U.S. Economic Update
Construction Financial Management Association

Federal Reserve Bank of Chicago
May 25, 2017

Paul Traub
Senior Business Economist
## Main Economic Indicators

### Year-over-year Comparison

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP – Annual Growth Rate 1</td>
<td>1.9%</td>
<td>2.0%</td>
<td>1.9</td>
</tr>
<tr>
<td>Unemployment Rate 2</td>
<td>5.3%</td>
<td>4.9%</td>
<td>4.7%</td>
</tr>
<tr>
<td>Participation Rate 2</td>
<td>62.7%</td>
<td>62.8%</td>
<td>63.0%</td>
</tr>
<tr>
<td>Nonfarm Job Growth 3</td>
<td>226.1</td>
<td>186.7</td>
<td>175.7</td>
</tr>
<tr>
<td>PCE Core Inflation Yr. / Yr. 4</td>
<td>1.4%</td>
<td>1.7%</td>
<td>1.7%</td>
</tr>
</tbody>
</table>

1. 2015 & 2016 - Q4/Q4, 2017 – Q1 ‘16 / Q1 ‘17
2. Annual Average & March 2017 YTD
3. Average Monthly Job Growth in Thousands- SA, March 2017 YTD
4. Annual Average Percent Change Year-over-year Core PCE & March 2017 YTD

Source: U.S. Bureau of Economic Analysis, Census Bureau and Bureau of Labor Statistics
U.S. Real GDP

Billions Chained $2009, % Change Q/Q at SAAR

Source: U.S. Bureau of Economic Analysis
U.S. Real GDP

GDP and Contribution to Percent Change, Q/Q at SAAR

Source: U.S. Bureau of Economic Analysis, September 2016 Blue Chip Economic Indicators.
Real Personal Consumption Expenditures

Billions Chained $2009, % Change Q/Q at SAAR

Source: U.S. Bureau of Economic Analysis
Real Personal Consumption Expenditures

Index, Q4 2007 = 100

Source: Author’s calculations using data from the BEA
Retail Sales – Non-store Sales

Index 2000 = 100 and Share of Growth

Source: Bureau of the Census
Real Gross Private Domestic Investment

Billions Chained $2009, % Change Q/Q at SAAR

Source: U.S. Bureau of Economic Analysis
Real Domestic Fixed Investment

Billions Chained $2009, Index – 2005 = 100

Source: U.S. Bureau of Economic Analysis
Real Domestic Nonresidential Fixed Investment

Billions Chained $2009, Index – 2005 = 100

Source: U.S. Bureau of Economic Analysis
U.S. Housing Starts & Household Formation

In Thousands of Units – Averages by Decade

<table>
<thead>
<tr>
<th>Decade</th>
<th>Starts</th>
<th>Formation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960's</td>
<td>1,407</td>
<td>1,046</td>
</tr>
<tr>
<td>1970's</td>
<td>1,758</td>
<td>1,512</td>
</tr>
<tr>
<td>1980's</td>
<td>1,498</td>
<td>1,498</td>
</tr>
<tr>
<td>1990's</td>
<td>1,498</td>
<td>1,104</td>
</tr>
<tr>
<td>2000's</td>
<td>1,537</td>
<td>1,331</td>
</tr>
<tr>
<td>2010's</td>
<td></td>
<td>1,234</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau – Single Family Starts and Households by Age
U.S. Housing Starts

In Thousands of Units (SAAR) – Annual Average & Monthly Data

Source: U.S. Census Bureau
The U.S. Dollar

Trade Weighted Dollar and $US to Chinese Yuan – Index 2010 = 100

Index

140.0
130.0
120.0
110.0
100.0
90.0
80.0

'10 '11 '12 '13 '14 '15 '16 '17

Stronger Dollar

17-May-2017

124.2

Weaker Dollar

98.4

TWD

Source: Federal Reserve Board and Haver Analytics
Real Net Exports of Goods & Services

Billions Chained $2009, Index – 2007 = 100

Source: U.S. Bureau of Economic Analysis
Real Government Consumption & Investment

Billions Chained $2009, Index – 2005 = 100

Source: U.S. Bureau of Economic Analysis
Real Total Government Consumption & Investment

Average Post-Recession Recovery, Index – Recession Trough = 100

Source: Author’s calculations using U.S. Bureau of Economic Analysis data.
U.S. Employment and Output Per Worker

