The Economic and Market Outlook 2018 – 2021

Clare Zempel
Economist and Investment Strategist
Zempel Strategic

Rancho Mirage, California
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S&P 500 Common Stock Index (Days)

Ten Bear Stock Market Declines Since 1955*

<table>
<thead>
<tr>
<th>Start</th>
<th>End</th>
<th>Decline</th>
<th>Duration*</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/2/56</td>
<td>10/22/57</td>
<td>-21.4%</td>
<td>83.7</td>
</tr>
<tr>
<td>12/12/61</td>
<td>6/26/62</td>
<td>-27.9%</td>
<td>28.0</td>
</tr>
<tr>
<td>2/9/66</td>
<td>10/7/66</td>
<td>-22.1%</td>
<td>34.3</td>
</tr>
<tr>
<td>11/28/66</td>
<td>5/28/70</td>
<td>-38.0%</td>
<td>77.0</td>
</tr>
<tr>
<td>1/11/73</td>
<td>10/3/74</td>
<td>-48.2%</td>
<td>90.0</td>
</tr>
<tr>
<td>11/28/80</td>
<td>8/12/82</td>
<td>-27.1%</td>
<td>88.9</td>
</tr>
<tr>
<td>8/25/87</td>
<td>12/4/87</td>
<td>-33.5%</td>
<td>14.4</td>
</tr>
<tr>
<td>7/16/89</td>
<td>10/11/90</td>
<td>-19.9%</td>
<td>12.4</td>
</tr>
<tr>
<td>3/24/00</td>
<td>10/9/02</td>
<td>-49.1%</td>
<td>132.7</td>
</tr>
<tr>
<td>10/9/07</td>
<td>3/9/09</td>
<td>-56.7%</td>
<td>73.9</td>
</tr>
<tr>
<td>Averages</td>
<td></td>
<td>-34.24%</td>
<td>61.6</td>
</tr>
</tbody>
</table>

* Declines > 20%
* Weeks

31 Stock Market Corrections Since 1955* (1/3)

<table>
<thead>
<tr>
<th>Start</th>
<th>End</th>
<th>Decline</th>
<th>Duration*</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/23/55</td>
<td>10/11/55</td>
<td>-10.5%</td>
<td>2.6</td>
</tr>
<tr>
<td>10/25/59</td>
<td>8/3/59</td>
<td>-14.02%</td>
<td>64.1</td>
</tr>
<tr>
<td>10/23/62</td>
<td>8/22/62</td>
<td>-10.52%</td>
<td>8.9</td>
</tr>
<tr>
<td>6/28/65</td>
<td>5/13/65</td>
<td>-9.40%</td>
<td>6.6</td>
</tr>
<tr>
<td>3/5/68</td>
<td>9/25/67</td>
<td>-10.11%</td>
<td>23.1</td>
</tr>
<tr>
<td>8/9/71</td>
<td>4/28/71</td>
<td>-10.73%</td>
<td>14.7</td>
</tr>
<tr>
<td>11/22/71</td>
<td>9/9/71</td>
<td>-11.03%</td>
<td>10.9</td>
</tr>
<tr>
<td>12/8/74</td>
<td>11/7/74</td>
<td>-10.56%</td>
<td>4.1</td>
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<tr>
<td>12/8/74</td>
<td>7/15/75</td>
<td>-14.14%</td>
<td>9.0</td>
</tr>
<tr>
<td>3/6/78</td>
<td>9/21/76</td>
<td>-19.41%</td>
<td>75.9</td>
</tr>
<tr>
<td>11/14/78</td>
<td>9/12/78</td>
<td>-13.55%</td>
<td>9.0</td>
</tr>
<tr>
<td>11/7/79</td>
<td>10/5/79</td>
<td>-10.25%</td>
<td>4.7</td>
</tr>
</tbody>
</table>

* Declines > 5% But < 20%
* Weeks
31 Stock Market Corrections Since 1955 (2/3)*

<table>
<thead>
<tr>
<th>Start</th>
<th>End</th>
<th>Decline</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/13/80</td>
<td>3/27/80</td>
<td>-17.07%</td>
<td>6.1</td>
</tr>
<tr>
<td>10/10/83</td>
<td>7/24/84</td>
<td>-14.33%</td>
<td>41.1</td>
</tr>
<tr>
<td>2/2/84</td>
<td>4/4/84</td>
<td>-10.21%</td>
<td>4.0</td>
</tr>
<tr>
<td>2/18/87</td>
<td>4/11/87</td>
<td>-8.94%</td>
<td>8.7</td>
</tr>
<tr>
<td>10/7/97</td>
<td>10/27/97</td>
<td>-9.63%</td>
<td>7.4</td>
</tr>
<tr>
<td>7/17/98</td>
<td>8/31/98</td>
<td>-10.80%</td>
<td>2.9</td>
</tr>
<tr>
<td>7/16/99</td>
<td>10/15/99</td>
<td>-19.34%</td>
<td>6.4</td>
</tr>
<tr>
<td>11/27/02</td>
<td>3/11/03</td>
<td>-14.71%</td>
<td>14.9</td>
</tr>
<tr>
<td>2/11/04</td>
<td>8/12/04</td>
<td>-8.16%</td>
<td>26.1</td>
</tr>
<tr>
<td>4/23/10</td>
<td>7/2/10</td>
<td>-15.99%</td>
<td>10.0</td>
</tr>
<tr>
<td>4/29/11</td>
<td>10/3/11</td>
<td>-19.39%</td>
<td>22.4</td>
</tr>
</tbody>
</table>

