Economic and Revenue Outlook

FY 2017-18, FY 2018-19 and FY 2019-20

Michigan Department of Treasury

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Revenue Review and Outlook

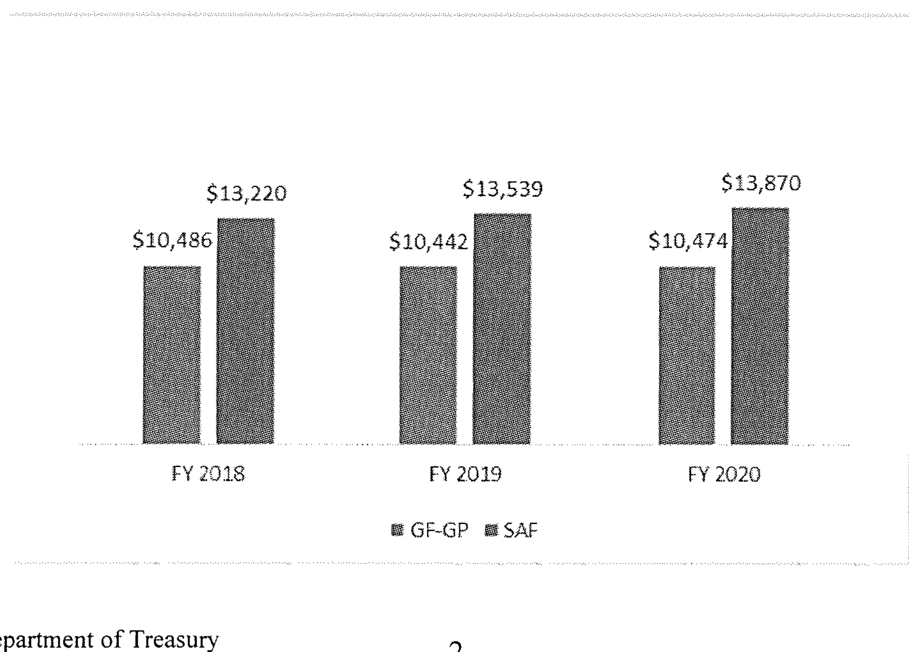
- Over the forecast horizon, solid revenue growth is expected. Strong economic fundamentals will bring increased income tax, sales tax and use tax collections.

- FY 2018 GF-GP revenue is forecast to increase 2.8 percent to $10,485.8 million, up $178.1 million from the January 2018 Consensus estimate. FY 2018 SAF revenue is forecast to increase 4.2 percent to $13,219.6 million, up $135.1 million from the January 2018 Consensus estimate.

- FY 2019 GF-GP revenue is forecast to decrease 0.4 percent to $10,441.9 million, up $102.3 million from the January 2018 Consensus estimate. FY 2018 SAF revenue is forecast to increase 2.4 percent to $13,538.6 million, up $74.6 million from the January 2018 Consensus estimate.

- FY 2020 GF-GP is forecast to increase 0.3 percent to $10,474.2 million, up $60.7 million from the January 2018 Consensus estimate. FY 2020 SAF revenue is forecast to increase 2.4 percent to $13,870.0 million, up $47.3 million from the January 2018 Consensus estimate.

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



2018, 2019 and 2020 U.S. Economic Outlook

- Economic growth in the U.S. economy is expected to accelerate in 2018 and 2019. An increase in jobs and a low unemployment rate are projected in the next two years.

- In 2017, real GDP accelerated to 2.3 percent from 1.5 percent. Economic growth is forecast to accelerate to 2.8 percent in 2018, remain unchanged at 2.8 percent in 2019 and then slow to 1.9 percent in 2020.

- In 2017, while slowing to 1.6 percent, national employment growth marked its seventh straight national annual employment increase. U.S. employment is projected to rise 1.6 percent in 2018, 1.4 percent in 2019 and 0.9 percent in 2020.

- The U.S. unemployment rate has declined in each of the past seven years. The national unemployment rate dropped 0.5 of a point to 4.4 percent in 2017. The national unemployment rate is forecast to fall to 4.0 percent in 2018, decline to 3.6 percent in 2019 and then rise to 3.8 percent in 2020.

- Housing starts increased 2.9 percent in 2017. Housing starts are forecast to rise 7.1 percent in 2018, 3.3 percent in 2019 and 1.4 percent in 2020. In 2020, starts are expected to total 1.355 million units – still historically low.

- After rising to record highs in 2015 and 2016, light vehicle sales fell slightly to 17.1 million units in 2017. Over the forecast horizon, light vehicle sales are projected to remain at historically high levels of 17.0 million units in 2018, 16.8 million units in 2019 and 16.7 million units in 2020.

- In 2017, inflation accelerated to 2.1 percent. Inflation is forecast to accelerate to 2.4 percent in 2018, decelerate to 2.2 percent in 2019 and remain unchanged at 2.2 percent in 2020.

2018, 2019 and 2020 Michigan Economic Outlook

- The Michigan economy continues to grow over the forecast from 2018 to 2020. Michigan wage and salary employment and personal income are expected to show considerable growth.

- After falling each year from 2001 to 2010, Michigan wage and salary employment has increased each year since 2011. Michigan wage and salary employment increased 1.2 percent in 2017. Michigan employment is forecast to rise 1.1 percent in 2018, 0.9 percent in 2019 and 0.7 percent in 2020.

- The Michigan unemployment rate has dropped each year since 2010. In 2017, the Michigan unemployment rate fell to 4.6 percent. The Michigan unemployment rate is forecast to remain unchanged at 4.6 percent in 2018, fall to 4.4 percent in 2019 and rise to 4.6 percent in 2020.

- After dropping 8.3 percent in 2009 (the largest percent decline since 1945), Michigan wages and salaries have increased each year. In 2017, Michigan wages and salaries grew 2.9 percent. Michigan wages and salaries are forecast to rise 4.6 percent both in 2018 and in 2019 and increase 3.7 percent in 2020.

- Michigan personal income fell 5.1 percent in 2009 – marking the first annual Michigan personal income drop since 1958 and the largest annual decline since 1938. However, Michigan personal income has risen each year since 2010. Michigan personal income increased 2.6 percent in 2017. Michigan income is projected to increase 4.1 percent in 2018, 4.6 percent in 2019 and 4.0 percent in 2020.

- On a fiscal year basis, Michigan disposable income rose 2.3 percent in FY 2017. Disposable income is projected to rise 3.8 percent in FY 2018, 4.8 percent in FY 2019 and 4.2 percent in FY 2020.

- Wages and salaries increased 2.4 percent in FY 2017. Wages and salaries are forecast to increase 4.2 percent in FY 2018, rise 4.7 percent in FY 2019, and increase 4.1 percent in FY 2020.

Forecast Risks

- High consumer and business sentiment is the result of higher expectations for the U.S. macroeconomy. To the extent to which these higher expectations are disappointed, sentiment could drop sharply and, in turn, weaken the macroeconomy.

- International geopolitical tensions, household and investor concerns about these tensions have grown markedly in recent months.

- 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.

- Significant uncertainty surrounds the impact of tax reform legislation enacted in December 2017 and the Bipartisan Budget Act of 2018 enacted in March 2018.

- Risk surrounds the economic impact of possible international trade or immigration actions that might be taken by the United States. Recently imposed tariffs on steel and aluminum imports into the United States could have a substantial negative impact by disrupting supply chains for manufacturers.

SECTION II

Economic Review

Economic Review
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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 9 years old. According to the Institute for Supply Management, the overall U.S. economy expanded for its 108th straight month in April 2018. **Real Gross Domestic Product (GDP)** has grown in all but two quarters since the end of the Great Recession. In 2017 real GDP growth accelerated significantly from 2016 when growth recorded its slowest calendar year pace in the current expansion.

In 2017, real GDP grew 2.3 percent compared with 1.5 percent growth in 2016. In the first quarter of 2018, real GDP grew at a 2.3 percent annual rate.

Employment

Overall Wage and Salary Employment

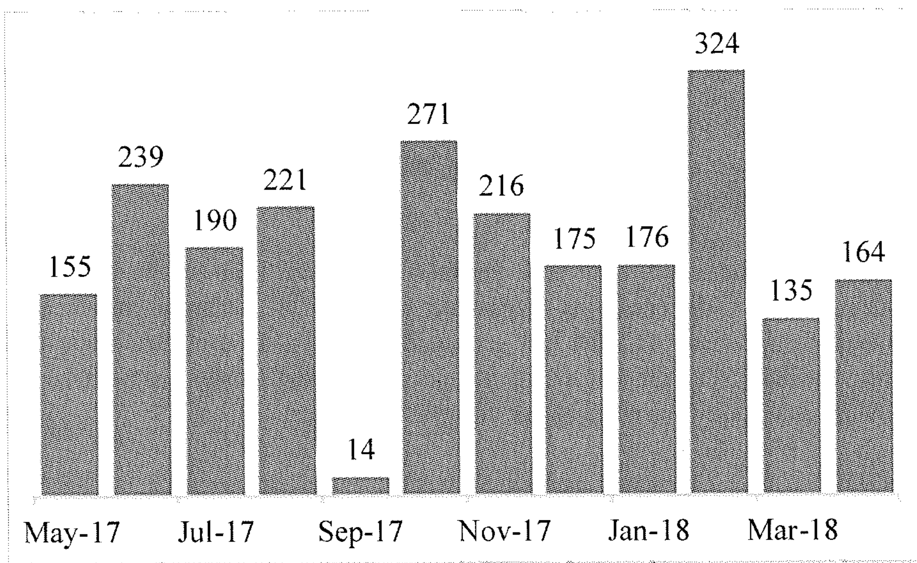
Wage and salary employment continues to strengthen.

The current streak of monthly employment gains is the longest on record.

In 2017, wage and salary employment posted its seventh straight year of calendar year employment growth.

U.S. wage and salary employment has continued rising since the January 2018 Consensus Conference. April 2018 marked the 91st consecutive increase from the prior month in national wage and salary employment. Consequently, at 148.4 million jobs, the April 2018 employment level represents the all-time high monthly U.S. employment level. Since the January 2018 Consensus Conference, employment rose by 800,000 jobs (an average of 200,000 jobs increase per month). Compared to a year ago, April 2018 employment was up by 2.3 million jobs (1.6 percent).