Average Percent Growth by Expansion Period, 1961 to Present

<table>
<thead>
<tr>
<th>Period</th>
<th>Nonfarm Employment</th>
<th>Output Per Hour - All Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>'61 to '69</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>'70 to '73</td>
<td>2.4</td>
<td>3.4</td>
</tr>
<tr>
<td>'75 to 80</td>
<td>2.8</td>
<td>1.7</td>
</tr>
<tr>
<td>'80 to 90 *</td>
<td>2.2</td>
<td>1.9</td>
</tr>
<tr>
<td>'91 to '01</td>
<td>1.9</td>
<td>2.2</td>
</tr>
<tr>
<td>'01 to '07</td>
<td>0.7</td>
<td>2.6</td>
</tr>
<tr>
<td>'09 to Present</td>
<td>0.8</td>
<td>1.2</td>
</tr>
<tr>
<td>Avg '61 to '07</td>
<td>2.1</td>
<td>Avg '61 to '07</td>
</tr>
</tbody>
</table>


Source: U.S. Bureau of Labor Statistics
Labor Force Participation Rate

Percent of Noninstitutionalized Civilian Population – Annual Average

Source: U.S. Bureau of Labor Statistics
Working Age Population by Age

Select Age Categories, Percent of Total, Index – 1960 = 100

Source: U.S. Census Bureau – Table HH-3, Households by Age
Economic Potential by Decade

Real GDP Percent Change – Annual Average

Source: U.S. Congressional Budget Office
U.S. Real GDP Blue Chip Forecast

Annual Percent Change – Billions of Chained $2009

U.S. Real GDP Blue Chip Forecast by Month

2017 - Q1 & Q2 - Percent Change, Q/Q (SAAR) – Billions of Chained $2009

U.S. Real GDP Blue Chip Forecast

Percent Change – Billions of Chained $2009

Source: BEA and May Blue Chip Economic Indicators
U.S. Real GDP – Actual and Potential

Billions Chained $2009 and Percent of Actual

Source: Bureau of Economic Analysis and the U.S. Congressional Budget Office
U.S. Consumer
Income and Savings Rate

Percent Change and Percent of DPI

Source: U.S. Bureau of Economic Analysis
Real DPI & Personal Savings Rate

As Percent of Personal Income

<table>
<thead>
<tr>
<th>Percent</th>
<th>Real Disposable Personal Income - $2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>'60's</td>
<td>4.6</td>
</tr>
<tr>
<td>'70's</td>
<td>3.4</td>
</tr>
<tr>
<td>'80's</td>
<td>3.3</td>
</tr>
<tr>
<td>'90's</td>
<td>3.1</td>
</tr>
<tr>
<td>'00's</td>
<td>2.6</td>
</tr>
<tr>
<td>'10's</td>
<td>2.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percent</th>
<th>Personal Savings Rate Percent of DPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>'60's</td>
<td>11.1</td>
</tr>
<tr>
<td>'70's</td>
<td>11.8</td>
</tr>
<tr>
<td>'80's</td>
<td>9.3</td>
</tr>
<tr>
<td>'90's</td>
<td>6.7</td>
</tr>
<tr>
<td>'00's</td>
<td>4.3</td>
</tr>
<tr>
<td>'10's</td>
<td>5.9</td>
</tr>
</tbody>
</table>

Source: U.S. Bureau of Economic Analysis
Total Consumer Debt by Composition

Trillions of Dollars

Source: Federal Reserve Bank of New York and Equifax
Inflation – PCE & CPI Price Index

Percent Change Yr / Yr

Initial Unemployment Claims

Monthly Average as Percent of Nonfarm Employment

Source: U.S. Bureau of Labor Statistics
Stock Markets

S&P 500 and Dow Jones Industrial Average – Index 2016 = 100

Source: U.S. Bureau of Economic Analysis

May 25, 2017 Federal Reserve Bank of Chicago
Real Household Net Worth

Home Equity and Financial & Other - Index 2007 = 100, $2009

Note: Total Household Net Worth in Current Dollars is $89.3 Trillion.

Source: Author’s calculations using Federal Reserve data.
Consumer Sentiment

University of Michigan

Index

Source: Thomson Reuters / University of Michigan
Monetary Policy
Employment & Inflation
F.O.M.C Statement

May 3, 2017

1. Information since the F.O.M.C. met in March indicates that the labor market has continued to strengthen even as growth in economic activity has slowed.

2. Job gains were solid, on average, in recent months, and the unemployment rate has declined.

3. Household spending rose only modestly, but fundamentals underpinning the continued growth of consumption remained solid. Business fixed investment firmed. Inflation measured on a 12-month basis recently has been running close to the Committee’s 2 percent longer-run objective.

4. Excluding energy and food, consumer prices declined in March and inflation continued to run somewhat below 2 percent.

5. Market based measures of inflation compensation remained low; survey based measures of longer-term inflation expectations are little changed, on balance.
Unemployment Rate & Prices

Percent Unemployed, PCE / CPI % Change Yr./Yr.

