Virginia Council of CEO’s

Ready for Growth

Connor Lokar
Economist
### 2016 Forecast Results

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Duration</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>US GDP</td>
<td>15</td>
<td>99.1%</td>
</tr>
<tr>
<td>US Ind. Prod.</td>
<td>10</td>
<td>99.9%</td>
</tr>
<tr>
<td>Eur Ind. Prod.</td>
<td>15</td>
<td>99.2%</td>
</tr>
<tr>
<td>Canada Ind Prod</td>
<td>15</td>
<td>99.6%</td>
</tr>
<tr>
<td>China Ind Prod</td>
<td>18</td>
<td>99.3%</td>
</tr>
<tr>
<td>Retail Sales</td>
<td>18</td>
<td>99.8%</td>
</tr>
<tr>
<td>Housing</td>
<td>15</td>
<td>95.6%</td>
</tr>
<tr>
<td>Employment</td>
<td>14</td>
<td>99.7%</td>
</tr>
</tbody>
</table>

*ITR Economics provides the best economic intelligence to reduce risk and drive practical and profitable business decisions.*
• Annual Trend: $16.7 trillion
• Phase: B
• Year-over-Year: 1.6%

US Gross Domestic Product 3-Month Moving Average

Quarter-over-Quarter Growth Rate 3/12 Rate-of-Change

Industry Outlook
2017: 3.2%
2018: 1.6%
2019: 0.4%

Source: BEA
US and Virginia Annual GSP Growth Rate

Source: BEA

12/12 Rates-of-Change
The consumer is king

US GDP by Consumption, 2014

- Personal Consumption: 66%
- Business Investment: 16%
- Government Spending: 18%

The consumer is king.
First in Forecasts Since 1948

Real Gross Domestic Product

Source: BEA

3/12 Rate

of Change

GDP 3/12

Republican Democrat
Real Gross Domestic Product to Small Business Optimism Index

Consumer Confidence at 15-year high in Dec

Data Source: BEA, NFIB
### Data Preparation

<table>
<thead>
<tr>
<th></th>
<th>Raw</th>
<th>3MMT</th>
<th>3/12</th>
<th>12MMT</th>
<th>12/12</th>
</tr>
</thead>
<tbody>
<tr>
<td>May-15</td>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jun-15</td>
<td>1.5</td>
<td>4.4</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Jul-15</td>
<td>1.4</td>
<td>4.4</td>
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<tr>
<td>Aug-15</td>
<td>1.5</td>
<td>4.4</td>
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</tr>
<tr>
<td>Sep-15</td>
<td>1.3</td>
<td>4.4</td>
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</tr>
<tr>
<td>Oct-15</td>
<td>1.3</td>
<td>4.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nov-15</td>
<td>1.6</td>
<td>4.1</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Dec-15</td>
<td>1.6</td>
<td>4.2</td>
<td></td>
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<td>Jan-16</td>
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</tr>
<tr>
<td>Feb-16</td>
<td>1.7</td>
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<tr>
<td>Mar-16</td>
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<tr>
<td>May-16</td>
<td>1.7</td>
<td>5.0</td>
<td>18.0</td>
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</tbody>
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### 3/12 Rate-of-Change

\[
\text{Rate-of-Change} = \frac{\text{April 2017 3MMT}}{\text{April 2016 3MMT}} \times 100 - 100
\]

\[
\frac{5.3}{4.8} \times 100 - 100 = 10.4\%
\]

### 12/12 Rate-of-Change

\[
\text{Rate-of-Change} = \frac{\text{April 2017 12MMT}}{\text{April 2016 12MMT}} \times 100 - 100
\]

\[
\frac{20.3}{18.0} \times 100 - 100 = 12.7\%
\]
Phase A - Recovery

Annual Sales are **BELOW** Year-Ago Levels, but the Rate-of-Decline is **SLOWING**.

Phase B – Accelerating Growth (Best)

Annual Sales are **ABOVE** Year-Ago Levels, and are **GROWING** at a **RAPID** Pace.