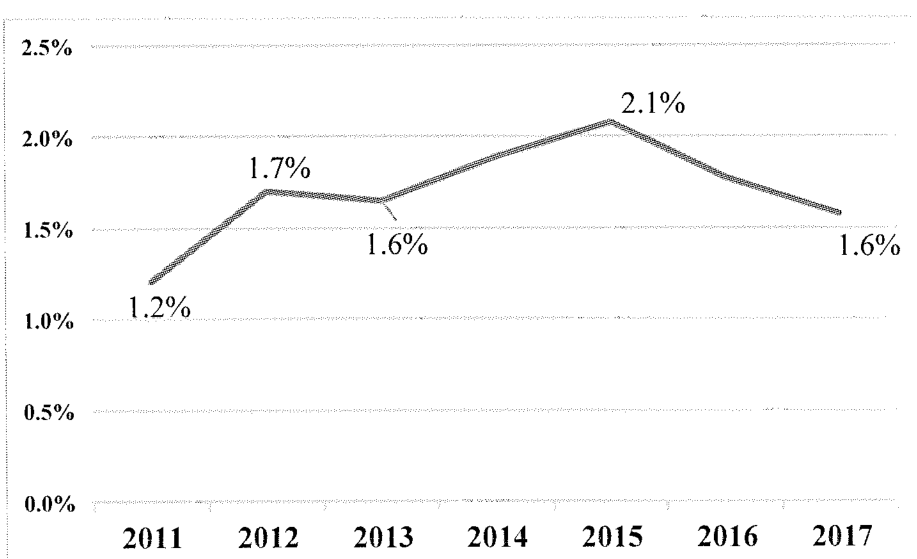
U.S. Payroll Employment
2.3 Million Jobs Added in Past Year
(Monthly Change in Thousands)



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

Calendar year 2017 represented the seventh straight year in which U.S. wage and salary employment increased. The overall annual U.S. employment level rose 1.2 percent in 2011, 1.7 percent in 2012, 1.6 percent in 2013, 1.9 percent in 2014, 2.1 percent in 2015, 1.8 percent in 2016 and 1.6 percent in 2017.

United States Wage and Salary Employment
Annual Percent Change



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

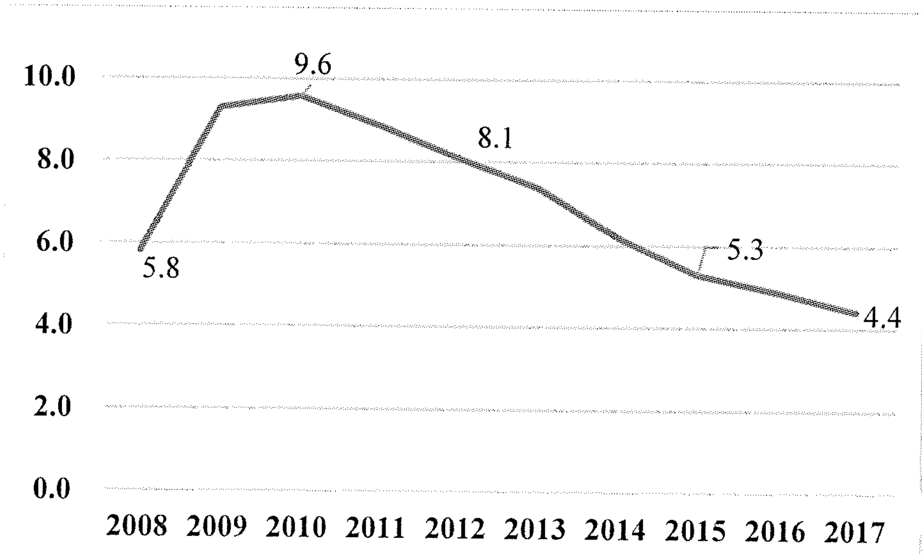
Unemployment Rate

The unemployment rate continues to drop and is the lowest three month average national unemployment rate in nearly two decades.

After holding at 4.1 percent for five months, the three-month average of the U.S. unemployment rate fell to 4.0 percent in April 2018 -- the lowest three-month average since December 2000.

The annual U.S. unemployment rate has fallen in each of the past seven 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, 8.1 percent in 2012, 7.4 percent in 2013, 6.2 percent in 2014, 5.3 percent in 2015 and 4.9 percent in 2016. In 2017, the U.S. unemployment rate averaged 4.4 percent – the lowest annual U.S. unemployment rate in 17 years.

United States. Unemployment Rate
2008-2017



The four-week average of initial unemployment claims has remained below 300,000 for 163 consecutive weeks – the longest streak of sub-300,000 readings since 1970, when the U.S. workforce and population were much smaller than currently.

Housing Market

House Construction and Sales

Housing starts have risen each year since falling to an all-time low in 2009. Despite these gains over the past eight years, housing starts remain at historically low levels.

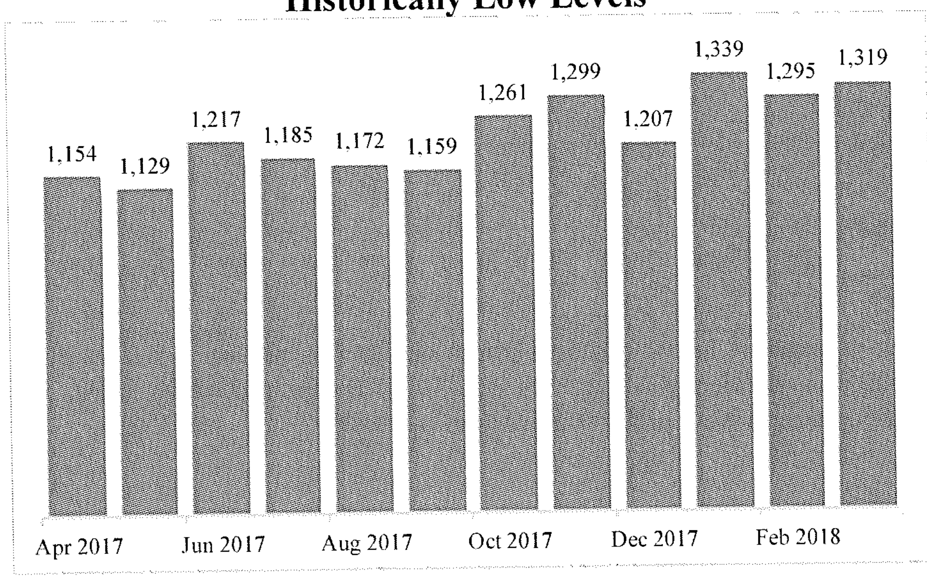
After falling to an all-time low in 2011, new home sales have risen each year, but remain historically low.

Mortgage rates have risen modestly since late 2017.

Calendar year **housing starts** have strengthened, but still remain at a historically low level. Compared to the 2009 record low, calendar year 2017 housing starts were 117.1 percent higher. However, 2017 housing starts were 41.8 percent below the 2005 level (the highest level since 1972). 2017 starts were 12.3 percent lower than average housing starts in the 1990s (pre-boom).

March 2018 marked the 36th straight month in which housing starts were above 1.0 million units at an annualized rate and also marked the 18th straight month in which annualized starts exceeded 1.1 million units. Compared to a year ago, first quarter of 2018 annualized housing starts were up 6.5 percent (U.S. Census Bureau).

Annualized Housing Starts Remain Around Historically Low Levels



Source: U.S. Census Bureau. Seasonally adjusted annual rate (thousands).

In 2017, **new home sales** rose 9.3 percent to 613,000 – marking the sixth straight annual sales increase. In the first quarter of 2011, sales were up 8.3 percent from a year ago. (U.S. Census Bureau). **Existing home sales** increased very slightly (1.1 percent) in 2017; in the first quarter of 2018, existing home sales were down 1.2 percent from a year ago. (National Association of Realtors).

Mortgage Interest Rates

At the time of the January 2018 Consensus Conference, the most recent available **30-year fixed mortgage rate** stood at 3.92 percent. (FreddieMac) Over the past five months, mortgage rates have increased 0.55 of a percentage point to 4.47 percent with the majority of the increase taking place in February and March.

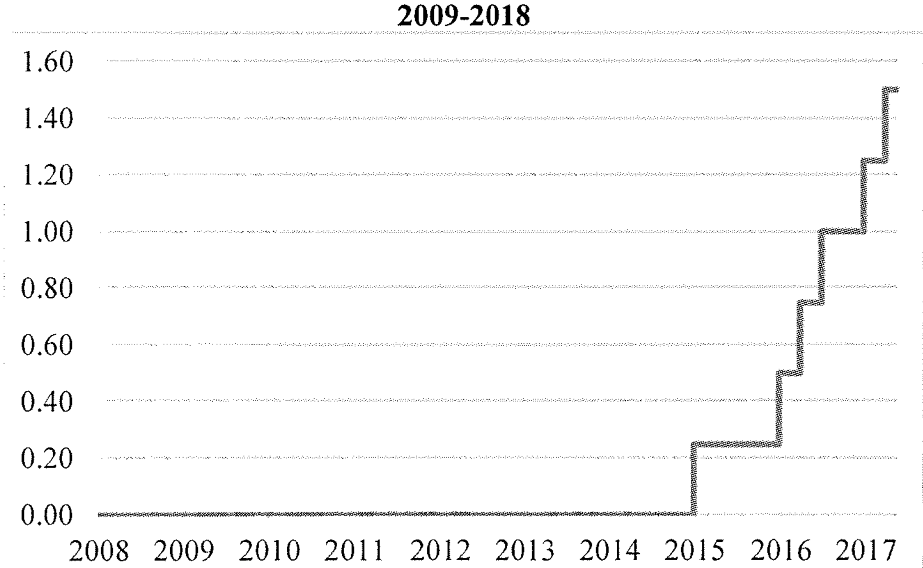
Monetary Policy

Moving forward, the FOMC continues to signal future "gradual" interest rate increases after an extended period of historic lows.

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 thus far, the FOMC has raised the target range once – increasing the range by 25 basis points at its March 2018 meeting.

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.

Federal Funds Interest Rate (lower limit)
2009-2018



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

Despite low inflation, the FOMC increased the federal funds rate target range by 25 basis points six times between December 2016 and March 2018. Likewise, despite indications that inflation was accelerating, the FOMC left interest rates unchanged in May 2018 and indicated that the Committee would continue to raise interest rates at a gradual pace. Thus, as of May 2018, the range stands at 1.50-1.75 basis points. As for the timing and magnitude of future rate increases, FOMC stated:

> The Committee expects that economic conditions will evolve in a manner that will warrant further gradual increases in the federal funds rate; the federal funds rate is likely to remain, for some time, below levels that are expected to prevail in the longer run. However, the actual path of the federal funds rate will depend on the economic outlook as informed by incoming data. (FOMC Statement, May 2, 2018).

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.

Fiscal Policy

Tax cuts and spending will provide stimulus in the near term.

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 estimate 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. Many of the individual and pass-through tax cuts are temporary and will expire over time while the corporate tax cuts are permanent.

Individual and pass-through tax cut elements include

- Changes income ranges for the seven income tax brackets and lowers the tax rate for each tax bracket.
- Nearly doubles of the standard exemption.
- Eliminates the personal exemption.
- Lowers mortgage interest deduction balances from $1.0 million under current law to $750,000.
- Repeals the individual mandate of the Affordable Care Act starting in 2019.
- Increases the Alternative Minimum Tax exemption level.
- Doubles the taxable threshold for the estate tax.
- Provides a 20 percent deduction for pass-through taxes and lowers the tax rate.

