average in over two years.

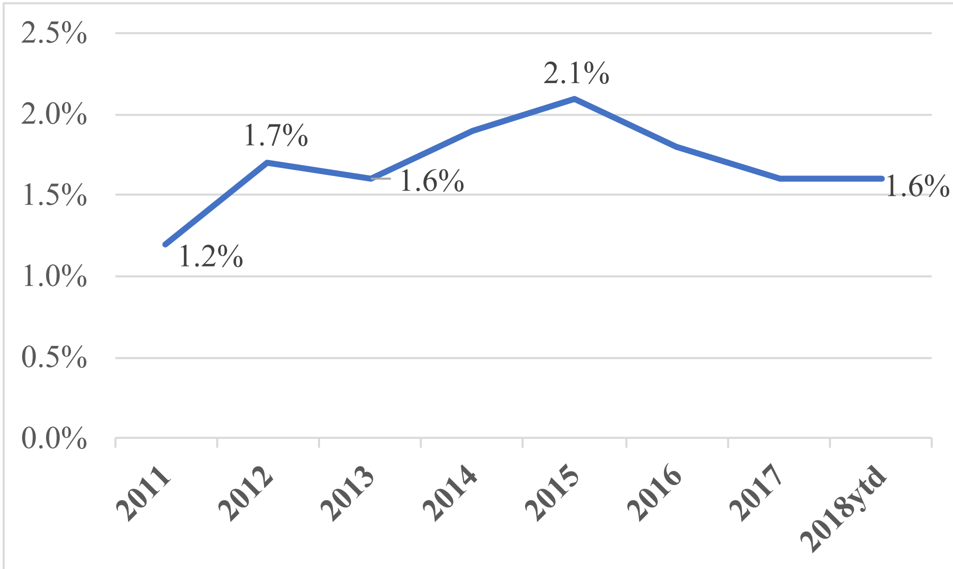
U.S. Payroll Employment
2.4 Million Jobs Added in Past Year
(Monthly Change in Thousands)



Source: Bureau of Labor Statistics, U.S. Department of Labor.

In calendar year 2018 employment was up 1.6 percent -- making 2018 the eighth straight calendar year of U.S. payroll employment increases. The overall annual U.S. employment level ranged between 1.2 percent and 2.1 percent during the period 2011 to 2017.

United States Wage and Salary Employment
Annual Percent Change



Source: Bureau of Labor Statistics, U.S. Department of Labor.

<u>*Unemployment Rate*</u>

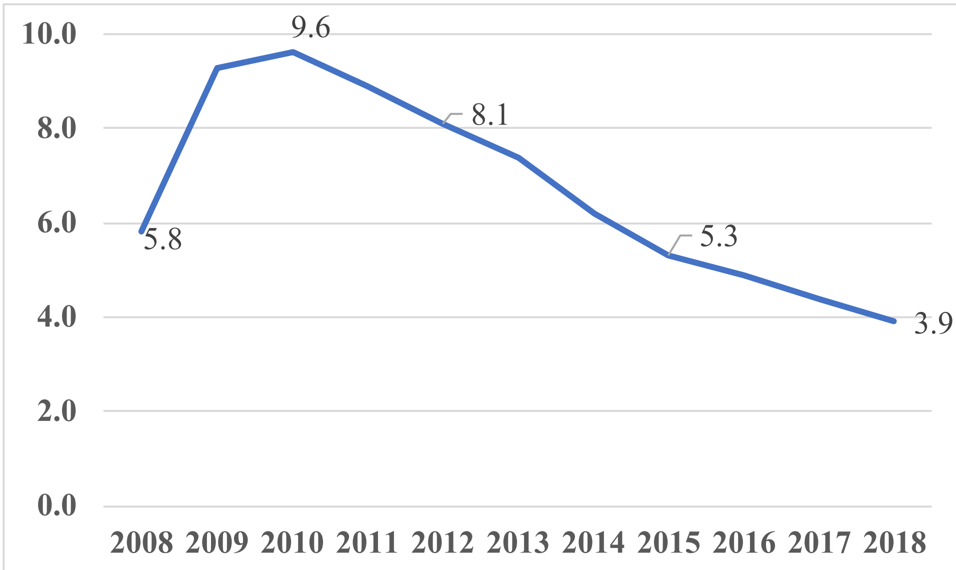
In September 2018 and again in November 2018, the national unemployment rate fell to 3.7 percent, the lowest monthly U.S. jobless rate since December 1969.

In 2018, the U.S. unemployment rate averaged 3.9 percent, the lowest calendar year national unemployment rate since 1969.

After fluctuating between 3.8 percent and 4.0 percent in mid-2018, the monthly U.S. unemployment rate fell to 3.7 percent in September and again in November. The 3.7 percent rate represents the lowest monthly U.S. unemployment rate since December 1969.

The annual U.S. unemployment rate has fallen in each of the past eight years. After peaking at a 28-year high of 9.6 percent in 2010, the national unemployment rate fell to 8.9 percent in 2011 and by 2017 fell to 4.4 percent. In 2018, the U.S. unemployment rate averaged 3.9 percent -- the lowest calendar year U.S. jobless rate since 1969.

United States. Unemployment Rate
2008-2018



The four-week average of initial unemployment claims has remained below 300,000 for 198 consecutive weeks – the longest streak of sub-300,000 readings since 1970, when the U.S. workforce and population were much smaller than currently.

<u>Housing Market</u>

<u>House Construction and Sales</u>

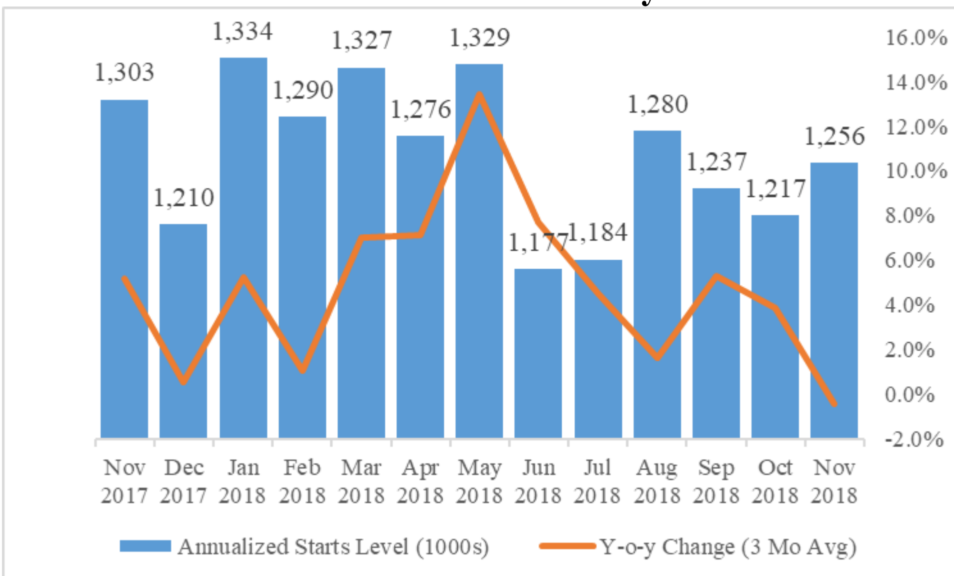
Despite gains over the past eight years, housing starts remain at historically low levels.

Mortgage rates have risen modestly since late 2017.

Since the Great Recession, calendar year **housing starts** have strengthened but remain at a historically low level. Compared to the 2009 record annual low, year-to-date 2018 housing starts through November have averaged 128.2 percent higher. Year-to-date 2018 housing starts are 38.9 percent below the 2005 level (the highest annual level since 1972) and are 7.8 percent lower than average annual housing starts in the 1990s (pre-boom).

November 2018 marked the 44th straight month in which housing starts were above 1.0 million units at an annualized rate and also marked the 26th straight month in which annualized starts exceeded 1.1 million units. Year-to-date through November, average 2018 monthly housing starts are up 4.7 percent. However, year-over-year housing start changes have been trending downward recently. While the three-month average was up more than five percent from the previous year in five of the first six months of 2018, the average has been up more than five percent in only one of the past five months. In addition, while the average was up 5.3 percent yo-y in September, by November the three-month average was down 0.4 percent. (U.S. Census Bureau).

Housing Starts Growth Down from Mid-2018
Levels Remain Historically Low



In 2017, **new home sales** rose 9.3 percent to 613,000 – marking the sixth straight annual sales increase. Through October 2018, average monthly sales are up 2.7 percent from a year ago. However, while the three-month average sales rate was up 6.0 percent or more from a year earlier in the first five months of 2018, the average was up by less than 6.0 percent in each of the five most recently available months. Most recently, the October 2018 three-month average sales rate was down 4.5 percent from a year ago. (U.S. Census Bureau). The monthly existing home sales rate was down from a year earlier in each of the nine most recent months available (March 2018-November 2018) (National Association of Realtors).

Weighed down by poor housing affordability, the **National Association of Home Builders Housing Market Index** has fallen sharply (14 points) since May. However, at 56, the December Index remains in positive territory (above 50).

Mortgage Interest Rates

Compared to a year ago, the 30-year fixed mortgage rate is up 0.56 of a percentage point.

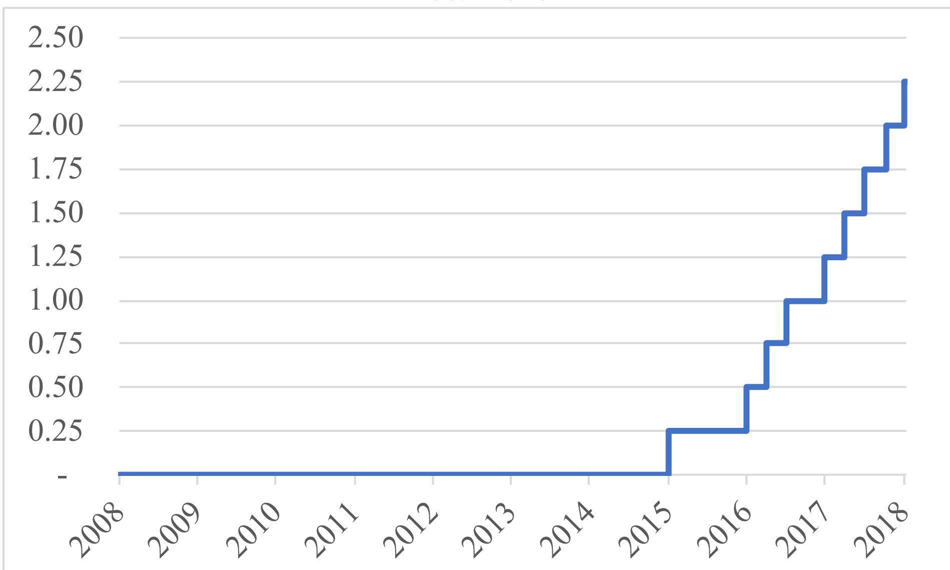
At the time of the May 2018 Consensus Conference, the most recent available **30-year fixed mortgage rate** stood at 4.47 percent (mid-April). (FreddieMac) Between mid-April and mid-August, the rate fluctuated between 4.5 percent and 4.7 percent. The mortgage rate then steadily rose to 4.90 percent by mid-October. After falling slightly, the rate then rose to 4.94 percent by mid-November – the highest rate in nearly eight years. However, over the past four weeks, the mortgage rate has fallen with the rate at 4.55 percent at end of December 2018. Compared to a year earlier, the end-year 2018 30-year mortgage rate is up 0.56 of a percentage point.

Monetary Policy

Moving forward, the FOMC will make additional gradual interest rate hikes. However, monetary policy will likely remain substantially data dependent.

After maintaining the target federal funds rate range at a record low 0.00 to 0.25 percent for seven years, the Federal Open Market Committee (FOMC) raised the target range 25 basis points in December 2015 and raised the range an additional 25 basis points in December 2016. In 2017, the FOMC raised the target range 25 basis points three times. In 2018, the FOMC raised the target range four times – increasing the range by 25 basis points four times (at each of the meetings in March, June, September and December). Thus, as of December 2018, the federal funds rate target range stands at 2.25-2.50 basis points.