Unemployment & Participation Rate

Percent Unemployed & Percent of Labor Force

U.S. Nonfarm Payrolls

Monthly and Annual Average Job Change – In Thousands

Initial Unemployment Claims

Monthly Average as Percent of Nonfarm Employment

Source: U.S. Bureau of Labor Statistics
Wages and Hours

Total Private – All Employees

Inflation Compensation

5 Year and 10 Year Inflation Expectations

Source: Author’s calculation using Federal Reserve System data.

Inflation Expectations

Headline PCE Inflation – Yr./Yr. & Q4/Q4

Survey of Professional Forecasters – Q1 ‘17 Forecast

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Actual</th>
<th>Expectations</th>
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</thead>
<tbody>
<tr>
<td>Q4 ’16</td>
<td>1.4</td>
<td>2.0</td>
</tr>
<tr>
<td>Q1 ’17</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Q2 ’17</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Q3 ’17</td>
<td>2.1</td>
<td>2.1</td>
</tr>
<tr>
<td>Q4 ’17</td>
<td>2.1</td>
<td>2.1</td>
</tr>
<tr>
<td>Q1 ’18</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>2017</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>2018</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>2019</td>
<td>2.0</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Source: Bureau of Economic Analysis and FRB Philadelphia Q4 ‘16 Survey
Corporate Bond Spreads

AAA and BB+ Junk Bonds – 5 & 10 Year Durations

May 17, 2017
2.10%
1.73%
Yield Curve

10 Year – 1 Year Treasuries in Basis Points

Source: Board of Governors – Federal Reserve System
Appropriate pace of policy firming

Fed Funds Rate – Year End Projections

Source: Federal Reserve - F.O.M.C. participants, March 15, 2017
Prime Rate

Bank Prime Loan Rate – In Percent

Prime Rate = F(Federal Funds Rate) where:
1. FOMC participants Federal Funds Rate path
2. Longer-run FFR = 3.0%
3. 2.0% longer-run inflation
4. Longer-run annual economic growth of 1.8%

Source: Author’s calculation using Board of Governors – Federal reserve Bank data.
Mortgage Rates

15 & 30 Year Fixed Rate – U.S. Average

Source: Freddie Mac

May 18, 2017

4.02%

3.27%

Source: Freddie Mac
Michigan Economy
Michigan Real GSP

Billions Chained $2009, % Change Q/Q at SAAR

Source: Author’s calculations using U.S. Bureau of Economic Analysis data.
Michigan Nonfarm Employment

Billions Chained $2009, % Change Q/Q at SAAR

Source: Author’s calculations using U.S. Bureau of Economic Analysis data.
Michigan GSP Per Nonfarm Employment

Thousands of Chained $2009, % Change Y/Y

Source: Author’s calculations using U.S. Bureau of Economic Analysis data.
Michigan Real GSP and Nonfarm Employment

By Goods and Service Producing Sectors – Index, 1997 = 100

Source: Author’s calculations using U.S. Bureau of Economic Analysis data.
U.S. Light Vehicle Sales

S.A.A.R – Millions of Units


Source: Ward’s Automotive and BEA
### Inventory to Sales Ratio

**Total Light Vehicles - SA**

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent</td>
<td>1.00</td>
<td>1.50</td>
<td>2.00</td>
<td>2.50</td>
<td>3.00</td>
<td>3.50</td>
<td>4.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau and WardsAuto.
U.S. Light Vehicle Incentives

As Percent of Transaction Price - SA

Source: Author’s calculation using Ward’s Automotive and J.D Power data.
Light Vehicle Transaction Price

Annual Average & Percent Change Yr./Yr.

Source: Author’s calculation using J.D Power data.
Finance Term

Length of Loan in Months

Source: J.D Power data.
Buying Conditions for Vehicles

University of Michigan

Source: Thomson Reuters / University of Michigan
Reasons for Buying Conditions for Vehicles

University of Michigan – Survey of Consumers, April 2017

Good / Bad Reason: Why do you say so?

- Low Prices: 24
- Prices Will Increase: 8
- Low Interest Rates: 21
- Rising Interest Rates: 4
- Time's good: 15
- Fuel Efficiency: 3
- Prices High: 13
- High Interest Rates: 3
- Can't Afford: 3
- Uncertain Future: 3
- Gas Prices: 0
- Poor Selection: 1

Note: May add to more than a 100 due to multiple mentions.