Phase C – Slower Growth (Caution)

Annual Sales are **ABOVE** Year-Ago Levels, BUT the Rate-of-Growth is **SLOWING**

Phase D - Recession

Annual Sales are **BELOW** Year-Ago Levels, and are **DECLINING** at a **RAPID** Pace.
US Industrial Production to ITR Leading Indicator™

Reported in *ITR Trends Report – ITR Advisor*

Sources: FRB, ITR Economics

USIP – 12/12 Indicator - Monthly

As seen in *Trends Report*

ITR Economics

First in Forecasts Since 1948
Virginia Leading Index

Tentative rise

Source: FRB Philadelphia
VA CEO Economic Outlook Survey

Rates-of-Change

PHASE
Phase C
Slower Growth

QUARTERLY GROWTH
(3/12)
6.8%

ANNUAL GROWTH
(12/12)
1.8%

NEXT 12/12 LOW
???

NEXT 12/12 HIGH
???

Surge in 4Q, what is relationship with economy??

Source: VACEO
First in Forecasts Since 1948

Source: VACEO

VA CEO Economic Outlook Survey to U.S. Industrial Production Index

12/12 Rates-of-Change

Page 8 of Core ITR Trends Report

Sales

Index

Actually lags USIP by 3 months

All economic indicators used in this analysis are shifted along the horizontal axis to reflect their timing relationship to VA CEO Economic Outlook Survey Sales and provide a rough projection of the possible course of company sales going forward.

Indicator Analysis:

- Indicator Snapshot: Phase A Recovery
- Cyclic Turning Points: Indicator → Company
- 3 Month Lead Time to Company

Source: VACEO
State Population Growth Rates

Source: Census Bureau

Percent Change from Population Estimates 2010 to 2015

First in Forecasts Since 1948
Note: Does not include immigration into the U.S.
What does this mean for you?

- **Leading Indicators** ➔ fading headwinds, acceleration into 2018

- A ‘Great’ recession (or a mild one) can undermine the best laid plans

- Economic intelligence is the difference between Proactive vs. Reactive decision making
Business Cycles

Phase A - Recovery
Annual Sales are BELOW Year-Ago Levels, but the Rate-of-Decline is SLOWING.

Phase B – Accelerating Growth (Best)
Annual Sales are ABOVE Year-Ago Levels, and are GROWING at a RAPID Pace.

Phase C – Slower Growth (Caution)
Annual Sales are ABOVE Year-Ago Levels, BUT the Rate-of-Growth is SLOWING

Phase D - Recession
Annual Sales are BELOW Year-Ago Levels, and are DECLINING at a RAPID Pace.
Lingering Concerns

- Those reliant on commodities (S. America, Oil Producers)
- International Trade – NAFTA, Brexit, etc.
- China: Debt, Devaluation, Doubtful growth
- US Debt
- US Health Care
Rapid supply growth in the US from 5.5M bbl/day to over 9.6M bbl/day post recession. This supply growth had been largely offset by supply disruption in Iran and Libya. Libyan production returned mid-2014, adding more than 1.5M bbl/day to global supply. Saudi Arabia decided not to pull back supply, choosing to defend its market share. Slowing growth in China (and US) contributed to the significant downward pressure on oil demand.
Weekly Oil Price & Rig Count

First in Forecasts Since 1948

Sources: EIA, Baker Hughes

Rigs: Weekly Count
WTI: Average Weekly Price

4Q 3MMA: $57.61
$53.19

USD/bbl

Oil Rigs
WTI Price - Shifted 13 Weeks

US Industrial Production to China Industrial Production

Sources: FRB, Economist

12/12 Rates

-0.4%

6.0%

Freight Volumes rising
China LI rise

Nearly 21% of China GDP in 2015 was Exports

Smoot – Hawley Tariff Act 1930

First in Forecasts Since 1948

ITR Economics

Sources: FRB, Economist
Global Leading Indicators

OECD plus 6 major NME up
5 Major Asia up
Brazil up
Canada up
China up
India up
Japan up