Corporate tax elements include

- Reduces corporate tax rate from 35 percent to 21 percent and reduces or eliminates some related business deductions.

- Eliminates corporate Alternative Minimum Tax.

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.

Inflation

Since 2009, overall personal consumption expenditures (PCE) price index inflation has been below the Federal Reserve's target 2.0 percent level in all but one year.

U.S. consumer price index inflation remains moderate. Between 2013 and 2016, inclusive, CPI inflation remained below 2.0 percent.

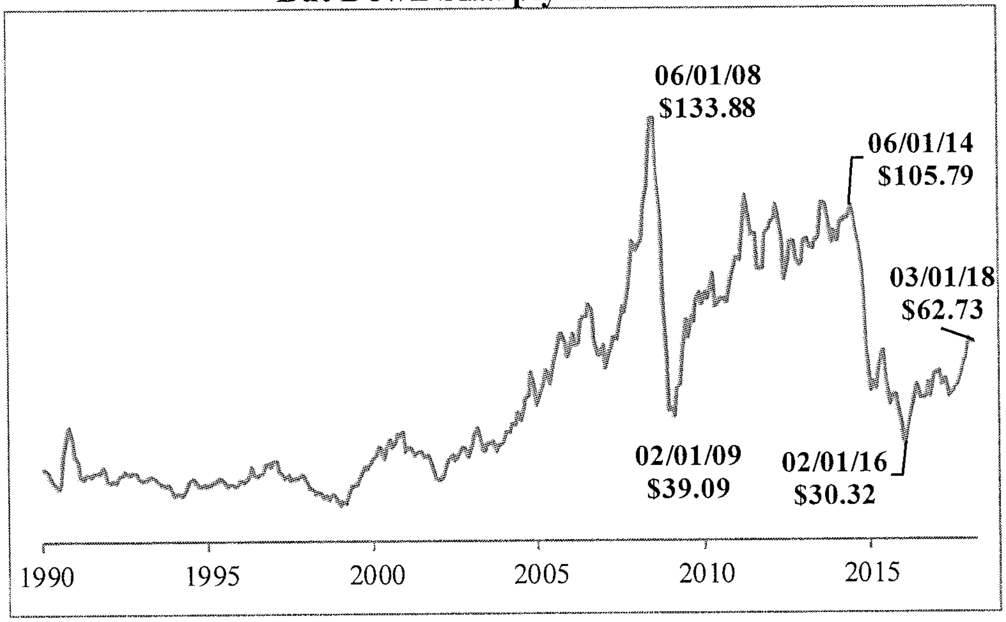
However, inflation may accelerate in the near future with tighter labor markets coupled with higher fuel prices.

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. Still more, core PCE price index inflation, which excludes the direct impact of volatile food and energy prices, has stayed below 2.0 percent in each year since 2009. In 2017, PCE price inflation was up 1.7 percent. Most recently in March 2018, the PCE price index was up 2.0 percent from a year ago (Bureau of Economic Analysis)

Consumer prices declined 0.4 percent in 2009, but have risen each year since 2010. However, inflation, as measured by the overall **U.S. Consumer Price Index** (CPI), has remained moderate in recent years. In 2017, the overall CPI rose 2.1 percent. In each of the past five months, the CPI has been up by more than 2.0 percent from a year ago. (U.S. Bureau of Labor Statistics).

Oil prices have risen sharply over the past year. In 2017, the average price of oil rose 17.9 percent. Similarly, in the first quarter of 2018, the price of oil was up 22.6 percent from a year ago. (Federal Reserve Bank of St. Louis) As a result of higher oil prices, retail gasoline prices have also increased substantially. Since the end of 2017, the price of unleaded gasoline has risen by 48 cents (21.3 percent). (U.S. Energy Information Administration).

Oil Prices Up Significantly over Last Two Years But Down Sharply from 2014



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 (20 straight months) and non-manufacturing sectors (99 straight months) as well as the overall economy (108 straight months).

Consumer sentiment is up from a year ago while business confidence is down slightly from last year.

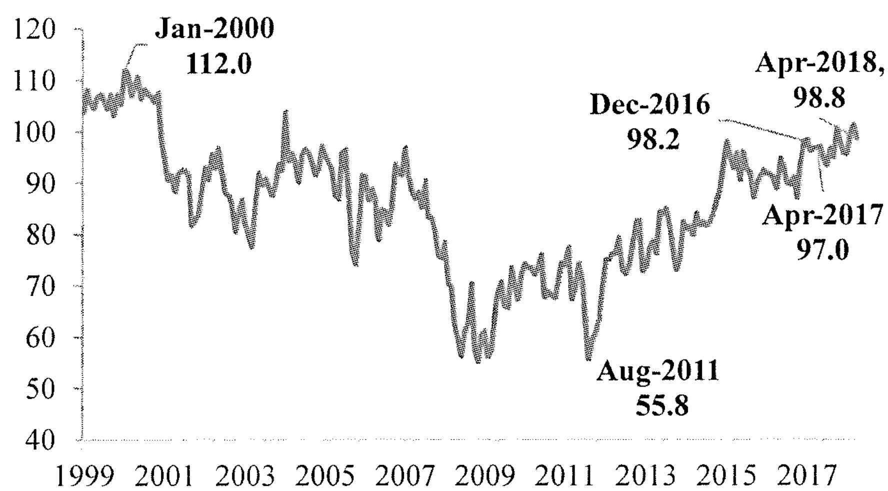
Since January 2018, the stock market has decreased substantially from last year.

The **ISM (Institute for Supply Management) manufacturing index**, known as the PMI (Purchasing Management Index) has dropped a combined 4.7 points over the last two months (March 2018 and April 2018). However, the April 2018 reading was up 1.8 points from last April. At 57.3, the PMI remained above 50.0 for the 20th straight month. (A reading above 50.0 indicates an expanding sector.) Taken together, the PMI indicates continued manufacturing sector growth. The April 2018 PMI signaled an expanding *overall* economy for the 108th consecutive month.

In April 2018, the **ISM non-manufacturing index (NMI)** fell 3.1 points over the last three months and is down 0.5 of a point from a year ago. However, at 55.9, the April 2018 NMI signaled the 99th straight month of an expanding service sector.

After rising to 101.4 (the series' highest reading since January 2004) in March 2018, the **University of Michigan index of consumer sentiment** fell 2.6 points in April. However, the April 2018 reading was up 1.8 points from April 2017.

Consumer Sentiment Trending Upward
Well Above August 2011 Trough



Source: University of Michigan Survey of Consumers.

The **Conference Board Measure of CEO Confidence Index** has risen in each of the past two quarters. However, at 65, the 2018 first quarter index reading is down three points from a year ago.

After peaking in late January 2018, stock prices have fallen sharply. Between late January and early April, the **Wilshire 5000 Index** dropped 10.0 percent. On net, the Index gained value in April. Consequently, the index is down 7.5 percent from its January peak and off 1.0 percent year-to-date.

The **ECRI weekly leading index growth rate** decelerated slightly since the January 2018 Consensus Conference. Between January 11, 2018 and late April 2018, the rate slowed from 4.6 percent to 4.1 percent.

Vehicle Sales and Production

After setting new record highs in 2015 and 2016, light vehicle sales fell slightly in 2017.

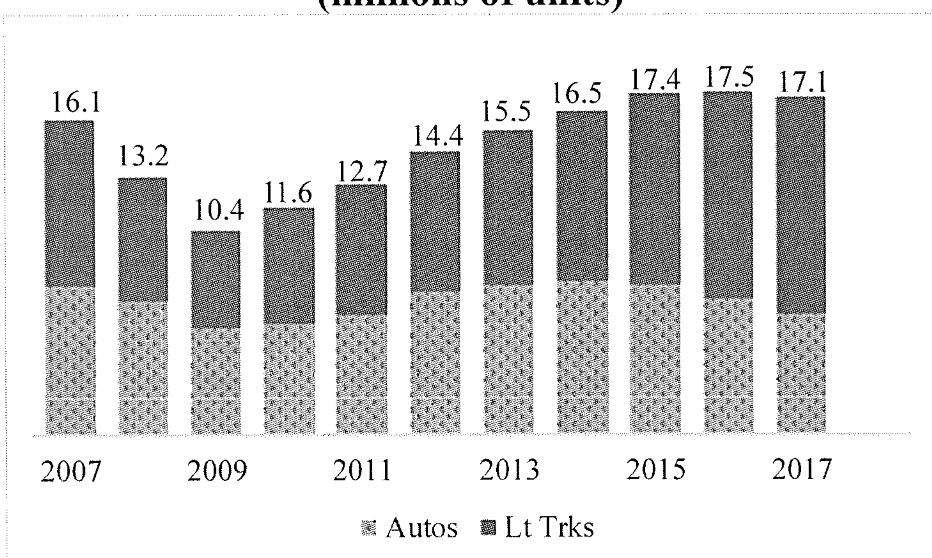
Year-to-date through April, 2018 sales averaged a 17.1 million unit annualized pace – essentially matching the average pace over the first four months of 2017.

Light truck sales continue to account for more than 60.0 percent of light vehicle sales with year-to-date 2018 light truck sales comprising 68.4 percent of light vehicle sales.

After rising each year from 2010 to 2016, U.S. vehicle production fell in 2017.
Year-to-date through March 2018, national production is down 5.6 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. However, annual light vehicle sales fell in 2017 – marking the first calendar year sales decline since 2009. However, at 17.1 million units, light vehicle sales remained strong in 2017. In April 2018, light vehicle sales exceeded a 16.0 million unit annual rate for the 62nd straight month.

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



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. April 2018 marked the 25th straight month that light trucks sales share exceeded 60.0 percent. Year-to-date, 2018 light truck sales account for 68.4 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 2.5 percent 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, 2018 national vehicle production is down 5.6 percent.