Source: University of Michigan Survey of Consumers
### U.S. Light Vehicle Sales

#### 2017 & 2018 Forecast - Millions of Units

<table>
<thead>
<tr>
<th>Year</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>17.3</td>
<td>17.4</td>
<td>17.4</td>
<td>17.3</td>
</tr>
<tr>
<td>2018</td>
<td>17.2</td>
<td>17.2</td>
<td>17.3</td>
<td>17.1</td>
</tr>
</tbody>
</table>

### Michigan Vehicle Production

#### Millions of Units

<table>
<thead>
<tr>
<th>Year</th>
<th>Car</th>
<th>Light Truck</th>
<th>Med &amp; Hvy Truck</th>
</tr>
</thead>
<tbody>
<tr>
<td>'05</td>
<td>1.1</td>
<td>1.1</td>
<td>0.3</td>
</tr>
<tr>
<td>'06</td>
<td>1.3</td>
<td>1.3</td>
<td>0.5</td>
</tr>
<tr>
<td>'07</td>
<td>1.3</td>
<td>1.3</td>
<td>0.5</td>
</tr>
<tr>
<td>'08</td>
<td>1.1</td>
<td>1.1</td>
<td>0.3</td>
</tr>
<tr>
<td>'09</td>
<td>1.1</td>
<td>1.1</td>
<td>0.3</td>
</tr>
<tr>
<td>'10</td>
<td>1.1</td>
<td>1.1</td>
<td>0.3</td>
</tr>
<tr>
<td>'11</td>
<td>1.1</td>
<td>1.1</td>
<td>0.3</td>
</tr>
<tr>
<td>'12</td>
<td>1.1</td>
<td>1.1</td>
<td>0.3</td>
</tr>
<tr>
<td>'13</td>
<td>1.1</td>
<td>1.1</td>
<td>0.3</td>
</tr>
<tr>
<td>'14</td>
<td>1.1</td>
<td>1.1</td>
<td>0.3</td>
</tr>
<tr>
<td>'15</td>
<td>1.1</td>
<td>1.1</td>
<td>0.3</td>
</tr>
<tr>
<td>'16</td>
<td>2.3</td>
<td>2.3</td>
<td>0.0</td>
</tr>
<tr>
<td>'17</td>
<td>2.0</td>
<td>2.0</td>
<td>0.0</td>
</tr>
<tr>
<td>'18</td>
<td>1.9</td>
<td>1.9</td>
<td>0.0</td>
</tr>
<tr>
<td>'19</td>
<td>1.9</td>
<td>1.9</td>
<td>0.0</td>
</tr>
<tr>
<td>'20</td>
<td>2.0</td>
<td>2.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Note: 2016 Total Vehicle Production Including M/H: 18,148,667.

Source: Ward’s Automotive
Detroit-Warren-Dearborn MSA

Real GMP, Nonfarm Employment, and GMP Per Employee—Index, 1997 = 100

Source: Author’s calculations using U.S. Bureau of Economic Analysis data.
U.S. Michigan, and Detroit MSA<sup>1</sup> Employment

Compound Annual Growth Rate

<table>
<thead>
<tr>
<th></th>
<th>Detroit - MSA</th>
<th>Michigan</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Nonfarm</strong></td>
<td>2.2</td>
<td>1.9</td>
<td>1.7</td>
</tr>
<tr>
<td><strong>Goods-Producing</strong></td>
<td>1.8</td>
<td>4.3</td>
<td>5.5</td>
</tr>
<tr>
<td><strong>Service-Providing</strong></td>
<td>1.7</td>
<td>1.5</td>
<td>1.7</td>
</tr>
<tr>
<td><strong>Government</strong></td>
<td>-1.6</td>
<td>-0.7</td>
<td>-0.1</td>
</tr>
</tbody>
</table>

CAGR - March 2010 to March 2017

<table>
<thead>
<tr>
<th></th>
<th>Detroit - MSA</th>
<th>Michigan</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Nonfarm</strong></td>
<td>-1.1</td>
<td>-0.3</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Goods-Producing</strong></td>
<td>-2.0</td>
<td>-0.9</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Service-Providing</strong></td>
<td>-3.0</td>
<td>-2.0</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>Government</strong></td>
<td>-2.0</td>
<td>-0.9</td>
<td>0.1</td>
</tr>
</tbody>
</table>

CAGR - March 2007 to March 2017

1. Detroit-Warren-Dearborn MSA

Source: Author’s calculations using U.S. Bureau of Economic Analysis data.
Hourly Earnings

Total Private Average Hourly Earnings by Sector Total – In Current Dollars, March 2017

Per Capita Income

United States, Michigan, and Detroit MSA, In Current 2016 Dollars

* Detroit-Warren-Dearborn MSA – 2016 Per Capita Income Estimate

Source: U.S. Bureau of Economic Analysis data.
Thank You!