* Declines > 5% But < 20%  
* Weeks

Averages -12.08%  
Minimum -5.76%  
Maximum -19.41%  
Duration 75.9  

* Declines > 5% But < 20%  
* Weeks

Yield Spread, Recessions, Stocks  
(10-Year T-Note Minus 1-Year T-Note) (Percentage Points)

Unemployment Claims (Weekly) (Thousands)

Caution Zone  
Recession  
Yield Spread  
S&P 500 (Right)

Recession  
Caution  
Alert  
Actual  
4-Week Average

Katrina  
Sandy  
Harvey  
Ike
CPI Inflation and Zempel Zones

Fed Funds Rate: Actual and Forecast
(Fed’s December 2017 Projections)

Fed’s Forecast
December 2018 Futures Market Expectation Is 2.07%
(2/16/18)

Real GDP Growth Rates

2018 AWPA Annual Meeting

Key “Market-Based” Expectations
- No Recession Before Late-2020
- No Severe Slowdown Before Late-2018
- Real Growth and Inflation Rise Somewhat
- Small and Infrequent Fed Funds Hikes
- Moderate Sustained Bond-Yield Rise
- No Bear Stock Market Before Late-2019
- No Major Correction Unless Stocks or Yields Jump 15%

Uncertainties
- Federal Reserve Leadership
- Deregulation
- Supply-Side Tax Cuts
- Infrastructure Boost vs. Monetary Offset
- Trade Wars vs. Tough Negotiation
- Civil Liberties Threats
- International Crises
Key “Market-Based” Expectations
No Recession Before Late-2020
No Severe Slowdown Before Late-2018

Zempel Zones
Alert Zone = Slowdown
Caution Zone = Recession Imminent

Interest Rates and Recessions

Yield Spread and Caution Zones ©
(10-Year T-Note Minus 1-Year T-Note) (Percentage Points)

Yield Spread, Recessions, Stocks
(10-Year T-Note Minus 1-Year T-Note) (Percentage Points)
ISM (PMI) – Manufacturing
Caution Zones Predicted All Recessions (9/9) But Not All Slowdowns

Interest Rates and Recessions

Rate Changes and Zempel Zones ©
(BAA and Fed Funds) (Total Twelve-Month Change in Percentage)

ISM (PMI) - Manufacturing
Zempel Caution Zones © Capture All Recessions (9/9)
Zempel Alert Zones © Capture Most Slowdowns (4/6)
Best Directional Indicators
No Alert Zone = No Major Slowdown
No Caution Zone = No Recession

Other “Threats”
Oil Prices
Financial Stress
International Trends

Best “Coal Mine Canary”
Unemployment Claims

Oil Prices (WTI Spot)

Financial Stress and Recessions
Chicago Fed Adjusted National Financial Conditions Index (Weekly)
### Key "Market-Based" Expectations

- No Recession Before Late-2020
- No Severe Slowdown Before Late-2018
- Real Growth and Inflation Rise Somewhat
- Small and Infrequent Fed Funds Hikes
- Moderate Sustained Bond-Yield Rise
- Fed’s Present Policies Sustained

### Real GDP Growth Rate

Nine Recessions Since 1955

- 1955-2007

### CAB and Recessions

(CAB = Chemicals Activity Barometer) (American Chemistry Council)
Productivity and Workforce Trends
(8-Year Growth in Nonfarm Productivity) (Total Civilian Population)

Nominal GDP Growth
Nine Recessions Since 1955

Nominal GDP Growth Rates

PCED Inflation and Zempel Zones ©
Clare Zempel - Zempel Strategic
Expect Slow Growth Because…
Fed’s Inflation Ceiling Is 2%
Fed’s Nominal Growth Ceiling Is 4%
Implied Real Growth Ceiling Is 2%

In 2018-2019…
PCED Inflation Should Be < 2%
Real Growth Should Be > 2%
Faster Real Growth Requires Higher Ceilings
Higher Ceilings Require Intellectual Revolution
Real Personal Total Consumption

Auto and Light Truck Sales (Million Units)

Housing Starts (Million Units)

Housing Starts (Million Units)

HFI = Housing Affordability Index
New Non-Defense Capital Goods Orders
Excluding Aircraft (Monthly) (Current Dollars)

Fixed Investment - Structures
(One-Year Growth Rates)

Fixed Investment - Structures
(One-Year Growth Rates)

Dollar Exchange Rates
(Trade-Weighted Indexes)
**Dollar Exchange Rate**
(Trade-Weighted Major Currencies Index) (12-Month Changes)

**World Real GDP Growth**
Dallas Fed’s Globalization & Monetary Policy Institute

**Zempel Strategic Stock Market Model**
(Since December 1965) (Operating Earnings Valuation) (Stocks or T-Bills)

Stock Market Model Components
Interest-Rate Changes
Momentum
Valuation
Momentum and Valuation Are Bullish

2018 AWPA Annual Meeting

Recession Caution Alert Actual


Model - 16.16% Total Return
S&P 500 - 9.95% Total Return
S&P 500 - 6.69% Price Return
T-Bill - 5.13% Total Return
CAGR Returns (1965-2017)
Valuation Index Concepts
Ratio = Bond Yield / Earnings Yield
Earnings Yield = E/P
Valuation Index = Normalized Ratio

Bond Yield = Moody’s BAA Corporate Bond Yield
E = Trailing Year Operating Earnings
P = S&P 500 Index
Normalization = (Actual – Mean) / Standard Deviation
Final Thoughts

Review

Implications

Real Disposable Personal Income
(Per Capita - After Tax - After Inflation) ("Real Living Standards")

Questions…

Clare W. Zempel, CFA, CBE
Zempel Strategic
Applied Economics and Financial Market Analysis
www.zempelstrategic.com
CZempel@ZempelStrategic.com
(414) 351-1250

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