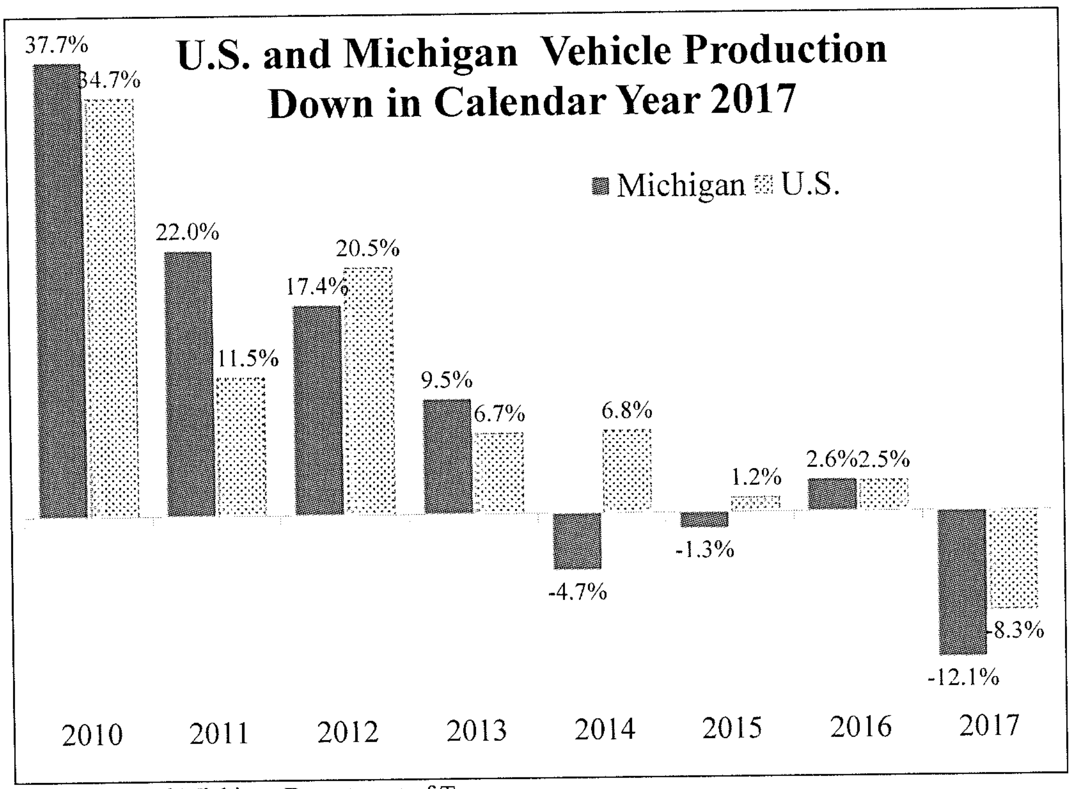
Current Michigan Economic Conditions

Vehicle Production

In 2017, 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 three months of 2018, Michigan vehicle production is down 15.6 percent compared to a 5.6 percent decline nationally.

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. In the first quarter of 2018, Michigan share was down 2.0 points to 16.7 percent.



Automotive News and Michigan Department of Treasury.

Employment

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

Michigan wage and salary employment in 2017 and has increased for the past seven years.

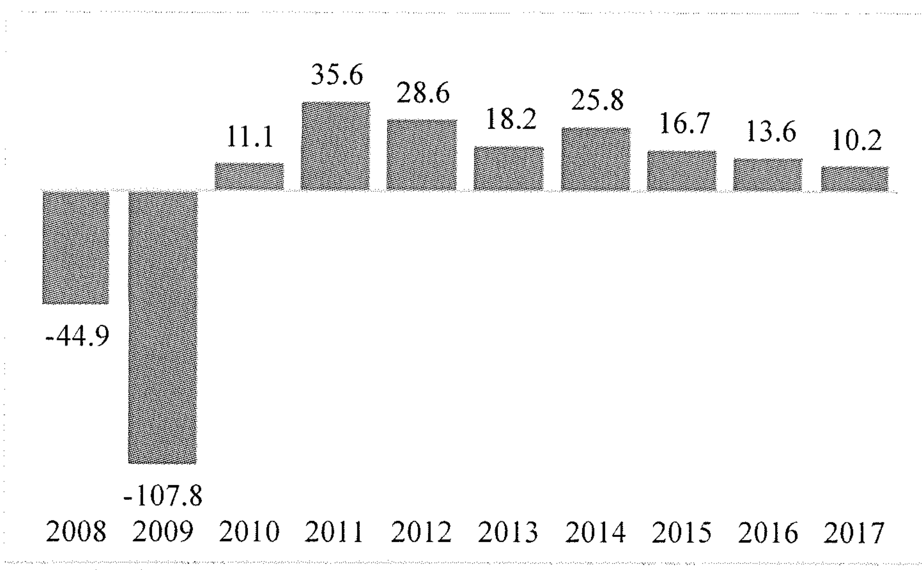
Michigan manufacturing employment increased in 2017 and rose for the eighth straight year.

In 2017, **Michigan wage and salary employment** rose for a seventh straight year with 1.2 percent growth. For the first quarter of 2018, wage and salary employment has increased by 29,500 jobs. 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). At 4.424 million jobs in March 2018, this total is the highest level since February 2003.

In March 2018, Michigan wage and salary employment was up by 61,300 jobs compared with March 2017 employment. The 61,300 jobs increase represents a 1.4 percent increase in employment between March 2017 and March 2018 – ranking 18th fastest among U.S. states.

Michigan's overall wage and salary employment has increased 15.3 percent **since the end of the Great Recession** (June 2009). The 15.3 percent growth represents the 15th strongest growth rate among all U.S. states.

Michigan Manufacturing Employment Change (thousands of jobs)

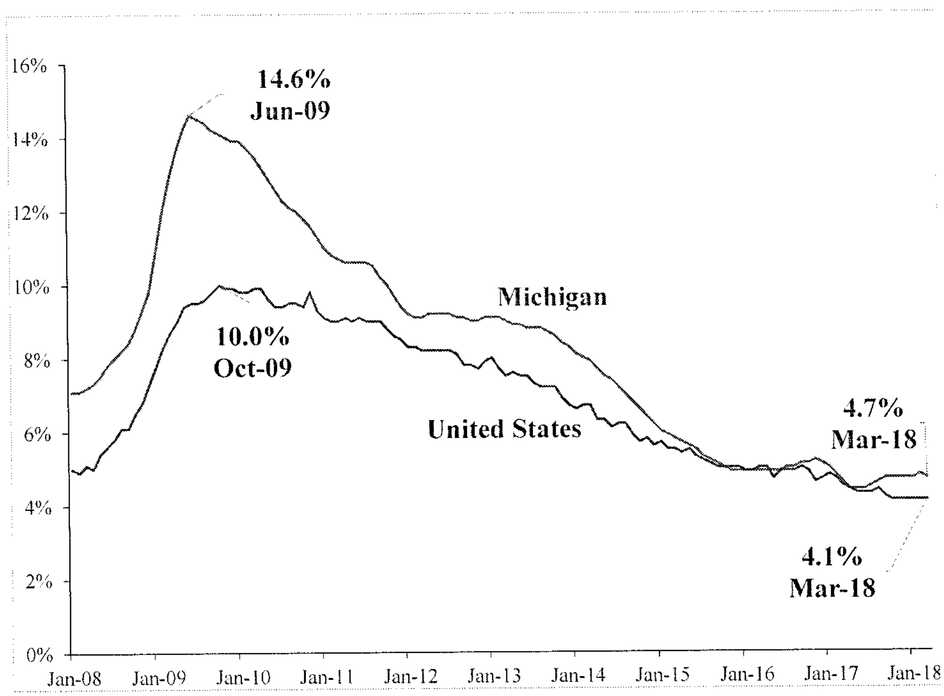


Source: Bureau of Labor Statistics, U.S. Department of Labor.

Manufacturing employment in Michigan increased each year from 2010 to 2017. Over the past eight years, State manufacturing employment increased by 159,800 jobs. Manufacturing employment accounted for 29.3 percent of the overall State employment increase over the past seven years, even while comprising only 11.8 percent of the overall *level* of base year 2009 Michigan wage and salary employment. In 2017, manufacturing employment accounted for 19.5 percent of the overall annual State wage and salary employment increase.

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, in each year between 2010 and 2017, inclusive, the State's unemployment rate decreased. 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 three months of 2018, the Michigan unemployment rate has averaged 4.7 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 then fell steadily through mid-2015. Between May 2015 and September 2016, the gap ranged narrowly between +0.20 of a percentage point and -0.10 of a percentage point. After spiking to 0.60 of a percentage point in November 2016, the gap fell through early 2017. Between February 2017 and August 2017, the gap ranged narrowly between

0.0 of a percentage point and 0.20 of a percentage point. Most recently (September 2017-March 2018), the gap increased and ranged between 0.50 of a percentage point and 0.70 of a percentage point.

Compared to the number of Michigan unemployed at the end of the Great Recession (June 2009), March 2018 unemployment was down by 495,100 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

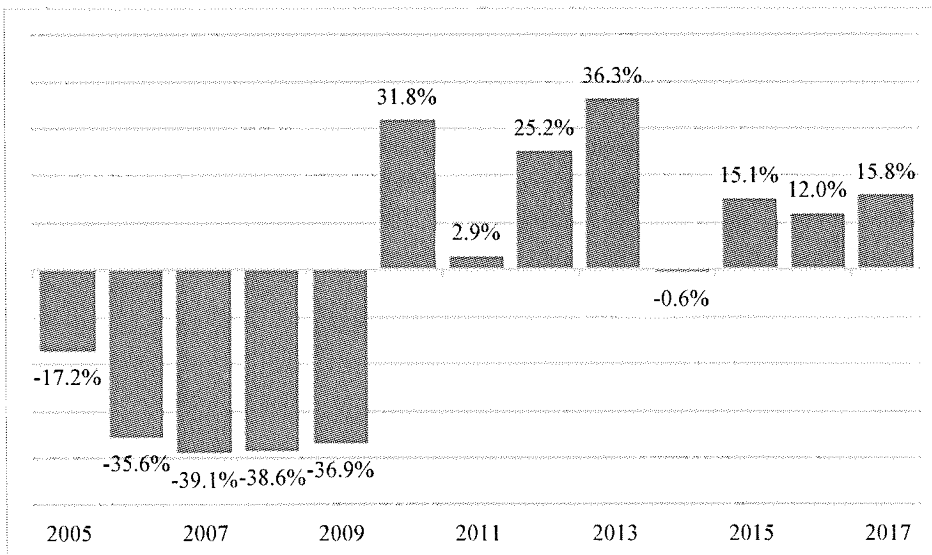
Michigan was hit disproportionately hard by the housing bust due to sharply declining employment. However, the State's housing market has seen signs of improvement in recent years.

Michigan housing unit authorizations have risen in all but one year since 2010. In 2017 Michigan housing authorizations were up 15.8 percent, compared with 6.2 percent growth nationally.

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

Michigan housing unit authorizations increased in all but one year between 2010 and 2017, inclusive. In 2010, 2012 and 2013, annual increases exceeded 25 percent. In 2017, State authorizations increased 15.8 percent. Nationally, in 2017, authorizations increased only 6.2 percent.

Michigan Housing Unit Authorizations
Percent Change



Source: U.S. Census Bureau.