Gaining traction

EZ Comp PMI
EU Manufacturing PMI
JP Morgan Global MFG PMI

Source: Markit Economics
<table>
<thead>
<tr>
<th>Signs of Encouragement</th>
<th>Leading indicator improvement in ITRLI, USLI, PMI, Utilization Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Favorable interest rates, banks ramping up lending, rising corporate profitability</td>
</tr>
<tr>
<td></td>
<td>Consistent growth in the residential market</td>
</tr>
<tr>
<td></td>
<td>Well positioned consumer, rising wages, robust consumer spending</td>
</tr>
<tr>
<td></td>
<td>Building upside pressure on commodities</td>
</tr>
<tr>
<td></td>
<td>Nonresidential Construction expansion</td>
</tr>
</tbody>
</table>
The US Industrial Production (USIP) 12/12 has a 9 month lag time to the Corporate Profits 12/12 through business cycle highs and lows. Profits up 9.3% in 4Q16! 1Q17 trickling in…

Profits up 9.3% in 4Q16!

1Q17 trickling in…
Non-Manufacturing Purchasing Managers Index

Good news for 2017

Consumer spending to accelerate into early 2018

Above 50 Indicates expansion

Source: Institute for Supply Management
Real Personal Income Less Transfer Receipts
Average per Person Age 18 to 65

Sources: Federal Reserve Bank of St. Louis, BLS

12MMA Data Trend
US Median Annual Earnings (deflated)

Source: BLS
Nondefense Capital Goods
New Orders w/o Aircraft

Billions of Dollars

$761.1
MTM 3Q 3MMT decline
Dec ‘16 Low
2017  4.6%

B-to-B on the rise

Source: Census Bureau
US Nondefense Capital Goods New Orders (excl. Aircraft) to Manufacturing Capacity Utilization

New Orders

Utilization Rate

1/12
12/12

-30 -20 -10 0 10 20 30

'00 '01 '02 '03 '04 '05 '06 '07 '08 '09 '10 '11 '12 '13 '14 '15 '16 '17 '18 '19 '20

Rates-of-Change

Sources: Census Bureau, FRB
Purchasing Managers Index

Potential reversal

Not definitive, but…

Source: Institute for Supply Management
US Private Sector Employment

Private Sector Employment Growth: 1.8% C
Job Openings: 4.2% C
Involuntary Part Time Employment: -5.6% D
Quit Rate – Rising
Richmond MSA Construction Industry Employment

Source: BLS
US to Virginia Unemployment Rate

February 2017

US  4.7%
VA  3.9%
US Overall Wage Growth

Market forces at work!

Source: FRB Atlanta
US Nonfarm, Total Private, and Manufacturing Quit Rates

Wave pattern is seasonality

We love quitters!

Source: BLS

Private
Nonfarm
Manufacturing

First in Forecasts Since 1948

Data Trends
## The Generations Defined

<table>
<thead>
<tr>
<th>Generation</th>
<th>Born:</th>
<th>Age in 2014:</th>
<th>Share of adult population:</th>
<th>Share non-Hispanic white:</th>
<th>Ind; Dem; Rep</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The Millennial Generation</strong></td>
<td>After 1980</td>
<td>18 to 33*</td>
<td>27%</td>
<td>57%</td>
<td>50%; 27%; 17%</td>
</tr>
<tr>
<td><strong>The Baby Boom Generation</strong></td>
<td>1946 to 1964</td>
<td>50 to 68</td>
<td>32%</td>
<td>72%</td>
<td>37%; 32%; 25%</td>
</tr>
<tr>
<td><strong>Generation X</strong></td>
<td>1965 to 1980</td>
<td>34 to 49</td>
<td>27%</td>
<td>61%</td>
<td>39%; 32%; 21%</td>
</tr>
<tr>
<td><strong>The Silent Generation</strong></td>
<td>1928 to 1945</td>
<td>69 to 86</td>
<td>12%</td>
<td>79%</td>
<td>34%; 32%; 29%</td>
</tr>
</tbody>
</table>

*The youngest Millennials are in their teens. No chronological end point has been set for this group.

Note: The “Greatest Generation”, which includes those born before 1928, is not included in the analysis due to the small sample size. Share of total population and share non-Hispanic white are based on adults only in 2013; 85-year-old Silents are not included due to data limitations.