Federal Funds Interest Rate (lower limit)
2009-2018



Source: Board of Governors of the United States Federal Reserve System

As for the timing and magnitude of future rate increases, FOMC stated that future rate hikes will likely be necessary:

> Consistent with its statutory mandate, the Committee seeks to foster maximum employment and price stability. The Committee judges that some further gradual increases in the target range for the federal funds rate will be consistent with sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee's symmetric 2 percent objective over the medium term. The Committee judges that risks to the economic outlook are roughly balanced, but will continue to monitor global economic and financial developments and assess their implications for the economic outlook. (FOMC Statement, December 19, 2018)

Fed Chairman Powell still expects healthy economic growth in 2019. While Powell assented that, "We have seen developments that may signal some softening, relative to what we were expecting a few months ago," he stated that "these developments haven't fundamentally altered the outlook." However, the median number of FOMC members' expected rate hikes in 2019 fell from three times in September to two times in December.

Nevertheless, future Fed actions will remain substantially dependent on future data releases and readings on financial and international developments:

> In determining the timing and size of future adjustments to the target range for the federal funds rate, the Committee will assess realized and expected economic conditions relative to its maximum employment objective and its symmetric 2 percent inflation objective. This assessment will take into account a wide range of information, including measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial and international developments. (FOMC Statement, December 19, 2018).

In October 2017, the Federal Reserve began a very gradual unwinding of the massive long-term securities holdings the Fed amassed in three rounds of quantitative easing between late 2008 and late 2014. The FOMC ended its quantitative easing program in October 2014. However, the FOMC continued, for three years, to reinvest all principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities and to roll over all maturing Treasury securities at auction. In October 2017, the Committee initiated a balance sheet normalization program. Under the program, the FOMC is very gradually reducing its longer-term holdings (Treasury securities and mortgage-backed securities) by not rolling over/reinvesting a portion of maturing Treasury securities/mortgage-backed securities.

Largely as a result of the quantitative easing program, Federal Reserve assets rose from $0.9 trillion in August 2007 to $4.5 trillion in January 2015. Thus far, the Federal Reserve's very gradual unwinding of the quantitative easing program has reduced the Federal Reserve's balance sheet to $4.1 trillion.

Fiscal Policy

The stimulus provided by recent federal tax cuts and spending increases will begin fading over the forecast horizon.

In late December 2017, the House and Senate passed and the President signed the Tax Cuts and Jobs Act of 2017 (TCJA). The Congressional Budget Office and Joint Committee on Taxation estimated that the TCJA would reduce federal government revenues by $1.7 trillion and reduce federal outlays by $200 billion over the next ten years – increasing the deficit by $1.5 trillion over the next ten years.

In March 2018, Congress passed and the President signed the Bipartisan Budget Act of 2018. The Act increased spending caps for fiscal years 2018 and 2019 by nearly a combined $300 billion above spending caps – a dramatic spending increase especially with a U.S. economy near full employment.

The federal tax cut and spending increase legislation played a substantial role in boosting the U.S. economy in 2018. However, moving forward, the legislation's impact will lessen, especially over the second half of the 2019-2021 forecast horizon.

Inflation

In all but one year, the overall personal consumption expenditures (PCE) price index inflation remained below the Federal Reserve's target 2.0 percent level in each year between 2009 and 2017.

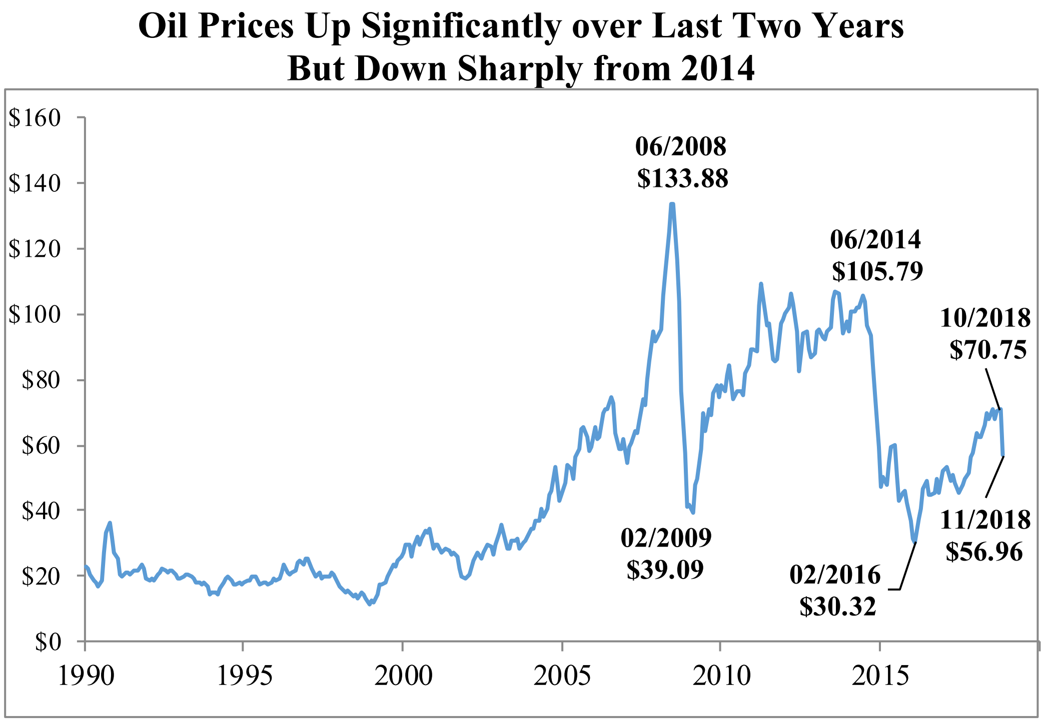
U.S. consumer price index inflation remains moderate. From 2013 to 2016, CPI inflation remained below 2.0 percent. In 2017, CPI inflation rose slightly above 2.0 percent.

However, inflation may accelerate in the near future with tighter labor markets.

Between 2009 and 2016, the **personal consumption expenditures (PCE) price index**, which the Federal Reserve emphasizes in evaluating whether the U.S. economy is meeting the Fed's 2.0 percent inflation target, grew less than 2.0 percent each year except 2011. The core PCE price index inflation, which excludes the direct impact of volatile food and energy prices, stayed below 2.0 percent in each year between 2009 and 2017. In 2017, PCE price inflation was 1.8 percent and the core PCE price inflation was 1.6 percent. On average through November, the overall PCE price index is up 2.1 percent in 2018 while the core PCE price index is up 1.9 percent. Most recently in November 2018, the PCE price index was up 1.8 percent from a year ago and the core PCE price index was up 1.9 percent from last November (Bureau of Economic Analysis).

Inflation, as measured by the overall **U.S. Consumer Price Index** (CPI), has risen each year since 2009. Inflation has remained moderate in recent years but has accelerated recently. In each year between 2013 and 2016, CPI inflation remained below 2.0 percent. However, in 2017, inflation accelerated to 2.1 percent. In addition, in each of the past 13 months, the CPI has been up by more than 2.0 percent from a year ago. The core CPI (excluding food and energy) has been up slightly more than 2.0 percent from a year ago in each of the past nine months. (U.S. Bureau of Labor Statistics).

Oil prices rose substantially from February 2016 to October 2018. In 2017, the average price of oil rose 17.9 percent. Still more, through October, the average 2018 price of oil was up 35.6 percent from a year ago (Federal Reserve Bank of St. Louis). However, the price of oil fell sharply in November 2018 – falling from $70.75 to $56.96. Most recently, December 2018 oil prices have averaged $49.32 through December 27. The *daily* price of oil dropped to $44.48 on December 18. (U.S. Energy Information Administration). Oil (and gasoline) prices may rebound going into 2019 as several major producers work to curtail production.



Source: Federal Reserve Bank of St. Louis. Price per Barrel, West Texas Intermediate Oil.

Major Economic Indices

Institute for Supply Management indices continued to indicate growth in the manufacturing sector (28 straight months) and non-manufacturing sectors (107 straight months) as well as the overall economy (116 straight months).

Compared to a year ago, end-year 2018 consumer sentiment is up but CEO confidence is down sharply.

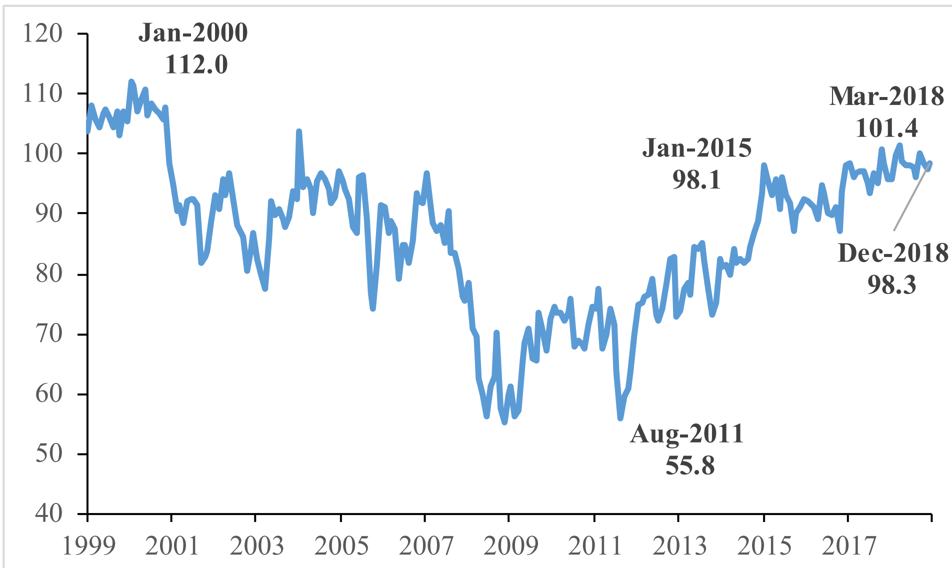
Since the May 2018 Consensus Conference, the stock market is down substantially (-7.9 percent, through January 4, 2019).

The **ISM (Institute for Supply Management) manufacturing index**, known as the PMI (Purchasing Management Index) has fluctuated since April (the month directly prior to the May 2018 Consensus Conference). Through November, the PMI remained above its April 2018 reading – ranging between 57.7 and 61.3. The PMI fell below its April 2018 reading in December 2018 – falling to 54.1. However, December 2018 marked the 28th straight month of an expanding manufacturing sector. (A PMI above 50.0 indicates an expanding sector). The December 2018 PMI signaled an expanding *overall* economy for the 116th consecutive month.

Since the May Consensus Conference, the **ISM non-manufacturing index (NMI)** has fluctuated between 55.7 and 61.6. In December, the NMI fell from November to 57.6. The December 2018 NMI signaled the 107th straight month of an expanding service sector.

Since the May 2018 Consensus Conference, the **University of Michigan index of consumer sentiment** has remained at historically strong levels --fluctuating between 96.2 and 100.1. After falling to 97.5 in November, the index rose to 98.3 in December. Compared to a year ago, December 2018 consumer sentiment is up 2.4 points.

Consumer Sentiment Remains At Historically Strong Levels



Source: University of Michigan Survey of Consumers.

Between 2016Q4 and 2018Q3, the **Conference Board Measure of CEO Confidence Index** had remained in positive territory (above 50). However, in each of the three most recently available quarters (2018Q2, 2018Q3 and 2018Q4), CEO Confidence fell from the previous quarter – dropping 23 points over the three quarters. As a result, CEO Confidence dropped into negative territory to 42, matching its 2012Q3 reading as the index's lowest level since 2009Q1, when the index stood at 30. Compared to a year ago, the 2018Q4 reading of 42 was down sharply (-21 points).

The equities markets have worsened considerably since the May 2018 Consensus Conference as the Dow Jones Industrial Index and S&P 500 have fallen from recent highs. Another measure, the **Wilshire 5000 Index**, is a weighted index of all actively traded U.S. stocks and represents the broadest index of the total value of the U.S. stock market. Following the May 2018 Conference, the Wilshire 5000 Index edged upward through mid-September. Between the May Conference and the Wilshire Index's mid-September peak, the Index rose 7.6 percent to a new all-time high. However, the Index fell sharply through the end of October. While posting two partial (and temporary) rebounds since October, the Index fell to its lowest level in over 22 months on December 24. The Index reported gains in three of the four final 2018 trading days. As a result, the year-end index's 2018 closing value was down 15.5 percent from its September peak and down 9.1 percent since the May Conference. In the first week of 2019 trading, the Wilshire experienced wide swings. Consequently, as of January 4, 2019, the Wilshire 5000 Index was down 7.9 percent from its May 2018 Conference level.