The **share of mortgage properties underwater (negative equity)** in Michigan is substantially higher than the national average. In the fourth quarter of 2017, nationwide, 4.9 percent of residential properties with mortgages were underwater. In Michigan, 6.4 percent of such properties were underwater – ranking Michigan 10th highest among U.S. states. (CoreLogic) Further, according to RealtyTrac, in the second quarter of 2017, the Detroit metro area had the 8th highest share of seriously underwater homes among the 88 U.S. metro areas with a population of at least 500,000 people and with sufficient data available (16.3 percent).

Personal Income

Michigan total personal has continued to expand but grew slower than the national average in 2017.

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

Michigan total personal income increased 2.6 percent in 2017, which was below the U.S. growth rate of 3.1 percent and was the 33rd strongest rate in the nation. 2017 annual income was held back by a weak growth rate in the fourth quarter, which ranked 40th nationally for the quarter. For the previous two years, Michigan's total personal income growth rate was higher than the national average. From the period of 2009-2017, total personal income grew 34.1 percent and ranked 21st nationally. Of Michigan's 2.6 percent growth rate in 2017, net earnings of 1.8 percentage points drove most of the growth rate. Dividends, interest, and rent accounted for 0.5 percentage points and transfer receipts were 0.3 percentage points. Total earnings grew $9.4 billion in Michigan for all industries. This was led by construction (+$1.25 billion), professional, scientific, and technical services (+$1.07 billion), and durable goods manufacturing (+$1.06 billion). Michigan's growth in durable goods manufacturing earnings represented 7.6 percent of the U.S. total, which ranked 4th highest nationally. Farm earnings in Michigan had another tough year and decreased in 2017 from 2016 by $196 million. This is the sixth consecutive annual decrease; 2017 farm income was the lowest level since 2003.

On a **per capita** basis, Michigan had the 25th highest growth rate in the nation at 2.3%. Per capital personal income totaled $45,255 in 2017, up from $44,231 in 2016. Although the growth rate slowed in 2017, Michigan had the 10th highest growth rate in 2016 and 5th highest in 2015. From 2009 to 2017, per capita income grew by 33.2%, which ranked 5th nationally.

SECTION III

Administration Economic Forecast

Administration Economic Forecast Summary

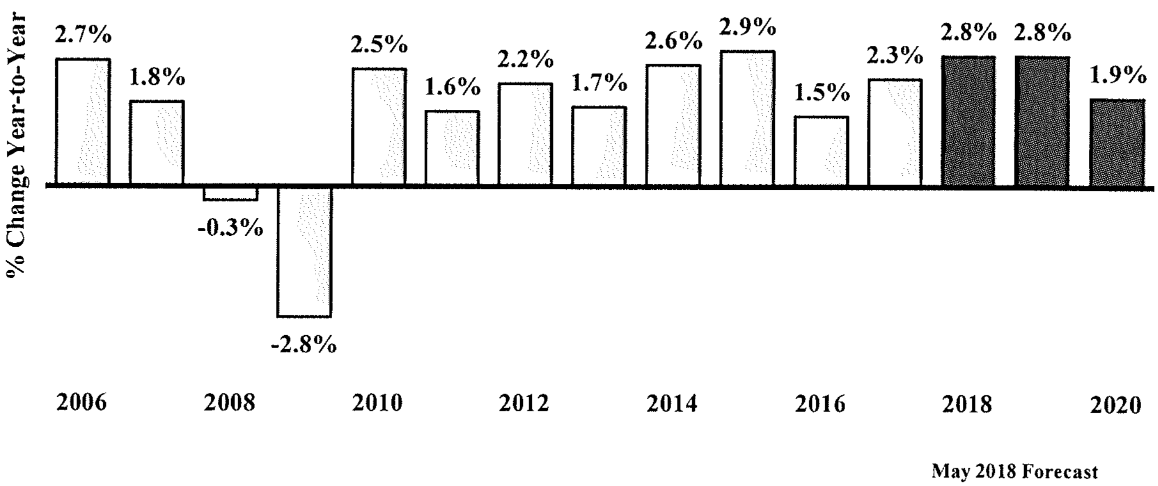
Table 1 (next page) provides a one-page summary table of the Administration forecast of the U.S. and Michigan economies.

2018, 2019 and 2020 U.S. Economic Outlook

Summary

Inflation adjusted GDP rose 2.3 percent in 2017, marking the eighth straight year of annual growth, and is expected to increase 2.8 percent in 2018, 2.8 percent in 2019 and 1.9 percent in 2020.

Real GDP Forecast to Rise for 11th Straight Year in 2020



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

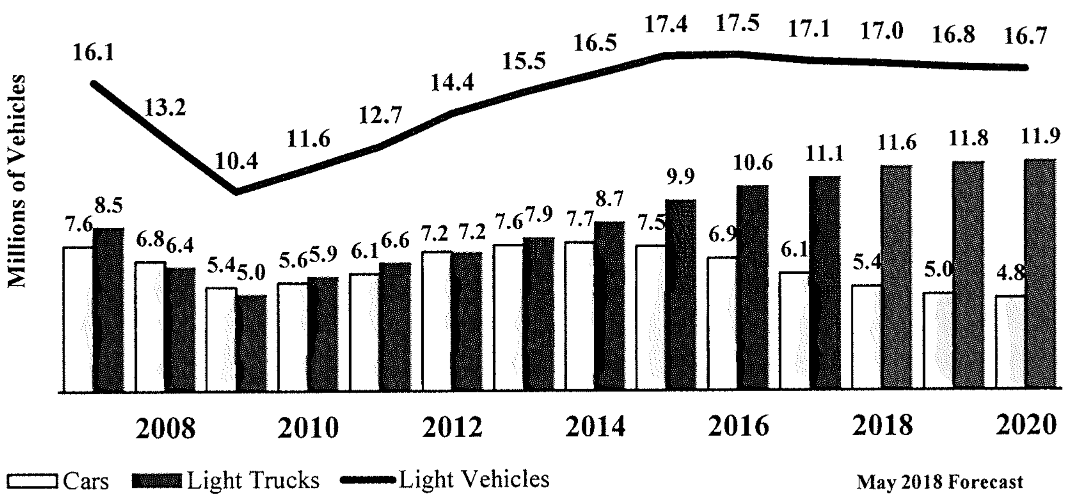
In 2017, light vehicle sales fell to 17.1 million units. Light vehicle sales are expected to change little over the forecast and total 17.0 million units in 2018, 16.8 million units in 2019, and 16.7 million units in 2020.

Table 1
Administration Economic Forecast

May 2018

	Calendar 2016 Actual	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
United States									
Real Gross Domestic Product (Billions of Chained 2009 Dollars)	$16,716	$17,096	2.3%	$17,575	2.8%	$18,067	2.8%	$18,410	1.9%
Implicit Price Deflator GDP (2009 = 100)	111.4	113.5	1.8%	115.8	2.0%	118.3	2.2%	121.0	2.3%
Consumer Price Index (1982-84 = 100)	240.007	245.120	2.1%	250.923	2.4%	256.337	2.2%	262.055	2.2%
Consumer Price Index - Fiscal Year (1982-84 = 100)	238.939	243.841	2.1%	249.603	2.4%	254.800	2.1%	260.712	2.3%
Personal Consumption Deflator (2009 = 100)	110.8	112.7	1.7%	114.8	1.9%	117.0	1.9%	119.3	2.0%
3-month Treasury Bills Interest Rate (percent)	0.3	0.9		2.0		2.8		3.5	
Unemployment Rate - Civilian (percent)	4.9	4.4		4.0		3.6		3.8	
Wage and Salary Employment (millions)	144.352	146.624	1.6%	148.970	1.6%	151.060	1.4%	152.420	0.9%
Housing Starts (millions of starts)	1.174	1.203	2.5%	1.293	7.1%	1.337	3.3%	1.355	1.4%
Light Vehicle Sales (millions of units)	17.5	17.1	-2.1%	17.0	-0.6%	16.8	-1.2%	16.7	-0.6%
Passenger Car Sales (millions of units)	6.9	6.1	-11.6%	5.4	-11.5%	5.0	-7.4%	4.8	-4.0%
Light Truck Sales (millions of units)	10.6	11.0	4.1%	11.6	5.5%	11.8	1.7%	11.9	0.8%
Big 3 Share of Light Vehicles (percent)	42.7	42.0		42.1		42.5		42.4	
Michigan									
Wage and Salary Employment (thousands)	4,319	4,371	1.2%	4,419	1.1%	4,459	0.9%	4,490	0.7%
Unemployment Rate (percent)	5.0	4.6		4.6		4.4		4.6	
Personal Income (millions of dollars)	$439,361	$450,847	2.6%	$469,332	4.1%	$490,921	4.6%	$510,558	4.0%
Real Personal Income (millions of 1982-84 dollars)	$197,762	$198,702	0.5%	$202,145	1.7%	$206,880	2.3%	$210,226	1.6%
Wages and Salaries (millions of dollars)	$222,823	$229,335	2.9%	$239,884	4.6%	$250,919	4.6%	$260,203	3.7%
Detroit Consumer Price Index (1982-84 = 100)	222.167	226.896	2.1%	232.176	2.3%	237.297	2.2%	242.861	2.3%
Detroit CPI - Fiscal Year (1982-84 = 100)	221.137	225.517	2.0%	231.158	2.5%	236.256	2.2%	241.771	2.3%

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 seven years with the unemployment rate dropping from a near record high 9.6 percent in 2010 to 4.4 percent in 2017. The U.S. rate is forecast to fall to 4.0 percent in 2018 and to decline to 3.6 percent in 2019. In 2020, the national unemployment rate is expected to rise to 3.8 percent.

U.S. wage and salary employment increased 1.6 percent in 2017. U.S. employment is forecast to increase 1.6 percent in 2018, 1.4 percent in 2019 and 0.9 percent in 2020. The U.S. employment level rose to a new record annual high each year from 2014 to 2017. With forecasted increases, calendar year 2020 national employment is expected to be 10.5 percent above the pre-2014 peak employment level.

U.S. consumer price inflation accelerated to 2.1 percent in 2017. Inflation is forecast to accelerate to 2.4 percent in 2018 and then decelerate to 2.2 percent in 2019 and then remain unchanged at 2.2 percent in 2020. The personal consumption price deflator inflation rate is projected to accelerate from 1.7 percent in 2017 to 2.0 percent in 2020.

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. The Treasury bill rate is forecast to rise to 2.0 percent in 2018, 2.8 percent in 2019 and 3.5 percent in 2020 – 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 3.9 percent in 2018, the corporate rate is projected to increase to 4.3 percent in 2019 and 4.5 percent in 2020.

The **30-year fixed mortgage rate** fell to 3.65 percent in 2016. Mortgage rates rose to 4.0 percent in 2017 and are forecast to increase to 4.5 percent in 2018, 5.0 percent in 2019 and 5.3 percent in 2020.