Note: Annual averages plotted 1995-2014. For 2015 the first quarter average of 2015 is shown. Due to data limitations, Silent generation is overestimated from 2008-2015.
Where they lived when they were ages 18-33

<table>
<thead>
<tr>
<th>Generation</th>
<th>Metropolitan</th>
<th>Non Metropolitan</th>
<th>Not Known</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Millennials in 2014</td>
<td>86%</td>
<td>13%</td>
<td>1%</td>
<td>100%</td>
</tr>
<tr>
<td>Gen Xers in 1998</td>
<td>83%</td>
<td>17%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Boomers in 1980</td>
<td>68%</td>
<td>26%</td>
<td>6%</td>
<td>100%</td>
</tr>
<tr>
<td>Silents in 1963</td>
<td>64%</td>
<td>36%</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Millennials that entered the workforce before or during recession less likely to afford housing now.

US Home Ownership rate near 63%, 5-year low.

Under age 35? 34.1%, record low.

Also – value mobility.

Will we age out?
The Decline in Marriage Among the Young

% married at age 18 to 32, by generation

Source: Data from 1980, 1997 and 2013 are from the March Current Population Survey; 1960 data are from the 1960 Census.

PEW RESEARCH CENTER
The Great Recession ruptured millennial loyalty to employers.

2008: 75% expected to have between 2-5 employers in their lifetime, just 10% thought 6+

Now: just 54% think 2-5, more than 25% say 6 or more

Free Agent mentality – just 6% expect SS benefits

Data Source: Pew Research Center/Social Trends
The other “carrots”

- We want more and more challenging work
  - Personal benefit and professional development is crucial.
- Output not hours in office
  - Happy to put in the hours on big projects, just don’t make them sit around if their work is completed
- Balance and flexibility
  - Harness my selfishness by making my needs overlap with yours and reward those who work smarter, harder – not just longer.

This can generate substantial morale boost and productivity increase
Millennials Less Trusting of Others

% saying that, generally speaking, most people can be trusted

- Employers losing leverage (transparent labor market, shallow roots, etc)
- Free Agent mentality – just 6% expect SS benefits
- **Path visibility**

Question wording: “Generally speaking, would you say that most people can be trusted or that you can’t be too careful in dealing with people?”

Source: General Social Survey data, 1987-2012
Looking Ahead

• Maturing millennials (I know)
  – rising birth rates/household formation

• Changes in what we look for from employers
  – Flexibility, personal growth, avoiding stagnation

• Movement towards brands/businesses that align with our values
  – Somewhere I get my paycheck vs somewhere I want to work
Generations and “Selfies”

% saying they have shared a selfie

Note: Based on all adults, N=1,821. Respondents who knew what a selfie was were asked if they had ever shared a selfie on a photo sharing or social networking site such as Facebook, Instagram or Snapchat.


Data Source: Pew Research Center
Housing Starts

Source: Census Bureau

Millions of Units

As seen in Trends Report

First in Forecasts Since 1948

Source: Census Bureau
First in Forecasts Since 1948

Virginia Housing Price Index

Peak median home price: 252.0

Current: 242.8

Year over Year % Change

Source: Federal Housing Finance Agency
Virginia Housing Unit Building Permits

Thousands of Units

Source: Census Bureau

First in Forecasts Since 1948
Mortgage Rates to Federal Funds

Sources: Federal Reserve Board, WSJ

Raw Data
US Consumer Price Index to US Producer Price Index

First in Forecasts Since 1948

Source: FRB

1/12 Rate of Change

'96 '98 '00 '02 '04 '06 '08 '10 '12 '14 '16 '18 '20

-10 -5 0 5 10

-10 -5 0 5 10

Consumer Price
Producer Price

3.7%
2.4%
Yield on 10 Year Treasury Note

Source: Factset, FRB
FOMC Member Interest Rate Projections

Fed Open Market Committee

Source: FRB
1. Know where you and your markets are in the business cycle
2. Budget for continued overall expansion over next 18 months
3. Invest in operational efficiency – productivity has to match wage increases
4. Ensure employee development does not stagnate or it could cost you your millennials
5. Plan for upward pressure on input costs across the board
6. Beware potentially increasing international sourcing costs
7. Get together with your team and try to identify YOUR Must Watch Leading Indicators \(\rightarrow\) PMI, ITRLI, Virginia LI, Housing Starts…?
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Email updates@itreconomics.com with the subject line

Virginia Council of CEO’s