The **ECRI weekly leading index growth rate** has decelerated substantially since the May 2018 Consensus Conference. Between mid May 2018 and late November 2018, the rate steadily slowed from positive 4.1 percent to *negative* 4.1 percent. After improving slightly in the first week of December, the index worsened over the three remaining December weeks. Consequently, the index's growth rate ended 2018 at negative 5.3 percent – the growth rate's worst pace in nearly seven years.

In November 2018, **industrial production** recorded its fifth monthly increase in the past six months. Compared to a year ago, November industrial production is up 3.9 percent. Following the May 2018 Consensus Conference, year-over-year industrial production increases accelerated through September—rising to 5.6 percent growth from a year earlier – the fastest year-over-year growth in nearly eight years. Year-over-year growth slowed in October to 3.8 percent before rising to 3.9 percent in November.

Following 24 straight months of year-over-year declines, the **capacity utilization rate** has risen from the prior year in each of the past 21 straight months (March 2017-November 2018). November 2018 capacity utilization is up 1.4 points from last November. The average 2018 capacity utilization rate through November was up 1.9 points from last year – compared with a 0.8 of a point increase in calendar year 2017.

Through November, year-to-date average 2018 **retail sales** were up 5.2 percent – compared with calendar year 2017 growth of 4.7 percent. Excluding gasoline stations, average 2018 retail sales through November were up 4.4 percent compared with calendar year 2017 growth of 4.3 percent. Most recently, November 2018 total retail sales were up 4.2 percent from a year ago while retail sales excluding gas stations were up 3.9 percent.

Vehicle Sales and Production

Year-to-date through November 2018, light vehicle sales averaged a 17.1-million-unit annualized pace – essentially matching the average pace over the first 11 months of 2017.

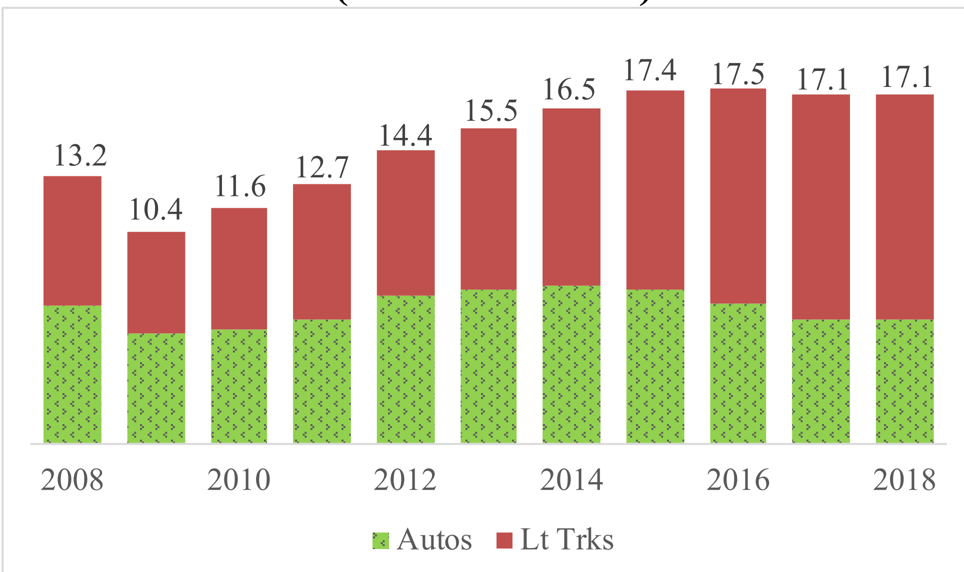
Light truck sales comprised 69.1 percent of light vehicle sales year-to-date through November 2018.

Year-to-date through November 2018, national vehicle production is down 2.3 compared with 2017.

In 2015, **U.S. light vehicle sales** rose to a then record high of 17.40 million units – slightly exceeding the previous record of 17.35 million units set in 2000. In 2016, light vehicle sales rose

– although slightly (0.4 percent) -- to a new record high: 17.46 million units. Annual light vehicle sales fell in 2017, but, at 17.1 million units, sales remained strong. Through November 2018 light vehicle sales have averaged 17.1 million units – up a slight 0.1 percent from last year. In November 2018, light vehicle sales exceeded a 16.0-million-unit annual rate for the 57th straight month.

Light Vehicle Sales at Historically High Levels (millions of units)



Note: 2008-2017 values equal the sum of non-seasonally adjusted monthly sales for all twelve months of each year. 2018 values equal the average of seasonally adjusted annual rates for January 2018-November 2018.

Light truck sales share of the light vehicle sales market has continued to grow. In 2017, light truck sales share of light vehicle sales rose 3.9 percentage points to yet another new record high of 64.5 percent. November 2018 marked the 32nd straight month that light trucks sales share exceeded 60.0 percent. Year-to-date, 2018 light truck sales account for 69.1 percent of light vehicle sales.

While bringing vehicle makers higher profitability per unit, the record high light truck sales share exposes makers to greater downward risks from economic slowdowns and higher fuel prices.

U.S. vehicle production increased each year from 2010 to 2016. By 2016, production was up 113.8 percent from 2009. In 2016, national vehicle production was up to 12.3 million units – its highest production level since 2000. However, in 2017, U.S. vehicle production fell 8.3 percent. Year-to-date through November, 2018 national vehicle production is down 2.3 percent from last year.

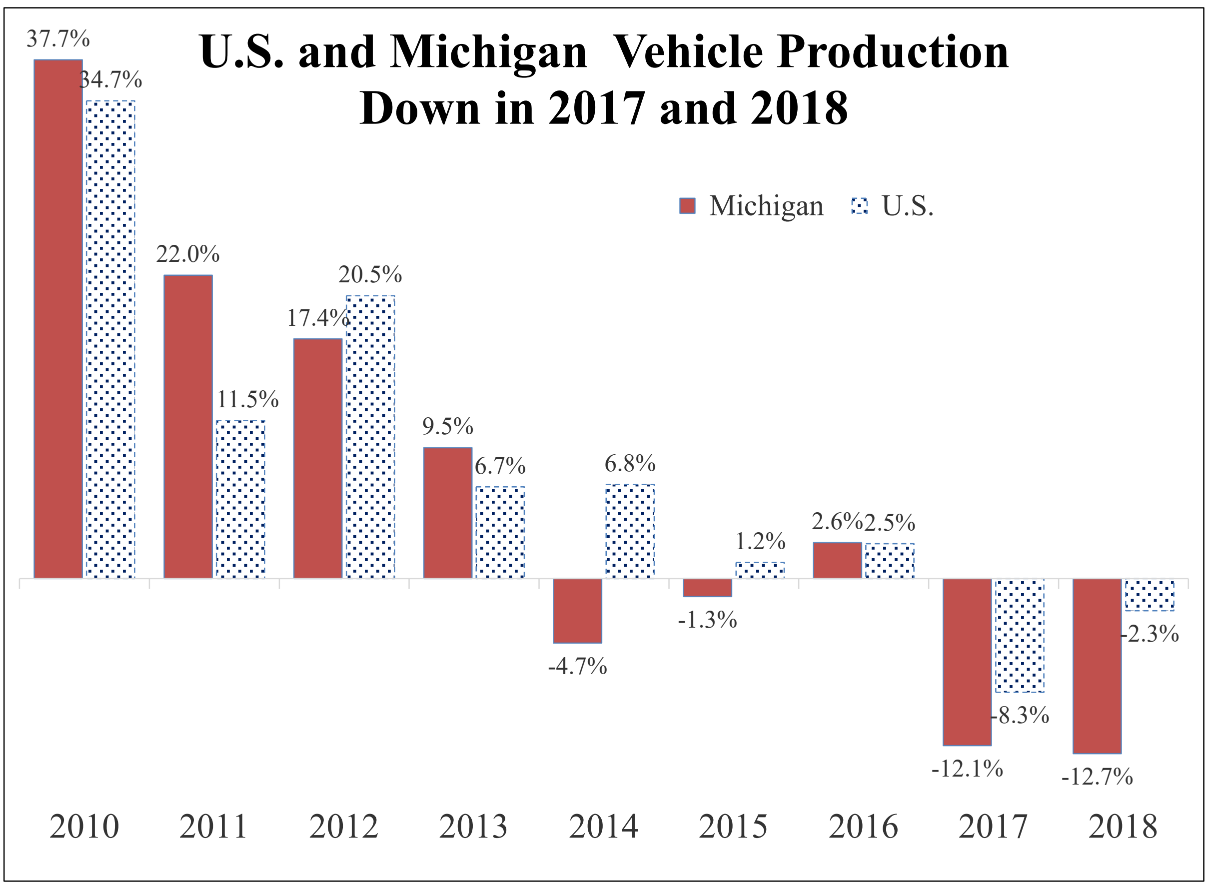
Current Michigan Economic Conditions

Vehicle Production

In 2017 and 2018 (year-to-date through November), Michigan vehicle production and Michigan's share of U.S. vehicle production fell.

In 2017, at 2.1 million units, **Michigan vehicle production** fell 12.1 percent. Through the first 11 months of 2018, Michigan vehicle production is down 12.7 percent compared to a 2.3 percent decline nationally. Retooling of Michigan plants and a switch to producing light trucks from cars account for the recent decline in production.

In 2013, **Michigan's share of U.S. vehicle production** rose to 22.3 percent. However, in 2014, the State's share of U.S. vehicle production fell 2.4 percentage points to 19.9 percent. In 2015, Michigan's share of national vehicle production fell an additional 0.5 of a percentage point to 19.4 percent, where it remained in 2016. However, in 2017, Michigan's share of national vehicle production fell to 18.6 percent. Through November 2018, Michigan's share was down 2.0 points to 16.6 percent.



Automotive News and Michigan Department of Treasury. 2018 percent change represents the percent change in production from the period January 2017-November 2017 to the period January 2018-November 2018. All other years represent percent change in production for all 12 months of each calendar year.

Employment

Michigan's labor market is strong and an increasing number of residents are finding work.

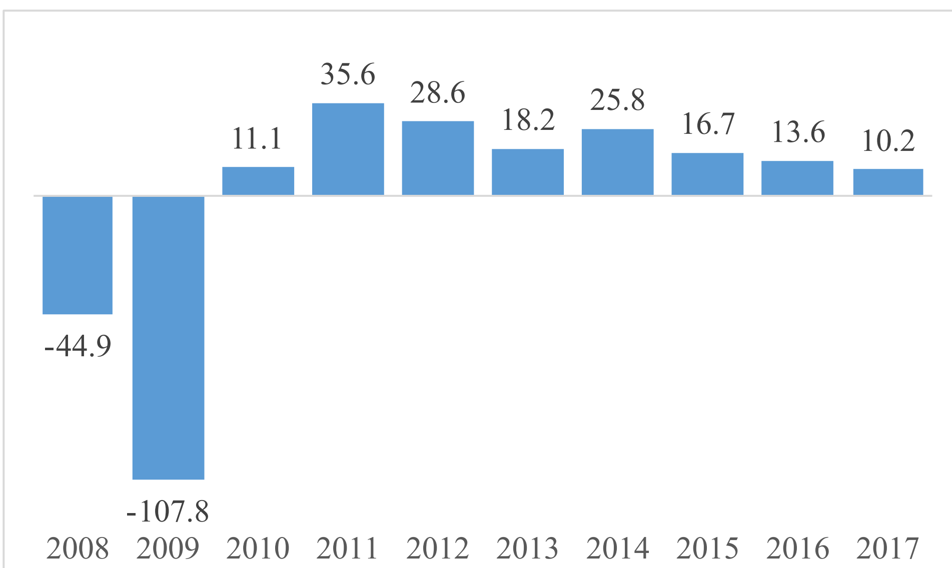
In 2018, Michigan wage and salary employment likely increased for the eighth straight year.

In 2017, **Michigan wage and salary employment** rose for a seventh straight year with 1.2 percent growth. Through the first eleven months of 2018, average wage and salary employment is up 1.3 percent from the first 11 months of 2017.

Rising by a total of 507,700 jobs between 2010 and 2017, Michigan wage and salary employment increased 13.1 percent (the 16th fastest percent growth among U.S. states). In October 2018, Michigan employment rose to 4.442 million jobs, the State's highest monthly employment level since January 2003. In November, Michigan employment fell slightly (-900 jobs). However, compared to a year earlier, November 2018 Michigan employment was up by 51,900 jobs (1.2 percent). The 1.2 percent increase ranks 35th fastest among U.S. states.

Michigan's overall wage and salary employment has increased 15.7 percent **since the end of the Great Recession** (June 2009). The 15.7 percent growth represents the 16th strongest growth rate among all U.S. states.