Throughout the forecast horizon, the housing market is expected to strengthen and housing starts are forecast to increase each year. Consequently, **housing starts** in 2020 (1.35 million units) are expected to be 12.6 percent higher than starts in 2017. Nevertheless, 2020 starts will remain well below the average 1.7 million annual starts in the ten years before the housing bust.

Assumptions

After falling an estimated 0.2 percent in 2017, **real (inflation-adjusted) federal government expenditures** are forecast to rise 3.5 percent in calendar year (CY) 2018, increase 6.1 percent in CY 2019 and then rise 1.8 percent in CY 2020.

The level of **real state and local government expenditures** is expected to increase in each year of the three-year forecast horizon. Real state and local government expenditures are expected to rise 0.6 percent in 2018, 0.6 percent in 2019 and 0.7 percent in 2020.

In 2017, **oil prices** averaged $51 per barrel. Oil prices are forecast rise to $68 per barrel in 2018, increase to $72.80 in 2019 and then fall to $70.80 per barrel in 2020.

The Fed is expected to raise the **federal funds rate** by 25 basis points four times in 2018 (including the already implemented March increase) and raise the rate three times both in 2019 and in 2020. As a result, the federal funds rate is assumed to rise from a 1.25-1.50 percent range percent in late 2017 to 3.75-4.00 percent range in late 2020.

The **savings rate** is assumed to rise to 3.5 percent in 2018, 4.2 percent in 2019 and 4.5 percent in 2020.

Rest-of-world growth is projected to equal 2.1 percent in 2018. The growth rate is then expected to slow slightly to 1.9 percent in 2019 and then remained unchanged at 1.9 percent in 2020.

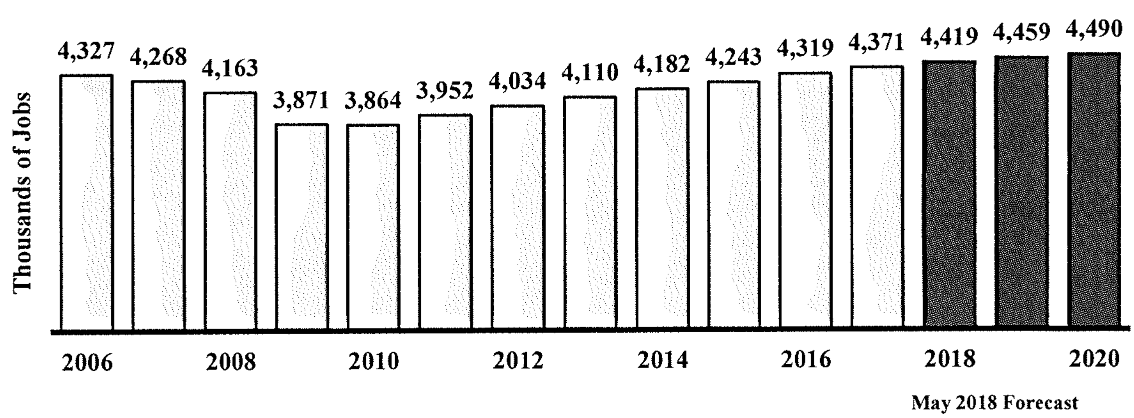
2018, 2019 and 2020 Michigan Economic Outlook

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 forecast to grow (although more slowly) in each of the next three years: 1.1 percent in 2018, 0.9 percent in 2019 and 0.7 percent in 2020. At 4.49 million jobs, the forecasted Michigan wage and salary employment level in 2020 would represent the State's highest employment level since 2001. However, forecasted 2020 Michigan employment would remain 186,000 jobs (4.0 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. Private non-manufacturing employment is forecast to gain 42,800 jobs in 2018, 38,400 jobs in 2019 and 22,400 jobs in 2020.

In 2017, **State manufacturing employment** rose 1.7 percent. State manufacturing employment is projected to decline 0.1 percent in 2018, remain essentially unchanged in 2019 and then rise 0.5 percent in 2020. Consequently, Michigan manufacturing employment is forecast to increase a cumulative 2,900 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 May 2018 Administration Forecast.

In 2017, **transportation equipment employment** rose 1.8 percent. The sector's employment is then projected to decrease 1.6 percent in 2018, fall 1.0 percent in 2019 and then rise 0.1 percent in 2020. Forecasted 2020 transportation equipment employment of 182,900 jobs would be down 45.5 percent from the sector's CY 2000 peak employment of 335,500 jobs.

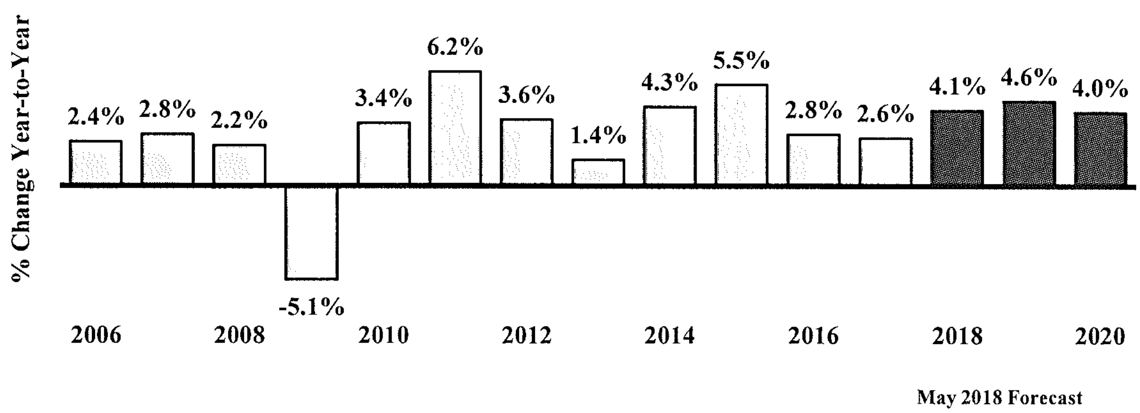
The **Michigan unemployment rate** dropped to 4.6 percent in 2017 from 5.0 percent in 2016. In 2018, the rate is projected to remain unchanged at 4.6 percent. In 2019, the Michigan unemployment rate is forecast to fall to 4.4 percent and then rise to 4.6 percent in 2020.

Michigan wages and salaries are forecast to increase 4.6 percent in 2018, 4.6 percent in 2019 and 3.7 percent in 2020. **Michigan personal income** rose 2.8 percent in 2016 and increased 2.6 percent in 2017. State personal income is forecast to rise 4.1 percent in 2018, 4.6 percent in 2019 and 4.0 percent in 2020.

The **Detroit CPI** rose 2.1 percent in 2017. Over the forecast horizon, the overall price level is projected to rise each year with increases of 2.3 percent in 2018, 2.2 percent in 2019 and 2.3 percent in 2020.

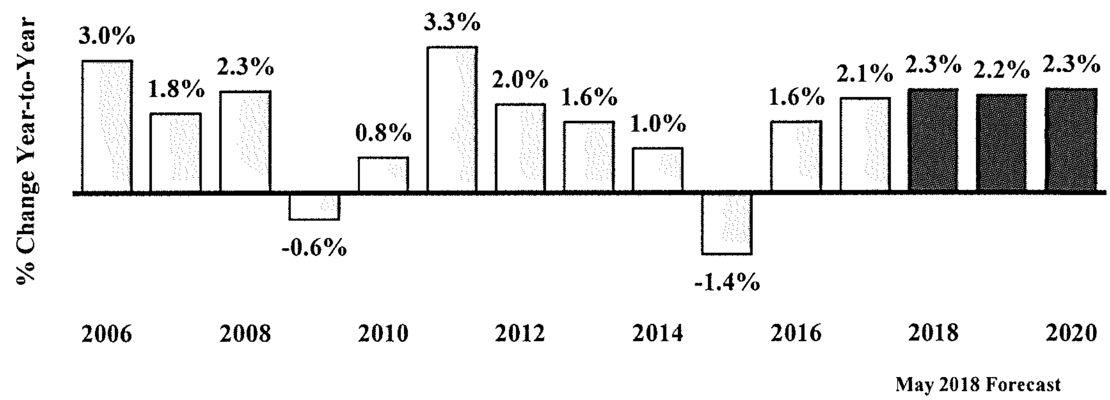
Real (inflation adjusted) Michigan personal income grew 0.5 percent in 2017. In 2018, real Michigan personal income growth is forecast to accelerate to 1.7 percent, and 2.3 percent in 2019. In 2020, real Michigan personal income growth is forecast to decelerate to 1.6 percent.

Michigan Personal Income Reports Solid Growth



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

Consumer Prices Forecast to Record Faster Growth
Detroit CPI



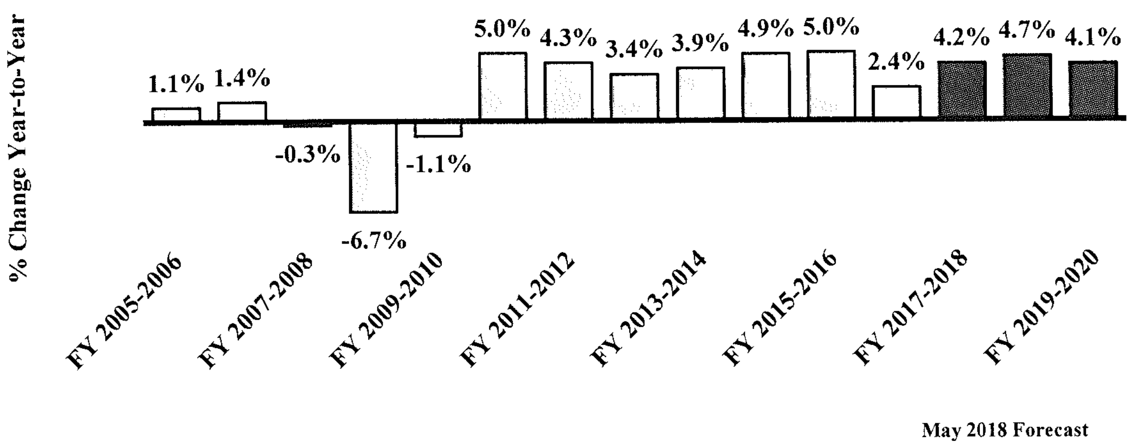
Source: U.S. Bureau of Labor Statistics and Administration Forecast, May 2018.

Fiscal Year Economics

Michigan's largest taxes are the individual income tax ($11.4 billion in FY 2017) and sales and use taxes ($8.9 billion). Income tax withholding is the largest income tax component of the income tax. Withholding ($9.3 billion) is most affected by growth in wages and salaries. Over the forecast horizon, **Michigan wages and salaries** growth is projected to accelerate to 4.2 percent in FY 2018, 4.7 percent in FY 2019 and 4.1 percent in FY 2020.