Michigan Manufacturing Employment Change (thousands of jobs)



Source: Bureau of Labor Statistics, U.S. Department of Labor.

Manufacturing employment in Michigan increased over the past eight years, by 159,800 total jobs. Manufacturing employment accounted for 29.3 percent of the overall State employment increase over the past seven years, even while comprising only 12.1 percent of the overall *level* of base year 2010 Michigan wage and salary employment.

Since 2010, Michigan's economy has become increasingly more diverse and less dependent upon the manufacturing sector. In 2017, manufacturing employment accounted for 19.5 percent of the overall annual State wage and salary employment increase. In addition, year to date through November 2018, manufacturing employment accounted for only 11.3 percent of the overall employment increase.

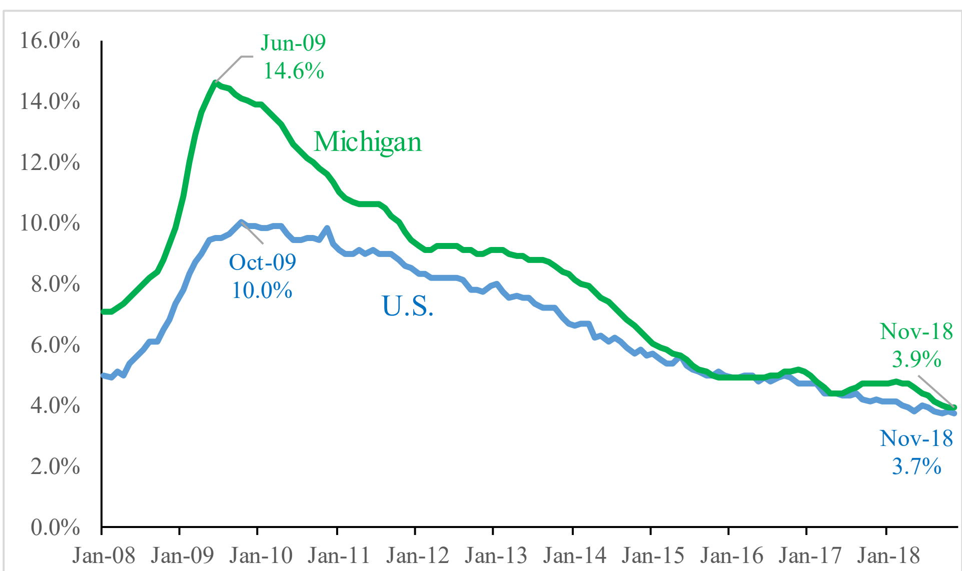
Unemployment Rate

Michigan's unemployment rate has fallen each year since 2009. Year-to-date through November, the unemployment rate has averaged 4.4 percent in 2018.

The gap between the Michigan unemployment rate and the U.S. unemployment stood at 0.2 of a percentage point in November 2018.

In 2009, **Michigan's unemployment rate** rose to 13.7 percent – the State's highest rate since 1983 when the rate stood at 14.4 percent. However, the State's unemployment rate has decreased each year since. Over the past eight years, Michigan's unemployment rate dropped a combined 9.1 percentage points. In 2017, the Michigan unemployment rate fell 0.4 of a percentage point to 4.6 percent, the State's lowest annual rate since 2000. Through the first eleven months of 2018, the Michigan unemployment rate has averaged 4.4 percent.

Since the Great Recession
Michigan's Unemployment Rate Has Dropped Sharply



Source: Michigan Bureau of Labor Market Information and the U.S. Bureau of Labor Statistics.

During the Great Recession (December 2007-June 2009), the **gap between Michigan's unemployment rate and the U.S. unemployment rate** rose to 5.1 percentage points. Within a year after the Great Recession, the gap shrank to 3.2 percentage points and within two years, the gap fell to 1.5 percentage points. The gap trended downward through early 2012, falling to 0.8 of a percentage point. The gap then trended upward through late 2013, rising to 1.6 percentage points in December 2013. The gap fell steadily through mid-2015. Between May 2015 and October 2016, the gap ranged narrowly between +0.20 of a percentage point and -0.20 of a percentage point.

After spiking to 0.50 of a percentage point in November 2016, the unemployment rate gap fell through early 2017. Between March 2017 and August 2017, the gap ranged narrowly between 0.0 of a percentage point and 0.20 of a percentage point. Between September 2017 and January 2018, the gap ranged narrowly between 0.5 of a percentage point and 0.6 of a percentage point between. In February 2018, the gap rose to 0.70 of a percentage point, where it remained in March 2018. Similarly, in April 2018, the gap increased to 0.80, where it stayed in May 2018.

In June 2018, the unemployment rate gap dropped to 0.4 of a point and was unchanged in July. In August 2018, the gap decreased to 0.30 of a percentage point, where it remained in September. The gap fell to 0.1 of a percentage point in October before rising to 0.2 of a percentage point in November 2018.

Compared to the number of Michigan unemployed at the end of the Great Recession (June 2009), November 2018 unemployment was down by 533,300 persons.

Michigan's labor force fell every year between 2006 and 2012, inclusive. Over the seven years, the State's annual labor force dropped a combined 410,400 persons. However, in four of the most recent five years, the State's annual labor force increased. On net, calendar year Michigan's labor force rose 211,100 persons (4.5 percent) over the five years.

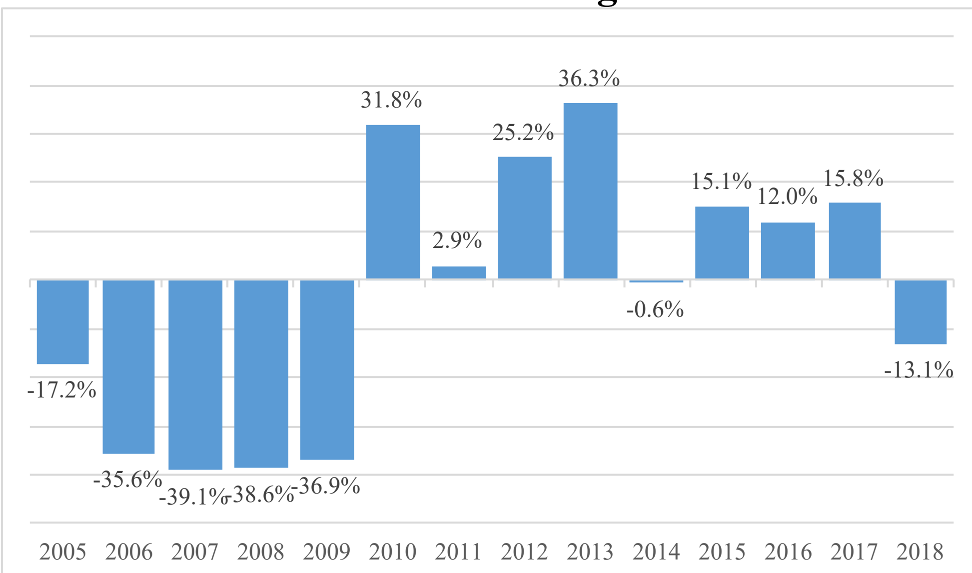
Housing Market

In 2017 Michigan housing authorizations were up 15.8 percent. However, through October 2018 Michigan housing authorizations are down 13.1 percent.

The share of mortgage properties underwater (negative equity) in Michigan is substantially higher than the national average.

In 2017, Michigan housing unit authorizations increased 15.8 percent while authorizations increased 6.2 percent nationally. However, through October 2018, Michigan housing authorizations are down 13.1 percent, compared to a 4.7 percent increase nationally.

Michigan Housing Unit Authorizations Percent Change



Note: 2018 percent change represents the percent change in authorizations from the period January 2017-October 2017 to the period January 2018- October 2018. All other years represent percent change in authorizations for all 12 months of each calendar year.

Source: U.S. Census Bureau.

The **share of mortgage properties underwater (negative equity)** in Michigan is substantially higher than the national average. In the third quarter of 2018, nationwide, 4.1 percent of residential properties with mortgages were underwater. In Michigan, 6.4 percent of such properties were underwater – ranking Michigan 12th highest among U.S. states. (CoreLogic)

Personal Income

Michigan total personal income has continued to grow but grew more slowly than the national average the past two years.

Since the Great Recession, Michigan per capita personal income has grown faster than the national average.

Through the first three quarters, average 2018 **Michigan total personal income** grew 3.4 percent from average 2017 Michigan total personal income, compared with 4.4 percent nationally. Growth in Michigan's average total personal income from 2017Q1-2017Q3 to 2018Q1-2018Q3 ranked 37th among the 50 states.

In 2017, Michigan total personal income increased 3.5 percent, which was below the U.S. growth rate of 4.4 percent and was the 35th strongest rate in the nation. In both 2015 and 2016, Michigan's total personal income growth rate had been higher than the national average.

Over the past eight years, Michigan personal income has grown each year. As a result, compared with 2009 personal income, 2017 Michigan personal income is up 37.0 percent, ranking 19th nationally.

Of Michigan's 3.5 percent growth in total personal income in 2017, net earnings, which accounted for 2.7 percentage points of the overall 3.5 percentage point increase, drove most of the growth rate. Dividends, interest, and rent accounted for 0.7 percentage points of overall growth and transfer receipts were 0.1 of a percentage point.

In 2017, **total earnings** grew $13.2 billion in Michigan for all industries. This was led by the manufacturing sector increase ($3.2 billion), which accounted nearly one-fourth of the overall increase. Durable manufacturing alone accounted for $2.9 billion of the manufacturing increase. The management of companies and enterprises sector accounted for the second largest share of the total earnings increase (+1.7 billion), followed by the construction sector (+1.5 billion).

Between the periods 2017Q1-Q3 and 2018Q1-Q3, the manufacturing sector again accounted for the largest share of the increase in three-quarter average of total earnings – accounting for nearly one-fifth (19.2 percent) of the overall increase. The professional, scientific and technical services sector comprised the second largest industry share (13.6 percent) while the construction sector accounted for the third largest share of the overall increase (10.1 percent).

In 2017, Michigan's annual **per capita income** ranked 31st among U.S. states – matching its 2016 ranking. Michigan's 2017 annual per capita income ($46,201) equaled 89.5 percent of U.S. annual per capita personal income ($51,640). Between 2016 and 2017, Michigan's annual per capita income rose 3.2 percent (ranking 32nd among the 50 states). Nationally, annual per capita income rose 3.6 percent in 2017. Between 2009 (the year in which the Great Recession ended) and 2017, Michigan's per capita income increased 36.1 percent – ranking 6th among U.S. states and greater than the national increase (31.5 percent).

Between 2017Q3 and 2018Q3, Michigan's quarterly per capita income rose 3.4 percent – ranking 22nd among the 50 states. Nationally, per capita income increased 3.7 percent between 2017Q3 and 2018Q3.

SECTION III

Administration Economic Forecast

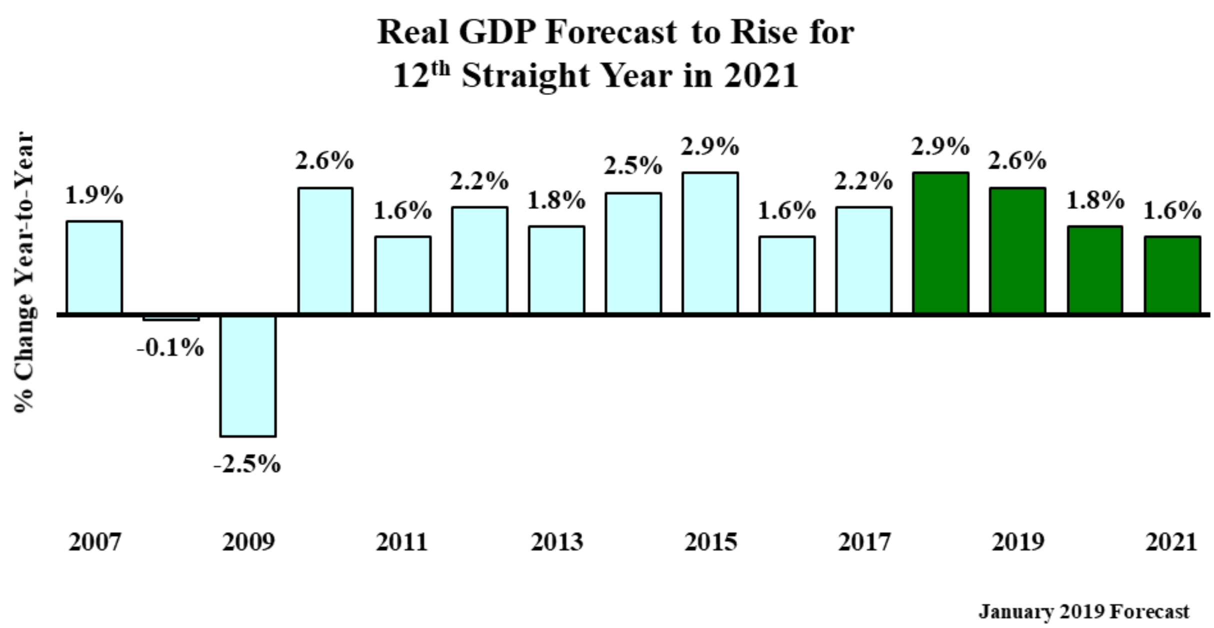
Administration Economic Forecast Summary

Table 1 (next page) provides a one-page summary table of the Administration forecast of the U.S. and Michigan economies.

2019, 2020 and 2021 U.S. Economic Outlook

Summary

Real (inflation adjusted) GDP rose 2.2 percent in 2017 and is estimated to have grown 2.9 percent in 2018, which would mark the ninth straight year of annual growth. Real GDP is expected to increase 2.6 percent in 2019, 1.8 percent in 2020 and 1.6 percent in 2021.



Source: Bureau of Economic Analysis, U.S. Department of Commerce, and Administration Forecast, January 2019.

In 2017, light vehicle sales fell to 17.1 million units. Light vehicle sales are estimated to have increased slightly to 17.2 million units in 2018. Light vehicle sales are then forecast to decline to 16.9 million units in 2019, 16.6 million units in 2020 and 16.5 million units in 2021.

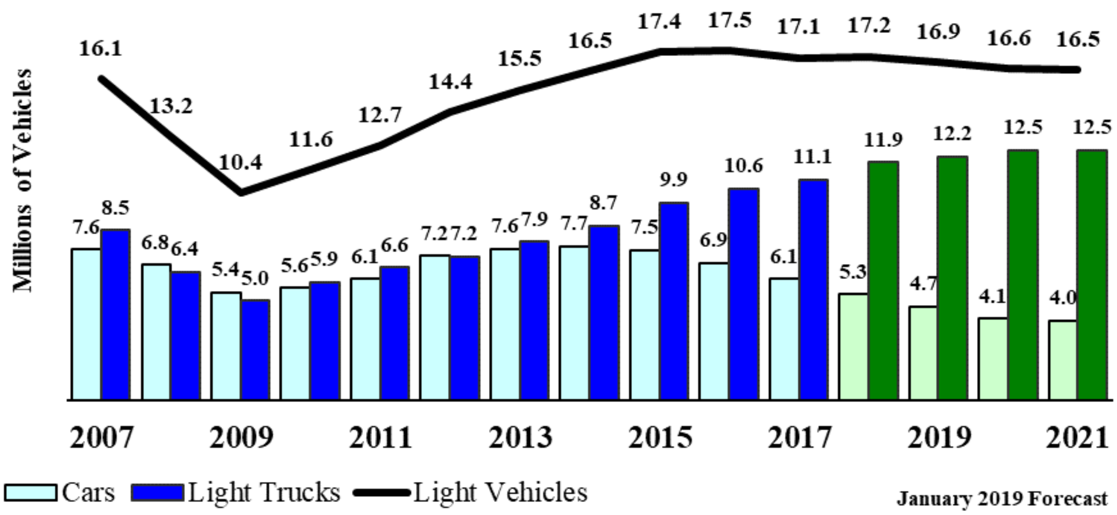
Table 1

Administration Economic Forecast

January 2019

	Calendar 2017 Actual	Percent Change from Prior Year	Calendar 2018 Forecast	Percent Change from Prior Year	Calendar 2019 Forecast	Percent Change from Prior Year	Calendar 2020 Forecast	Percent Change from Prior Year	Calendar 2021 Forecast	Percent Change from Prior Year
United States										
Real Gross Domestic Product (Billions of Chained 2012 Dollars)	$18,051	2.2%	$18,574	2.9%	$19,057	2.6%	$19,400	1.8%	$19,710	1.6%
Implicit Price Deflator GDP (2012 = 100)	107.9	1.8%	110.4	2.3%	112.7	2.1%	115.3	2.3%	118.0	2.3%
Consumer Price Index (1982-84 = 100)	245.120	2.1%	251.218	2.5%	256.159	2.0%	261.979	2.3%	267.837	2.2%
Consumer Price Index - Fiscal Year (1982-84 = 100)	243.841	2.1%	249.749	2.4%	254.870	2.1%	260.539	2.2%	266.370	2.2%
Personal Consumption Deflator (2012 = 100)	106.1	1.8%	108.3	2.1%	110.4	1.9%	112.7	2.1%	115.1	2.1%
3-month Treasury Bills Interest Rate (percent)	0.9		1.9		2.6		3.0		3.5	
Unemployment Rate - Civilian (percent)	4.4		3.9		3.6		3.6		3.7	
Wage and Salary Employment (millions)	146.624	1.6%	149.041	1.6%	151.280	1.5%	152.790	1.0%	153.860	0.7%
Housing Starts (millions of starts)	1.203	2.5%	1.258	4.6%	1.282	1.9%	1.304	1.7%	1.337	2.5%
Light Vehicle Sales (millions of units)	17.1	-1.9%	17.2	0.4%	16.9	-1.7%	16.6	-1.8%	16.5	-0.6%
Passenger Car Sales (millions of units)	6.1	-11.5%	5.3	-12.8%	4.7	-11.3%	4.1	-12.8%	4.0	-2.4%
Light Truck Sales (millions of units)	11.1	4.4%	11.9	7.6%	12.2	2.5%	12.5	2.5%	12.5	0.0%
Big 3 Share of Light Vehicles (percent)	42.0		41.5		41.5		41.5		41.5	
Michigan										
Wage and Salary Employment (thousands)	4,371	1.2%	4,428	1.3%	4,464	0.8%	4,495	0.7%	4,522	0.6%
Unemployment Rate (percent)	4.6		4.4		3.9		3.9		3.8	
Personal Income (millions of dollars)	$460,270	3.5%	$477,760	3.8%	$495,437	3.7%	$515,255	4.0%	$535,865	4.0%
Real Personal Income (millions of 1982-84 dollars)	$202,855	1.4%	$205,382	1.2%	$208,875	1.7%	$212,499	1.7%	$216,328	1.8%
Wages and Salaries (millions of dollars)	$231,748	4.2%	$241,945	4.4%	$250,655	3.6%	$260,681	4.0%	$270,587	3.8%
Detroit Consumer Price Index (1982-84 = 100)	226.896	2.1%	232.620	2.5%	237.193	2.0%	242.474	2.2%	247.710	2.2%
Detroit CPI - Fiscal Year (1982-84 = 100)	225.517	2.0%	231.441	2.6%	235.988	2.0%	241.193	2.2%	246.381	2.2%

Vehicle Sales Fall Slightly Over Forecast



Source: Bureau of Economic Analysis, U.S. Department of Commerce, and Administration Forecast, May 2018.

The **U.S. unemployment rate** has fallen in each of the past eight years with the unemployment rate dropping from a near record high 9.6 percent in 2010 to 3.9 percent in 2018. The U.S. rate is forecast to fall to 3.6 percent in 2019 and remain unchanged at 3.6 percent in 2020. In 2021, the national unemployment rate is expected to rise to 3.7 percent.

U.S. wage and salary employment increased 1.6 percent in both 2017 and 2018. U.S. employment growth is forecast to slow to 1.5 percent in 2019, 1.0 percent in 2020 and 0.7 percent in 2021. The U.S. employment level rose to a new record annual high each year from 2014 to 2018. With forecasted increases, calendar year 2021 national employment is expected to be 11.5 percent above the pre-2014 peak employment level.

U.S. consumer price inflation accelerated to 2.1 percent in 2017 and to 2.5 percent (estimated) in 2018. Inflation is forecast to slow to 2.0 percent in 2019 and then accelerate to 2.3 percent in 2020. In 2021, inflation is expected to slow to 2.2 percent. The personal consumption price deflator inflation rate is projected to accelerate from 1.8 percent in 2017 to 2.1 percent in 2021.

In 2016, the **short-term Treasury bill rate** rose to 0.3 percent. As a result of increases in the federal funds rate, the short-term Treasury bill rate increased to 0.9 percent in 2017 and to an estimated 1.9 percent in 2018. The Treasury bill rate is forecast to rise to 2.6 percent in 2019, 3.0 percent in 2020 and 3.5 percent in 2021 – which would be the highest short-term Treasury bill rate since 2007, when the rate stood at 4.4 percent.

Corporate interest rates rose to 3.7 percent in 2017. After rising to an estimated 3.9 percent in 2018, the corporate rate is projected to increase to 4.3 percent in 2019, 4.5 percent in 2020 and 4.6 percent in 2021.

The **30-year fixed mortgage rate** fell to 3.65 percent in 2016. Mortgage rates rose to 4.0 percent in 2017 and are estimated to have increased to 4.6 percent in 2018. Mortgage rates are forecast to rise to 5.0 percent in 2020, 5.2 percent in 2020 and 5.4 percent in 2021.

Throughout the forecast horizon, the national housing market is expected to strengthen modestly over the forecast, and housing starts are forecast to increase each year. Consequently, **housing starts** in 2021 (1.34 million units) are expected to be 11.1 percent higher than starts in 2017. Nevertheless, 2021 starts will remain well below the average 1.7 million annual starts in the ten years before the housing bust.

Assumptions

After rising an estimated 1.9 percent in 2018, **real (inflation-adjusted) federal government expenditures** are forecast to rise 2.9 percent in calendar year (CY) 2019, increase 0.3 percent in CY 2020 and then decline 0.5 percent in CY 2021.

The level of **nominal state and local government expenditures** are expected to increase 3.9 percent in 2019, 2.7 percent in 2020 and 2.6 percent in 2021.

The Fed raised the **federal funds rate** by 25 basis points four times in 2018. The Fed is expected to raise the rate by 25 basis points two times in each 2019 and 2020 and once in 2021. As a result, the federal funds rate is assumed to rise from a 2.25-2.50 percent range in late 2018 to 3.50-3.75 percent range in late 2021.

The **average savings rate** is estimated to have been 6.6 percent in 2018. The average rate is expected to remain at 6.6 percent in 2019, rise to 6.8 percent in 2020 and 6.9 percent in 2021.

Economic growth among Germany, United Kingdom, Japan, Canada and Mexico is estimated to have slowed considerably from 3.0 percent growth in 2017 to an estimated 1.9 percent growth annualized rate in 2018. The growth rate is forecast to slow to 1.8 percent in 2019 and 1.7 percent in both 2020 and 2021.

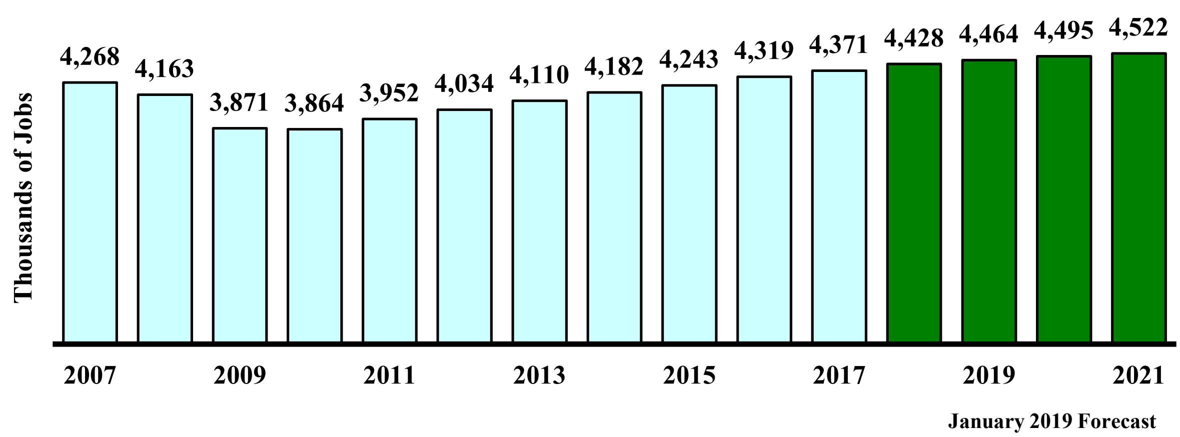
2019, 2020 and 2021 Michigan Economic Outlook

Michigan wage and salary employment reported its seventh straight annual employment increase in 2017. In 2017, Michigan employment increased 1.2 percent. State employment is estimated to have grown 1.3 percent in 2018 – marking its eighth consecutive increase. Michigan employment is forecast to rise 0.8 percent in 2019 and 0.7 percent in 2020 and 0.6 percent in 2021. At 4.52 million jobs, the forecasted Michigan wage and salary employment level in 2021 would represent the State's highest employment level since 2001. However, forecasted 2021 Michigan employment would remain 150,000 jobs (3.3 percent) below the State's peak annual employment set in 2000 (4.7 million jobs).