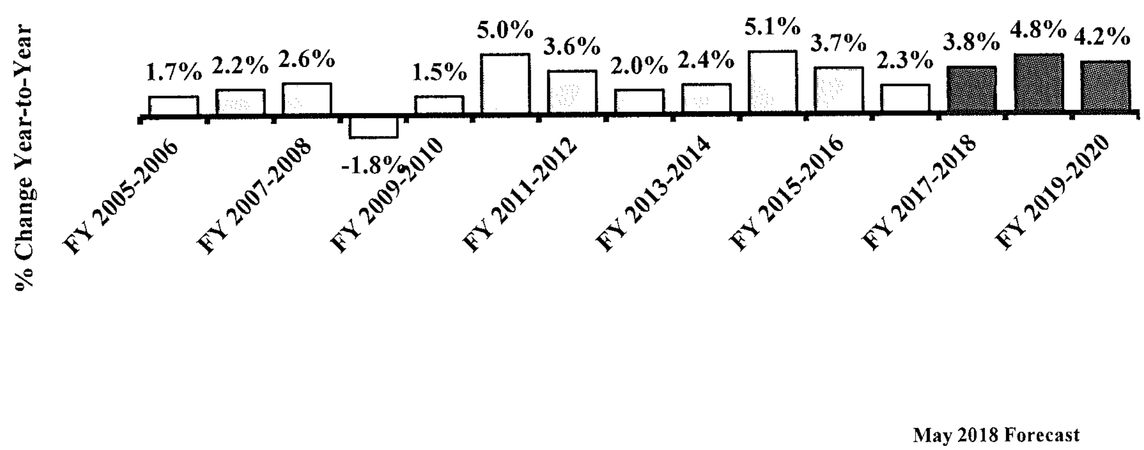
Sales and use taxes depend primarily on **Michigan disposable (after tax) income** and inflation. Disposable income is projected to increase 3.8 percent in FY 2018, 4.8 percent in FY 2019 and 4.2 percent in FY 2020. Prices, as measured by the **Detroit CPI**, are forecast to rise 2.5 percent in FY 2018, to increase 2.0 percent in FY 2019 and to rise 2.6 percent in FY 2020.

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, May 2018.

Michigan Disposable Income Increases
Basis for Sales and Use Tax Collections



Source: Research Seminar in Quantitative Economics, University of Michigan, and Administration Forecast, May 2018.

Forecast Risks

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

Consumer and Economic Sentiment. High sentiment is the result of higher expectations for U.S. macroeconomy. To the extent to which these higher expectations are disappointed, sentiment could drop sharply and, in turn, weaken the macroeconomy.

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

Light Vehicle Sales. According to the forecast, light vehicle sales fall slightly over the forecast period but remain at historically high levels in 2018, 2019 and 2020. 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 a signed 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 of 2018. The Act increased federal government spending by nearly $300 billion above budget caps set in 2011. Risks surrounding the tax reform package and the 2018 Budget Act include the size of the stimulative macroeconomic impact of the legislation and that stimulation's impact on inflation as well as size of the ultimate impact of the enacted legislation on the federal debt. In addition, risk surrounds the economic impact of possible international trade actions (including possible major changes to current international trade agreements or the imposition of new tariffs on U.S. imports – which might lead to retaliatory trade actions by other nations against the U.S).

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. Over the forecast horizon, oil prices are projected to rise from the lower $60 per barrel range to $70 per barrel range by the third quarter of 2018. Oil prices are then expected to rise slowly to the mid-$70 range at the end of 2019 before returning to $70 by the end of the forecast horizon. Geopolitical concerns, increased demand, or a major supply disruption could raise oil prices well above the assumed range. In addition, stronger/weaker foreign economies than predicted will raise/lower oil prices from the assumed price levels.

- The net impact of oil price's more immediate impact on capital investment and financial markets and oil price's impact on consumer spending and household investment.

Monetary Policy. While indicating that only gradual rate increases will be warranted, 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. Given the FOMC's most recent statement, the Committee 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, the Fed has explicitly left open the possibility that it might initiate another round of quantitative easing if economic conditions warrant.

Housing Market. Projected 2020 housing starts are 12 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 2020 starts total 1.35 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.

SECTION IV

Administration
Revenue Estimates

Administration Revenue Estimates
May 16, 2018

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 2017 is the base year. Any non-economic changes to the taxes occurring in FY 2018, FY 2019 and FY 2020 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 $10,485.8 million, a 2.8 percent increase compared to FY 2017. The FY 2018 GF-GP revenue estimate is $178.1 million above the January 2018 Consensus estimate. SAF revenue is forecast to be $13,219.6 million, representing a 4.2 percent increase compared to FY 2017. The FY 2018 SAF estimate is $135.1 million above the January 2018 Consensus estimate (see Table 2).

Table 2

FY 2017-18 Administration Revenue Estimates

(millions)

	Administration May 16, 2018 Amount	Growth	Change from Jan 2018 Consensus
General Fund - General Purpose			
Baseline Revenue	$11,733.1	6.1%	---
Tax Cut Adjustments	($1,247.3)	---	---
Net Resources	$10,485.8	2.8%	$178.1
School Aid Fund			
Baseline Revenue	$13,225.8	3.9%	---
Tax Cut Adjustments	($6.2)	---	---
Net Resources	$13,219.6	4.2%	$135.1
Combined			
Baseline Revenue	$24,958.9	4.9%	---
Tax Cut Adjustments	($1,253.5)	---	---
Net Resources	$23,705.4	3.6%	$313.2

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 $10,441.9 million, a 0.4 percent decrease compared to FY 2018. The FY 2019 GF-GP revenue estimate is $102.3 million above the January 2018 Consensus estimate. SAF revenue is forecast to be $13,538.6 million; representing a 2.4 percent increase compared to FY 2018. The FY 2019 SAF estimate is $74.6 million above the January Consensus estimate (see Table 3).

Table 3

FY 2018-19 Administration Revenue Estimates

(millions)

	Administration May 16, 2018		Change from Jan 2018
	Amount	Growth	Consensus
General Fund - General Purpose			
Baseline Revenue	$11,881.5	1.3%	---
Tax Cut Adjustments	($1,439.6)	---	---
Net Resources	$10,441.9	-0.4%	$102.3
School Aid Fund			
Baseline Revenue	$13,539.2	2.4%	---
Tax Cut Adjustments	($0.6)	---	---
Net Resources	$13,538.6	2.4%	$74.6
Combined			
Baseline Revenue	$25,420.7	1.9%	---
Tax Cut Adjustments	($1,440.2)	---	---
Net Resources	$23,980.5	1.2%	$176.9

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 $10,474.2 million, a 0.3 percent increase compared to FY 2019. The FY 2019 GF-GP revenue estimate is $60.7 million above the January 2018 Consensus estimate. SAF revenue is forecast to be $13,870.0 million; representing a 2.4 percent increase compared to FY 2019. The FY 2020 SAF estimate is $47.3 million above the January Consensus estimate (see Table 3).

Table 4

FY 2019-20 Administration Revenue Estimates

(millions)

	Administration May 16, 2018 Amount	Growth	Change from Jan 2018 Consensus
General Fund - General Purpose			
Baseline Revenue	$12,163.7	2.4%	---
Tax Cut Adjustments	($1,689.5)	---	---
Net Resources	$10,474.2	0.3%	$60.7
School Aid Fund			
Baseline Revenue	$13,889.0	2.6%	---
Tax Cut Adjustments	($19.0)	---	---
Net Resources	$13,870.0	2.4%	$47.3
Combined			
Baseline Revenue	$26,052.7	2.5%	---
Tax Cut Adjustments	($1,708.5)	---	---
Net Resources	$24,344.2	1.5%	$108.0

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 2016 revenue is compared to CY 2014 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 2016 revenues were $8.1 billion below the revenue limit. State revenues will also be well below the limit for FY 2017 through FY 2020. FY 2017 revenues are expected to be $8.6 billion below the limit, FY 2018 revenues $8.6 billion below the limit, FY 2019 revenues $9.0 billion below the limit, and FY 2020 revenues $9.9 billion below the limit (See Table 5).

Table 5

Administration Revenue Limit Calculation

(millions)

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
	Final June 2017	Admin May 2018	Admin May 2018	Admin May 2018	Admin May 2018
Revenue Subject to Limit	$30,188.4	$31,692.7	$33,002.0	$33,759.5	$34,635.1
Revenue Limit	**CY 2014**	**CY 2015**	**CY 2016**	**CY 2017**	**CY 2017**
Personal Income	$403,726	$424,807	$439,361	$450,847	$469,332
Ratio	9.49%	9.49%	9.49%	9.49%	9.49%
Revenue Limit	$38,313.6	$40,314.2	$41,695.4	$42,785.4	$44,539.6
Amount Under (Over) Limit	**$8,125.2**	**$8,621.5**	**$8,693.4**	**$9,025.9**	**$9,904.5**

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.

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. If real personal income declines, the percentage deficiency under zero is multiplied by the current fiscal year's GF-GP revenue to determine the withdrawal available for the current fiscal year. If the change in real personal income is between 0 and 2 percent, no pay-in or withdrawal is indicated.

Real calendar year personal income for Michigan is expected to increase 0.9 percent in 2017. Thus, the formula has no pay-in for FY 2018 (See Table 6). In 2018, real calendar year personal income for Michigan is forecast to increase 2.1 percent, so the formula calls for a pay-in for FY 2019 of $10.5 million (See Table 7). In 2019, real calendar year personal income for Michigan is forecast to increase 2.8 percent, so the formula calls for a pay-in of $73.1 million in FY 2020 (See Table 8). Based on the personal income numbers, there is no pay-out in FY 2020 (See Table 9).

Table 6

Budget and Economic Stabilization Fund Calculation Based on CY 2017 Personal Income Growth Administration Calculation

	CY 2016	CY 2017
Michigan Personal Income	$ 439,361 [1]	$ 450,847 [1]
less Transfer Payments	$ 93,520 [1]	$ 94,836 [1]
Income Net of Transfers	$ 345,841	$ 356,011
Detroit CPI	2.204 [2]	2.249 [2]
for 12 months ending	(June 2016)	(June 2017)
Real Adjusted Michigan Personal Income	$ 156,920	$ 158,331
Change in Real Adjusted Personal Income		0.9%
Between 0 and 2%		0.0%
GF-GP Revenue Fiscal Year 2016-2017		$ 10,195.5

BSF Pay-In Calculated for FY 2018	FY 2017-2018 NO PAY-IN
BSF Pay-Out Calculated for FY 2017	FY 2016-2017 NO PAY-OUT

Notes:

[1] Personal Income and Transfer Payments, Administration Forecast, May 2018.

[2] Detroit Consumer Price Index, Administration Forecast, May 2018.