In 2017, **Michigan private non-manufacturing employment** rose 37,400 jobs and increased an estimated 46,400 jobs in 2018. Private non-manufacturing employment is forecast to gain 29,200 jobs in 2019, 27,100 jobs in 2020 and 25,900 jobs in 2021.

In 2017, **Michigan manufacturing employment** rose 1.7 percent. State manufacturing employment is estimated to have risen 1.0 percent in 2018. The State's manufacturing employment is projected to rise 0.5 percent in 2019, remain essentially unchanged in 2020 and fall 0.2 percent in 2021. Consequently, Michigan manufacturing employment is forecast to increase a cumulative 2,400 jobs over three years of the forecast.

Michigan Wage and Salary Employment Continues to Rise



Source: Michigan Department of Labor and Economic Growth, U.S. Bureau of Labor Statistics and January 2019 Administration Forecast.

In 2017, **transportation equipment employment** rose 2.0 percent. The sector's employment is then estimated to have increased 0.9 percent in 2018. Transportation equipment employment is forecast to rise 1.5 percent in 2019, increase 0.5 percent in 2020 and rise 0.3 percent in 2021.

Forecasted 2021 transportation equipment employment of 193,400 jobs would be down 42.4 percent from the sector's CY 2000 peak employment of 335,500 jobs.

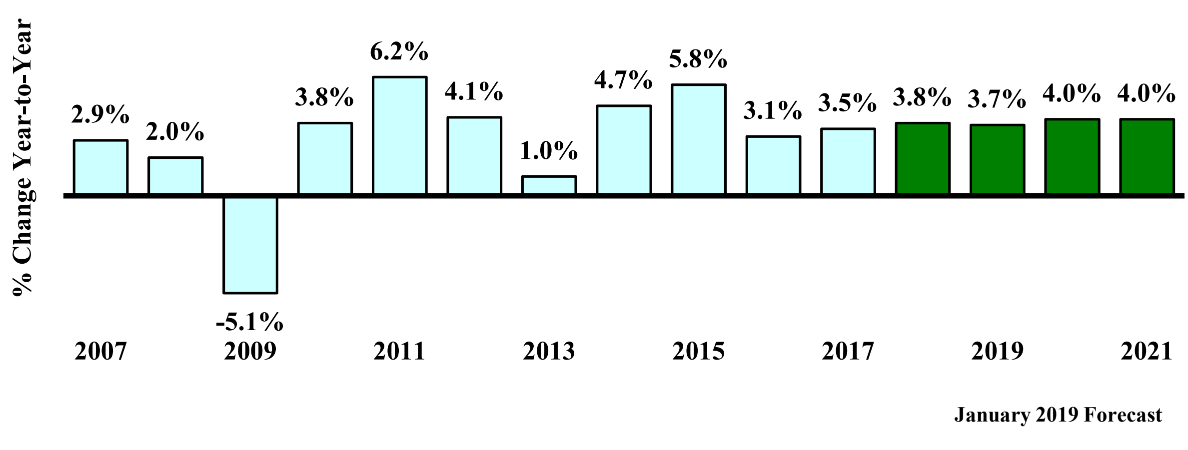
The **Michigan unemployment rate** dropped to 4.6 percent in 2017 from 5.0 percent in 2016. In 2018, the rate is estimated to have fallen to 4.4 percent. In 2019, the Michigan unemployment rate is forecast to drop to 3.9 percent, where the rate is projected to remain in 2020. In 2021, the Michigan unemployment rate is forecast to decline slightly to 3.8 percent – the State's lowest unemployment rate since 2000.

Michigan wages and salaries are estimated to have increased 4.4 percent in 2018. Michigan wages and salaries are projected to rise 3.6 percent in 2019, 4.0 percent in 2020 and 3.8 percent in 2021. **Michigan personal income** increased 3.5 percent in 2017 and rose an estimated 3.8 percent in 2018. State personal income is forecast to rise 3.7 percent in 2019, 4.0 percent in 2020 and 4.0 percent in 2021.

The **Detroit CPI** rose 2.1 percent in 2017 and increased an estimated 2.5 percent in 2018. Over the forecast horizon, the overall price level is projected to rise each year with increases of 2.0 percent in 2019, 2.2 percent in 2020 and 2.2 percent in 2021.

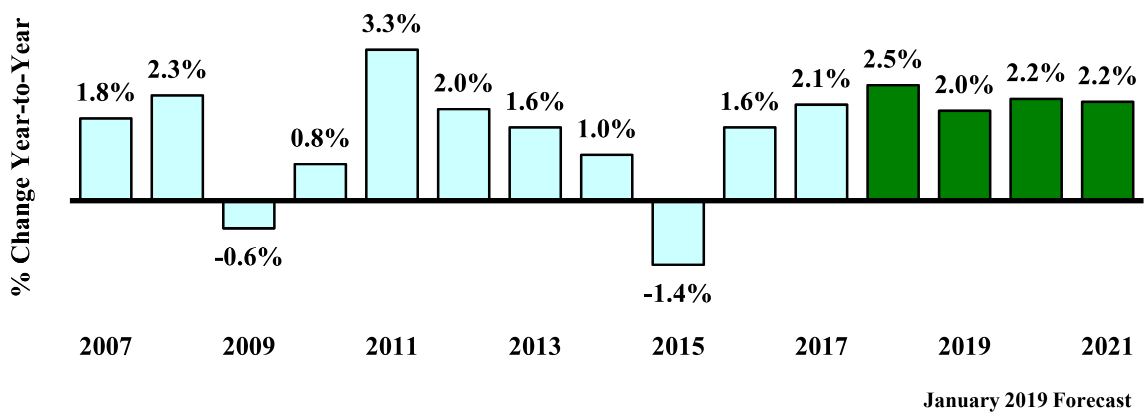
Real (inflation adjusted) Michigan personal income grew 1.4 percent in 2017 and rose an estimated 1.2 percent in 2018. Real Michigan personal income growth is forecast to increase 1.7 percent both in 2019 and in 2020. In 2021, real Michigan personal income growth is forecast to accelerate slightly to 1.8 percent.

Michigan Personal Income Reports Solid Growth



Source: Bureau of Economic Analysis, U.S. Department of Commerce, and Administration Forecast, January 2019.

Consumer Prices Forecast to Record Moderate Growth
Detroit CPI



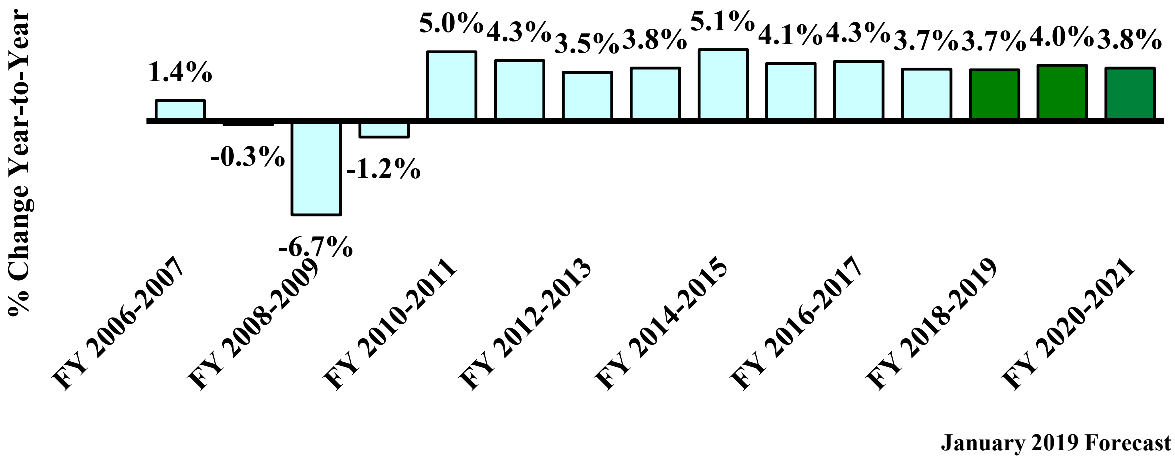
Source: U.S. Bureau of Labor Statistics and Administration Forecast, January 2019.

Fiscal Year Economics

Michigan's largest taxes are the individual income tax ($12.2 billion in FY 2018) and sales and use taxes ($9.9 billion). Income tax withholding is the largest income tax component of the income tax. Withholding ($9.7 billion) is most affected by growth in wages and salaries. Over the forecast horizon, **Michigan wages and salaries** are projected to grow 3.7 percent in FY 2019, 4.0 percent in FY 2020 and 3.8 percent in FY 2021.

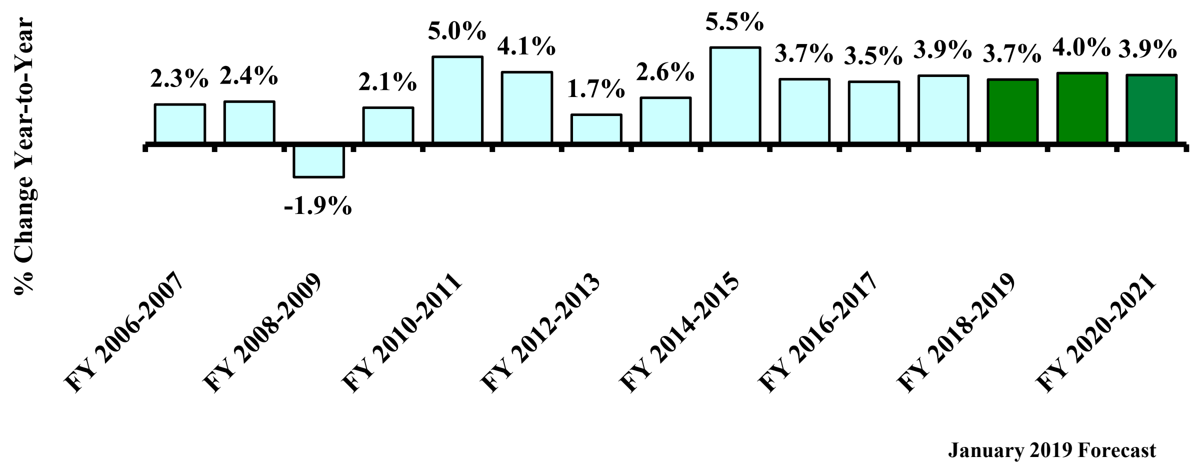
Sales and use taxes depend primarily on **Michigan disposable (after tax) income** and inflation. Disposable income is projected to increase 3.7 percent in FY 2019, 4.0 percent in FY 2020 and 3.9 percent in FY 2021. Prices, as measured by the **Detroit CPI**, are forecast to rise 2.0 percent in FY 2019, to increase 2.2 percent in FY 2020 and to rise 2.2 percent in FY 2021.

Michigan Wages and Salaries to Report Moderate Growth
Basis for Income Tax Withholding Collections



Source: Bureau of Economic Analysis, U.S. Department of Commerce, and Administration Forecast, January 2019.

Michigan Disposable Income Increases
Basis for Sales and Use Tax Collections



Source: Research Seminar in Quantitative Economics, University of Michigan, and Administration Forecast, January 2019.

Forecast Risks

As with any economic forecast, the current recovery faces risks.

Consumer and Economic Sentiment. Consumer sentiment is up from a year ago but CEO confidence is down sharply. To the extent to which expectations are disappointed, sentiment could drop sharply and, in turn, weaken the macroeconomy. Recent sharp declines in financial markets will weigh on sentiment going forward. Currently, lower oil/gasoline prices are buoying consumer sentiment, but threaten to depress business confidence.

International Economies and Geopolitical Tensions. International geopolitical and military tensions have broadened and heightened in recent months -- along with concerns about those tensions' impact on the U.S. economy.

Substantial uncertainty surrounds U.S. trade international relationships. These include uncertainties around the U.S-Mexico-Canada Agreement (USMCA) trade pact (a renegotiated NAFTA). USMCA faces uncertainties as to its ratification, the ultimate elements of the trade pact and its impact on the U.S. economy. Uncertainty also surrounds whether Canada and Mexico will remain subject to current U.S. import tariffs on steel and aluminum (both key inputs to production).

The ongoing U.S. trade conflicts with China represent the largest threat to the U.S. economy from international trade. Over three rounds of tariff increases between July and September, the U.S. has imposed new tariffs on Chinese imports totaling $250 billion while China has imposed retaliatory tariffs on U.S. imports equaling $110 billion. In addition, the U.S. said that the it would impose tariffs on an additional $267 billion in Chinese imports to the U.S. on January 1, 2019. However, in early December the U.S. and China agreed to a 90-day trade truce under which the U.S. postponed imposing any new tariffs or higher tariff rates on Chinese imports to the U.S.

On December 11, the U.S. and China began a new round of trade talks. At the outset of these talks, there were some promising signs. Nevertheless, considerable uncertainty surrounds future U.S.-China trade actions and their impact on the U.S. economy. Still more fundamentally, considerable doubts surround whether and how the two major world economies will reach an accord that would resolve their current trade war -- especially given the very short time period that the 90-day trade truce provides.

Political turmoil in United Kingdom increased the likelihood that the U.K. would depart from the European Union without a United Kingdom-Euro Zone agreement in place. If the U.K. were to leave the without an agreement in place, the U.K. economy would likely be thrown into turmoil. Still more, given the U.K.'s central role in European financial markets, the Euro Zone would also be substantially rattled both financially and economically.

The European Central Bank confirmed that the Bank would be halting its quantitative easing program at the end of 2018. The Bank has been conducting the program since 2009. Lessening the negative impact, the ECB will be rolling over maturing securities for an extended period.

However, the ECB will be halting the quantitative easing program even as the Bank made its third straight cut in quarterly forecasts for the Euro area.

Concerns of a global economic slowdown were heightened in late-2018 when several disappointing economic reports were issued for November. In China, industrial production growth slowed to its weakest level since early 2016 and retail sales growth slowed to its lowest level in more than 15 years. In the Eurozone, the IHS Markit composite index pointed to the weakest private sector expansion in four years. Monthlong protests in France and weak manufacturing activity in Germany were the key factors driving the composite index down. In 2018Q3, the Eurozone reported its weakest quarterly growth since early 2013.

Light Vehicle Sales. According to the forecast, light vehicle sales fall slightly over the forecast period but remain at historically high levels in 2019, 2020 and 2021. As a result, there is likely more downside risk to the vehicle forecast than upside risk. In addition, light trucks' historically large share of light vehicle sales likely heightens the severity of the negative impact higher oil prices and a weaker economy will have on light vehicle sales.

Fiscal Policy. In late December 2017, Congress passed and the President signed a tax reform legislation package that will result in a $1.5 trillion reduction in federal revenues over the next ten years– excluding effects from macroeconomic feedback. In March 2018, Congress passed and the President signed the Bipartisan Budget Act (BBA) of 2018. The Act increased federal government spending by nearly $300 billion above budget caps set in 2011. Going forward, the stimulative impact of the tax cuts and spending increases will likely last through much of 2019 but then weaken as the resulting larger federal deficit will increase federal government borrowing and hence raise interest rates, which will depress economic growth.

As a result of an impasse regarding allocation of money for the construction of a border wall between U.S. and Mexico, portions of the federal government were shutdown on December 22, 2018 with the first working day of the partial closure being December 26. The current federal shutdown represents the third federal government shutdown in 2018. Split party control of the U.S. Congress beginning January 1, 2019 increases the likelihood of federal government shutdowns and other impasses over the next two years.

Oil Prices. Two major uncertainties surround oil price's impact on the U.S. and Michigan economies:

- The direction and magnitude of changes in oil prices. Geopolitical concerns, increased demand, or a major supply disruption could substantially raise oil prices. On the other hand, stronger/weaker foreign economies than predicted will raise/lower oil prices.

- The net impact of oil price's more immediate impact on capital investment and financial markets and oil price's less immediate impact on consumer spending. Given that the U.S is producing record amounts of crude oil and thus oil production is accounting for a growing share of overall U.S. business investment, a sharp drop in oil prices could depress business investment and confidence even as lower gasoline prices increase consumers' discretionary income and sentiment.

Monetary Policy. The Fed has indicated that its future actions will be highly data dependent and thus uncertainty surrounds the timing and size of future rate increases. On the one hand, there is concern that the Fed will raise rates too quickly and risk stalling economic growth. To the extent to which inflation remains below the Fed's target 2.0 percent rate, deflation and its contractionary impacts remain a concern. There is also concern that the Fed will raise rates too slowly and risk "overheating" financial/economic markets. Finally, uncertainty surrounds households' and businesses' reactions to future Fed actions -- especially given the great length of time over which interest rates have been extremely low.

In October 2017, the FOMC began a program to reduce gradually the Fed's massive holdings of agency debt and agency mortgage-backed securities accumulated during several rounds of quantitative easing. The FOMC seems unlikely to make any dramatic departure from its gradual reduction of its longer-term holdings. Nevertheless, uncertainty surrounds the magnitude, timing and macroeconomic impact of the Fed's reduction of its longer-term holdings. In addition, uncertainty also surrounds whether the Fed would initiate another round of quantitative easing if worsening economic conditions warrant.

Housing Market. Projected 2021 housing starts are 11 percent higher than 2017 starts. If the housing market fails to grow as forecasted, the U.S. and Michigan economies would be weaker than expected. Higher than expected mortgage rates could severely curtail housing market growth. However, despite the projected increases, forecasted 2021 starts total 1.34 million units – significantly below average starts in the ten years prior to the housing bust (1.7 million units). A stronger than forecasted housing market would boost the overall economy.

Recession Risk. A worsening of one or a combination of risks could weigh very heavily on the U.S. financial markets and macroeconomy and push the U.S. economy into a recession. Many of the risks listed above likely combined to substantially depress financial markets in late 2018 with many key stock market indices dropping to or near bear market levels. While the chance of a recession in 2019 is unlikely, the risk of a recession could rise significantly in 2020.

SECTION IV

Administration
Revenue Estimates

Administration Revenue Estimates
January 11, 2019

Revenue Estimate Overview

The revenue estimates presented in this section consist of baseline revenues, revenue adjustments, and net revenues. Baseline revenues provide an estimate of the effects of the economy on tax revenues. For these estimates, FY 2018 is the base year. Any non-economic changes to the taxes occurring in FY 2019, FY 2020 and FY 2021 are not included in the baseline estimates. Non-economic changes are referred to in the tables as "tax adjustments". The net revenue estimates are the baseline revenues adjusted for tax adjustments.

This treatment of revenue is best illustrated with an example. Suppose tax revenues are $10.0 billion in a given year, and that based on the economic forecast, revenues are expected to grow by 5.0 percent per year. Baseline revenue would be $10.0 billion in Year 1, $10.5 billion in Year 2, and $11.0 billion in Year 3. Assume a tax rate cut is in place that would reduce revenues by $100 million in Year 1, $200 million in Year 2, and $300 million in Year 3. If Year 1 is the base year, the revenue adjustments for Year 1 would be $0 since the tax cut for this year is included in the base. The revenue adjustments for Year 2 would be $100 million, and the revenue adjustments for Year 3 would be $200 million, since the revenue adjustments are compared to the base year.

In the example above, the baseline revenues would be $10.0 billion, $10.5 billion, and $11.0 billion, for Years 1 through 3, respectively. The revenue adjustments would be $0 in Year 1, $100 million in Year 2, and $200 million in Year 3. The $200 million in Year 3 represents the tax cuts since Year 1. Net revenue would be $10.0 billion in Year 1, $10.4 billion in Year 2, and $10.8 billion in Year 3.

The following revenue figures are presented on a Consensus basis. Generally speaking, the Consensus estimates do not include certain one-time budget measures, such as withdrawals from the Budget Stabilization Fund, the sale of buildings, and so on. The figures also do not include constitutional revenue sharing payments to local governments from the sales tax. In addition, the estimates only include enacted legislation and do not include the effects of any proposed changes. The School Aid Fund estimates consist of taxes plus the transfer from the State Lottery Fund.

FY 2018 Revenue Outlook

FY 2018 GF-GP revenue is estimated to be $10,945.4 million, a 7.4 percent increase compared to FY 2017. The FY 2018 GF-GP revenue estimate is $481.8 million above the May 2018 Consensus estimate. SAF revenue is forecast to be $13,339.9 million, representing a 5.2 percent increase compared to FY 2017. The FY 2018 SAF estimate is $95.9 million above the May 2018 Consensus estimate (see Table 2).

Table 2

FY 2017-18 Preliminary Final Revenue Estimates

(millions)

	Preliminary FY 2018 Amount	Preliminary FY 2018 Growth	Change from May 2018 Consensus
General Fund - General Purpose			
Baseline Revenue	$12,181.6	10.1%	---
Tax Cut Adjustments	($1,236.2)		---
Net Resources	$10,945.4	7.4%	$481.8
School Aid Fund			
Baseline Revenue	$13,322.4	4.6%	---
Tax Cut Adjustments	$17.5		---
Net Resources	$13,339.9	5.2%	$95.9
Combined			
Baseline Revenue	$25,504.0	7.2%	---
Tax Cut Adjustments	($1,218.7)		---
Net Resources	$24,285.3	6.1%	$577.7

Prepared By: Office of Revenue and Tax Analysis, Michigan Department of Treasury

FY 2019 Revenue Outlook

FY 2019 GF-GP revenue is estimated to be $10,786.0 million, a 1.5 percent decrease compared to FY 2018. The FY 2019 GF-GP revenue estimate is $374.4 million above the May 2018 Consensus estimate. SAF revenue is forecast to be $13,542.6 million; representing a 1.5 percent increase compared to FY 2018. The FY 2019 SAF estimate is $31.8 million below the May Consensus estimate (see Table 3).

Table 3

FY 2018-19 Administration Revenue Estimates

(millions)

	Administration January 11, 2019		Change from May 2018 Consensus
	Amount	**Growth**	
General Fund - General Purpose			
Baseline Revenue	$12,244.3	0.5%	---
Tax Cut Adjustments	($1,458.3)	---	---
Net Resources	$10,786.0	-1.5%	$374.4
School Aid Fund			
Baseline Revenue	$13,576.6	1.9%	---
Tax Cut Adjustments	($34.0)	---	---
Net Resources	$13,542.6	1.5%	($31.8)
Combined			
Baseline Revenue	$25,820.9	1.2%	---
Tax Cut Adjustments	($1,492.3)	---	---
Net Resources	$24,328.6	0.2%	$342.6

Prepared By: Office of Revenue and Tax Analysis, Michigan Department of Treasury

FY 2020 Revenue Outlook

FY 2020 GF-GP revenue is estimated to be $10,783.9 million, approximately flat compared to FY 2019. The FY 2019 GF-GP revenue estimate is $265.2 million above the May 2018 Consensus estimate. SAF revenue is forecast to be $13,932.7 million; representing a 2.9 percent increase compared to FY 2019. The FY 2020 SAF estimate is $31.9 million above the May Consensus estimate (see Table 4).

Table 4

FY 2019-20 Administration Revenue Estimates

(millions)

	Administration January 11, 2019 Amount	Administration January 11, 2019 Growth	Change from May 2018 Consensus
General Fund - General Purpose			
Baseline Revenue	$12,545.8	2.5%	---
Tax Cut Adjustments	($1,761.9)	---	---
Net Resources	$10,783.9	0.0%	$265.2
School Aid Fund			
Baseline Revenue	$13,921.7	2.5%	---
Tax Cut Adjustments	$11.0	---	---
Net Resources	$13,932.7	2.9%	$31.9
Combined			
Baseline Revenue	$26,467.5	2.5%	---
Tax Cut Adjustments	($1,750.9)	---	---
Net Resources	$24,716.6	1.6%	$297.1

Prepared By: Office of Revenue and Tax Analysis, Michigan Department of Treasury

FY 2021 Revenue Outlook

FY 2021 GF-GP revenue is estimated to be $10,822.1 million, a 0.4 percent increase compared to FY 2020. SAF revenue is forecast to be $14,252.6 million; representing a 2.3 percent increase compared to FY 2020 (see Table 5).