Table 7

Budget and Economic Stabilization Fund Calculation
Based on CY 2018 Personal Income Growth
Administration Calculation

	CY 2017	CY 2018
Michigan Personal Income	$ 450,847 [1]	$ 469,332 [1]
less Transfer Payments	$ 94,836 [1]	$ 97,871 [1]
Income Net of Transfers	$ 356,011	$ 371,461
Detroit CPI	2.249 [2]	2.298 [2]
for 12 months ending	(June 2017)	(June 2018)
Real Adjusted Michigan Personal Income	$ 158,331	$ 161,630
Change in Real Adjusted Personal Income		2.1%
Excess over 2%		0.1%
GF-GP Revenue Fiscal Year 2017-2018		$ 10,485.8

	FY 2018-2019
BSF Pay-In Calculated for FY 2019	$ 10.5
	FY 2017-2018
BSF Pay-Out Calculated for FY 2018	NO PAY-OUT

Notes:

[1] Personal Income and Transfer Payments, Administration Forecast, May 2018.

[2] Detroit Consumer Price Index, Administration Forecast, May 2018.

Table 8

Budget and Economic Stabilization Fund Calculation
Based on CY 2019 Personal Income Growth
Administration Calculation

	CY 2018		CY 2019	
Michigan Personal Income	$ 469,332	(1)	$ 490,921	(1)
less Transfer Payments	$ 97,871	(1)	$ 101,932	(1)
Income Net of Transfers	$ 371,461		$ 388,989	
Detroit CPI	2.298	(2)	2.344	(2)
for 12 months ending	(June 2018)		(June 2019)	
Real Adjusted Michigan Personal Income	$ 161,630		$ 165,938	
Change in Real Adjusted Personal Income			2.7%	
Excess over 2%			0.7%	
GF-GP Revenue Fiscal Year 2018-2019			$ 10,441.9	

	FY 2019-2020
BSF Pay-In Calculated for FY 2020	$ 73.1
	FY 2018-2019
BSF Pay-Out Calculated for FY 2019	NO PAY-OUT

Notes:

(1) Personal Income and Transfer Payments, Administration Forecast, May 2018.

(2) Detroit Consumer Price Index, Administration Forecast, May 2018.

Table 9

Budget and Economic Stabilization Fund Calculation
Based on CY 2020 Personal Income Growth
Administration Calculation

	CY 2019	CY 2020
Michigan Personal Income	$ 490,921 [1]	$ 510,558 [1]
less Transfer Payments	$ 101,932 [1]	$ 106,081 [1]
Income Net of Transfers	$ 388,989	$ 404,477
Detroit CPI	2.344 [2]	2.405 [2]
for 12 months ending	(June 2019)	(June 2020)
Real Adjusted Michigan Personal Income	$ 165,938	$ 168,156
Change in Real Adjusted Personal Income		1.3%
Between 0 and 2%		0.0%
GF-GP Revenue Fiscal Year 2019-2020		$ 10,474.2

	FY 2019-2020
BSF Pay-Out Calculated for FY 2020	NO PAY-OUT

Notes:

[1] Personal Income and Transfer Payments, Administration Forecast, May 2018.

[2] Detroit Consumer Price Index, Administration Forecast, May 2018.

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 2018 SAF revenue adjustment factor is calculated by dividing the sum of FY 2017 and FY 2018 SAF revenue by the sum of FY 2016 and FY 2017 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 2019, the SAF revenue adjustment factor is calculated to be 1.0311 (See Table 10). For FY 2020, the SAF revenue adjustment factor is calculated to be 1.0248 (See Table 11).

Table 10
Administration School Aid Revenue Adjustment Factor
For Fiscal Year 2019

	FY 2017	FY 2018	FY 2019
Baseline SAF Revenue	$12,732.1	$13,225.8	$13,539.2
Balance Sheet Adjustments	($47.0)	($6.2)	($0.6)
Net SAF Estimates	$12,685.1	$13,219.6	$13,538.6
Subtotal Adjustments to FY 2019 Base	$46.4	$5.6	$0.0
Baseline Revenue on a FY 2019 Base	$12,731.5	$13,225.2	$13,538.6

School Aid Fund Revenue Adjustment Calculation for FY 2019

Sum of FY 2017 & FY 2018	$12,731.5	+	$13,225.2	=	$25,956.7
Sum of FY 2018 & FY 2019	$13,225.2	+	$13,538.6	=	$26,763.8

FY 2019 Revenue Adjustment Factor **1.0311**

Note: Factor is calculated off a FY 2019 base year.

Table 11
Administration School Aid Revenue Adjustment Factor
For Fiscal Year 2020

	FY 2018	FY 2019	FY 2020
Baseline SAF Revenue	$13,225.8	$13,539.2	$13,889.0
Balance Sheet Adjustments	($6.2)	($0.6)	($19.0)
Net SAF Estimates	$13,219.6	$13,538.6	$13,870.0
Subtotal Adjustments to FY 2020 Base	($12.8)	($18.4)	$0.0
Baseline Revenue on a FY 2020 Base	$13,206.8	$13,520.2	$13,870.0

School Aid Fund Revenue Adjustment Calculation for FY 2020

Sum of FY 2018 & FY 2019	$13,206.8	+	$13,520.2	=	$26,727.0
Sum of FY 2019 & FY 2020	$13,520.2	+	$13,870.0	=	$27,390.2

FY 2020 Revenue Adjustment Factor **1.0248**

Note: Factor is calculated off a FY 2020 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 12 and 13). Tax totals for the income, sales, use, CIT/MBT, tobacco and casino taxes for all funds are also included (See Table 14).

Table 12
Administration General Fund General Purpose Revenue Detail
(millions)

	FY 2018		FY 2019		FY 2020	
	Amount	Growth	Amount	Growth	Amount	Growth
GF-GP Tax Amounts						
Income Tax	$7,295.0	8.4%	$7,024.6	-3.7%	$7,009.0	-0.2%
Sales	$1,264.2	3.3%	$1,313.2	3.9%	$1,349.5	2.8%
Use	$638.7	8.0%	$593.8	-7.0%	$586.7	-1.2%
Cigarette	$184.0	-1.3%	$182.0	-1.1%	$179.7	-1.3%
Beer & Wine	$53.0	3.7%	$54.0	1.9%	$55.0	1.9%
Liquor Specific	$56.0	2.4%	$57.0	1.8%	$58.0	1.8%
Single Business Tax	$5.0	NA	$0.0	NA	$0.0	NA
Insurance Co. Premium	$402.1	8.5%	$410.3	2.0%	$418.7	2.0%
CIT/MBT	$94.3	-76.5%	$327.5	247.3%	$323.9	-1.1%
Telephone & Telegraph	$35.0	-1.7%	$35.5	1.4%	$35.0	-1.4%
Oil & Gas Severance	$25.0	6.4%	$26.6	6.4%	$28.3	6.4%
Essential Services Assess.	$91.1	8.5%	$97.0	6.5%	$103.0	6.2%
Penalties and Interest	$124.0	7.0%	$120.0	-3.2%	$122.0	1.7%
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	($24.0)	NA	($30.0)	25.0%	($30.0)	0.0%
Total GF-GP Taxes	$10,119.4	3.9%	$10,091.5	-0.3%	$10,116.8	0.3%
GF-GP Non-Tax Revenue						
Federal Aid	$13.3	54.7%	$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	31.3%	$7.0	0.0%	$7.0	0.0%
From Licenses & Permits	$14.0	-31.5%	$14.0	0.0%	$14.0	0.0%
Miscellaneous	$10.0	-59.2%	$10.0	0.0%	$10.0	0.0%
Driver Responsibility Fees	$25.0	-61.8%	$0.0	NA	$0.0	NA
Interfund Interest	$4.0	29.0%	$5.0	25.0%	$6.0	20.0%
Liquor Purchase	$228.0	3.0%	$235.0	3.1%	$240.0	2.1%
Charitable Games	$5.0	-58.0%	$5.0	0.0%	$5.0	0.0%
Transfer From Escheats	$60.0	-34.6%	$61.0	1.7%	$62.0	1.6%
Other Non Tax	$0.0	0.0%	$0.0	0.0%	$0.0	0.0%
Total Non Tax	$366.4	-19.0%	$350.4	-4.4%	$357.4	2.0%
Total GF-GP Revenue	$10,485.8	2.8%	$10,441.9	-0.4%	$10,474.2	0.3%

Table 13
Administration School Aid Fund Revenue Detail

	FY 2018		FY 2019		FY 2020	
	Amount	Growth	Amount	Growth	Amount	Growth
School Aid Fund						
Income Tax	$2,906.2	6.8%	$2,947.1	1.4%	$3,013.0	2.2%
Sales Tax	$5,837.1	2.8%	$6,025.4	3.2%	$6,193.4	2.8%
Use Tax	$588.3	18.8%	$580.2	-1.4%	$591.4	1.9%
Liquor Excise Tax	$55.6	3.0%	$56.6	1.8%	$57.6	1.8%
Cigarette & Tobacco	$350.9	-1.6%	$345.6	-1.5%	$340.0	-1.6%
Other Tobacco	$0.0	0.0%	$0.0	0.0%	$0.0	0.0%
State Education Tax	$2,039.1	3.8%	$2,115.7	3.8%	$2,183.6	3.2%
Real Estate Transfer	$322.6	1.7%	$331.0	2.6%	$340.0	2.7%
Industrial Facilities Tax	$37.0	2.8%	$38.0	2.7%	$39.0	2.6%
Casino (45% of 18%)	$114.5	1.1%	$115.5	0.9%	$117.3	1.6%
Commercial Forest	$3.3	-5.7%	$3.3	0.0%	$3.3	0.0%
Other Spec Taxes	$25.0	3.3%	$25.0	0.0%	$25.0	0.0%
Subtotal Taxes	$12,279.6	4.4%	$12,583.4	2.5%	$12,903.6	2.5%
Lottery Transfer	$940.0	1.7%	$955.2	1.6%	$966.4	1.2%
Total SAF Revenue	$13,219.6	4.2%	$13,538.6	2.4%	$13,870.0	2.4%

Table 14
Administration Major Tax Totals

	FY 2018		FY 2019		FY 2020	
	Amount	Growth	Amount	Growth	Amount	Growth
Major Tax Totals (Includes all Funds)						
Income Tax	$10,202.0	7.9%	$10,122.5	-0.8%	$10,347.8	2.2%
Sales Tax	$8,020.8	2.9%	$8,278.8	3.2%	$8,520.0	2.9%
Use Tax	$1,637.8	11.6%	$1,612.0	-1.6%	$1,644.0	2.0%
CIT/MBT	$94.3	-76.5%	$327.5	247.3%	$323.9	-1.1%
Cigarette and Tobacco	$933.5	-1.3%	$922.8	-1.1%	$910.7	-1.3%
Casino Tax	$114.5	1.6%	$115.5	0.9%	$117.3	1.6%