Table 5

FY 2020-21 Administration Revenue Estimates

(millions)

	Administration January 11, 2019 Amount	Growth
General Fund - General Purpose		
Baseline Revenue	$12,753.0	1.7%
Tax Cut Adjustments	($1,930.9)	---
Net Resources	$10,822.1	0.4%
School Aid Fund		
Baseline Revenue	$14,218.6	2.1%
Tax Cut Adjustments	$34.0	---
Net Resources	$14,252.6	2.3%
Combined		
Baseline Revenue	$26,971.6	1.9%
Tax Cut Adjustments	($1,896.9)	---
Net Resources	$25,074.7	1.4%

Prepared By: Office of Revenue and Tax Analysis, Michigan Department of Treasury

Constitutional Revenue Limit

Article IX, Section 26, of the Michigan Constitution establishes a limit on the amount of revenue State government can collect in any given fiscal year. The revenue limit for a given fiscal year is equal to 9.49 percent of the State's personal income for the calendar year prior to the year in which the fiscal year begins. For example, FY 2017 revenue is compared to CY 2015 personal income. If revenues exceed the limit by less than 1 percent, the State may deposit the excess into the Budget Stabilization Fund (BSF). If the revenues exceed the limit by more than 1 percent, the excess revenue is refunded to taxpayers.

FY 2017 revenues were $9.2 billion below the revenue limit. State revenues will also be well below the limit for FY 2018 through FY 2021. FY 2018 revenues are expected to be $8.7 billion below the limit, FY 2019 revenues $10.2 billion below the limit, FY 2020 revenues $11.0 billion below the limit, and FY 2021 revenues $11.7 billion below the limit (See Table 6).

Table 6

Administration Revenue Limit Calculation

(millions)

	FY 2017 Final June 2018	FY 2018 Admin Jan 2019	FY 2019 Admin Jan 2019	FY 2020 Admin Jan 2019	FY 2021 Admin Jan 2019
Revenue Subject to Limit	$31,109.2	$32,973.3	$33,500.3	$34,388.0	$35,352.0
Revenue Limit	**CY 2015**	**CY 2016**	**CY 2017**	**CY 2018**	**CY 2019**
Personal Income	$424,807	$439,361	$460,270	$477,760	$495,437
Ratio	9.49%	9.49%	9.49%	9.49%	9.49%
Revenue Limit	$40,314.2	$41,695.4	$43,679.6	$45,339.4	$47,017.0
Amount Under (Over) Limit	**$9,205.0**	**$8,722.1**	**$10,179.4**	**$10,951.4**	**$11,664.9**

Budget Stabilization Fund Calculation

The Management and Budget Act contains provisions for calculating a recommended deposit or withdrawal from the BSF. The calculation looks at personal income net of transfer payments. The net personal income figure is adjusted for inflation. The change in this figure for the calendar year determines whether a pay-in or pay-out is recommended. If the formula calls for a deposit into the BSF, the deposit is made in the next fiscal year. If the formula calls for a withdrawal, the withdrawal is made during the current fiscal year.

Recently enacted legislation, PA 613 of 2018, allows that the legislature shall not appropriate money from the fund for a fiscal year when the annual growth rate for the calendar year in which that fiscal year ends is estimated to be greater than 0% at the most recent consensus revenue estimating conference. When the annual growth rate is estimated to be less than 0% at the most recent consensus revenue estimating conference, the legislature may appropriate by law for the fiscal year ending in the current calendar year no more than 25% of the prior fiscal year ending balance in the fund as reported in the comprehensive annual financial report.

If real personal income grows by more than 2 percent in a given calendar year, the fraction of income growth over 2 percent is multiplied by the current fiscal year's GF-GP revenue to determine the pay-in for the next fiscal year. Real calendar year personal income is projected to be above 0 percent but below 2 percent throughout the forecast horizon. Therefore, no payouts or pay-ins are projected.

School Aid Fund Revenue Adjustment Factor

The School Aid Fund (SAF) revenue adjustment factor for the next fiscal year is calculated by dividing the sum of current year and subsequent year SAF revenue by the sum of current year and prior year SAF revenue. For example, the FY 2020 SAF revenue adjustment factor is calculated by dividing the sum of FY 2019 and FY 2020 SAF revenue by the sum of FY 2018 and FY 2019 SAF revenue. The SAF revenue totals are adjusted for any change in the rate and base of the SAF taxes. The year for which the adjustment factor is being calculated is used as the base year for any tax adjustments. For FY 2020, the SAF revenue adjustment factor is calculated to be 1.0223 (See Table 7). For FY 2021, the SAF revenue adjustment factor is calculated to be 1.0233 (See Table 8).

Table 7

Administration School Aid Revenue Adjustment Factor

For Fiscal Year 2020

	FY 2018	FY 2019	FY 2020
Baseline SAF Revenue	$13,322.4	$13,576.6	$13,921.7
Balance Sheet Adjustments	$17.5	($34.0)	$11.0
Net SAF Estimates	$13,339.9	$13,542.6	$13,932.7
Subtotal Adjustments to FY 2020 Base	($6.5)	$45.0	$0.0
Baseline Revenue on a FY 2020 Base	$13,333.4	$13,587.6	$13,932.7

School Aid Fund Revenue Adjustment Calculation for FY 2020

Sum of FY 2018 & FY 2019	$13,333.4	+	$13,587.6	=	$26,921.0
Sum of FY 2019 & FY 2020	$13,587.6	+	$13,932.7	=	$27,520.3

FY 2020 Revenue Adjustment Factor	**1.0223**

Note: Factor is calculated off a FY 2020 base year.

Table 8

Administration School Aid Revenue Adjustment Factor

For Fiscal Year 2021

	FY 2019	FY 2020	FY 2021
Baseline SAF Revenue	$13,576.6	$13,921.7	$14,218.6
Balance Sheet Adjustments	($34.0)	$11.0	$34.0
Net SAF Estimates	$13,542.6	$13,932.7	$14,252.6
Subtotal Adjustments to FY 2021 Base	$68.0	$23.0	$0.0
Baseline Revenue on a FY 2021 Base	$13,610.6	$13,955.7	$14,252.6

School Aid Fund Revenue Adjustment Calculation for FY 2021

Sum of FY 2019 & FY 2020	$13,610.6	+	$13,955.7	=	$27,566.3
Sum of FY 2020 & FY 2021	$13,955.7	+	$14,252.6	=	$28,208.3

FY 2021 Revenue Adjustment Factor	**1.0233**

Note: Factor is calculated off a FY 2021 base year.

Revenue Detail

The estimated tax and revenue totals include the effects of all enacted tax changes. The revenue totals by tax are presented separately for GF-GP and for the SAF (See Tables 8 and 9). Tax totals for the income, sales, use, CIT/MBT, tobacco and casino taxes for all funds are also included (See Table 10).

Table 9
Administration General Fund General Purpose Revenue Detail
(millions)

	FY 2019		FY 2020		FY 2021	
	Amount	**Growth**	**Amount**	**Growth**	**Amount**	**Growth**
GF-GP Tax Amounts						
Income Tax	$7,123.4	-2.1%	$7,127.1	0.1%	$7,132.9	0.1%
Sales	$1,343.2	5.8%	$1,393.7	3.8%	$1,429.4	2.6%
Use	$664.7	-12.6%	$650.5	-2.1%	$631.5	-2.9%
Cigarette	$181.8	0.2%	$179.7	-1.2%	$178.6	-0.6%
Beer & Wine	$52.0	2.4%	$53.0	1.9%	$54.0	1.9%
Liquor Specific	$58.8	1.7%	$60.0	2.0%	$61.0	1.7%
Insurance Co. Premium	$397.8	1.2%	$402.0	1.1%	$411.0	2.2%
CIT/MBT	$504.9	25.8%	$443.5	-12.2%	$441.3	-0.5%
Telephone & Telegraph	$30.0	-0.3%	$30.0	0.0%	$30.0	0.0%
Oil & Gas Severance	$28.0	6.9%	$30.0	7.1%	$32.0	6.7%
Essential Services Assess.	$107.0	7.8%	$113.0	5.6%	$117.0	3.5%
Penalties and Interest	$128.0	-27.0%	$131.0	2.3%	$131.0	0.0%
Corporate Income	$0.0	0.0%	$0.0	0.0%	$0.0	0.0%
Railroad/Car Loaning	$2.0	0.0%	$2.0	0.0%	$2.0	0.0%
Enhanc. Enforce/ACS	($150.0)	1.3%	($152.0)	1.3%	($154.0)	1.3%
Other Balance Sheet	$0.0	0.0%	$0.0	0.0%	$0.0	0.0%
GF-GP Other Taxes	($20.0)	NA	($19.0)	-5.0%	($21.0)	10.5%
Total GF-GP Taxes	$10,471.6	-1.0%	$10,463.5	-0.1%	$10,497.7	0.3%
GF-GP Non-Tax Revenue						
Federal Aid	$13.3	0.0%	$13.3	0.0%	$13.3	0.0%
From Local Agencies	$0.1	NA	$0.1	0.0%	$0.1	0.0%
From Services	$7.0	NA	$7.0	0.0%	$7.0	0.0%
From Licenses & Permits	$14.0	159.3%	$14.0	0.0%	$14.0	0.0%
Miscellaneous	$10.0	-33.3%	$10.0	0.0%	$10.0	0.0%
Interfund Interest	$5.0	-20.6%	$6.0	20.0%	$6.0	0.0%
Liquor Purchase	$199.0	0.9%	$203.0	2.0%	$207.0	2.0%
Charitable Games	$5.0	163.2%	$5.0	0.0%	$5.0	0.0%
Transfer From Escheats	$61.0	-41.1%	$62.0	1.6%	$62.0	0.0%
Other Non Tax	$0.0	0.0%	$0.0	0.0%	$0.0	0.0%
Total Non Tax	$314.4	-15.7%	$320.4	1.9%	$324.4	1.2%
Total GF-GP Revenue	$10,786.0	-1.5%	$10,783.9	0.0%	$10,822.1	0.4%

Table 10

Administration School Aid Fund Revenue Detail

	FY 2019		FY 2020		FY 2021	
	Amount	Growth	Amount	Growth	Amount	Growth
School Aid Fund						
Income Tax	$2,839.2	-1.8%	$2,886.9	1.7%	$2,927.3	1.4%
Sales Tax	$6,193.6	5.3%	$6,428.2	3.8%	$6,599.9	2.7%
Use Tax	$560.3	-16.7%	$567.1	1.2%	$570.5	0.6%
Liquor Excise Tax	$58.4	2.5%	$59.6	2.1%	$60.6	1.7%
Cigarette & Tobacco	$346.1	0.7%	$340.9	-1.5%	$337.7	-0.9%
Marijuana Excise Tax	$0.0	0.0%	$21.9	0.0%	$37.8	0.0%
State Education Tax	$2,071.7	4.2%	$2,143.0	3.4%	$2,219.0	3.5%
Real Estate Transfer	$354.0	1.1%	$358.0	1.1%	$362.0	1.1%
Industrial Facilities Tax	$37.5	3.3%	$37.5	0.0%	$38.0	1.3%
Casino (45% of 18%)	$115.0	-0.3%	$117.3	2.0%	$118.5	1.0%
Commercial Forest	$3.3	-13.2%	$3.3	0.0%	$3.3	0.0%
Other Spec Taxes	$21.5	0.9%	$22.0	2.3%	$23.0	4.5%
Subtotal Taxes	$12,600.6	1.9%	$12,985.7	3.1%	$13,297.6	2.4%
Lottery Transfer	$942.0	-3.9%	$947.0	0.5%	$955.0	0.8%
Total SAF Revenue	$13,542.6	1.5%	$13,932.7	2.9%	$14,252.6	2.3%

Table 11

Administration Major Tax Totals

	FY 2019		FY 2020		FY 2021	
	Amount	Growth	Amount	Growth	Amount	Growth
Major Tax Totals (Includes all Funds)						
Income Tax	$10,296.4	1.2%	$10,551.8	2.5%	$10,730.0	1.7%
Sales Tax	$8,508.7	5.3%	$8,830.1	3.8%	$9,064.8	2.7%
Use Tax	$1,663.0	-9.8%	$1,683.5	1.2%	$1,693.5	0.6%
CIT/MBT	$504.9	25.8%	$443.5	-12.2%	$441.3	-0.5%
Cigarette and Tobacco	$918.3	0.1%	$907.2	-1.2%	$901.0	-0.7%
Casino Tax	$115.0	1.6%	$117.3	2.0%	$118.5	1.0%