U, V, L, W???

Understanding the economic consequences of the great virus lockdown

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Director, UCR SoBA Center for Economic Forecasting and Development
From February

The Economy has been fine…

- GDP Growth: Not too hot, not too cold
  - Consumer spending supported by strong fundamentals
  - Housing markets to bounce back solid in 2020
  - Labor markets remain tight, wages on the rise
  - Interest rates down, inflation still constrained
  - Debt markets look very stable

- Reports of the end of this expansion are highly exaggerated
  - Still a low chance of recession in next 24 months

- Top risk: Novel Corona virus

WSJ Next Recession Survey Feb 2020

Q&A: Forecasting the Next Downturn
When do you expect the next recession to start?

The easiest forecast: The WSJ Next Recession survey thinks the next recession is one to two years away
The Virus in the Room

- **Global Pandemic**
  - Unprecedented contagiousness, high mortality rate among segments of population
  - >2 million afflicted, over 100,000 deaths

- **Unprecedented public health actions**
  - Shelter-in-place rules, closure of large swaths of the economy
  - Millions of workers put into unemployment

- **The question**
  - How bad will the damage be to the economy?

<table>
<thead>
<tr>
<th></th>
<th>2018 Avg</th>
<th>2019 Avg</th>
<th>2020 Q1</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>2.50</td>
<td>2.33</td>
<td>-4.8</td>
</tr>
<tr>
<td>Consumption</td>
<td>1.79</td>
<td>1.79</td>
<td>-5.26</td>
</tr>
<tr>
<td>Durable goods</td>
<td>0.27</td>
<td>0.41</td>
<td>-1.21</td>
</tr>
<tr>
<td>Nondurable goods</td>
<td>0.36</td>
<td>0.41</td>
<td>0.94</td>
</tr>
<tr>
<td>Services</td>
<td>1.17</td>
<td>0.97</td>
<td>-4.99</td>
</tr>
<tr>
<td>Fixed Inv</td>
<td>0.61</td>
<td>0.02</td>
<td>-0.43</td>
</tr>
<tr>
<td>Structures</td>
<td>0.08</td>
<td>-0.19</td>
<td>-0.28</td>
</tr>
<tr>
<td>Equipment</td>
<td>0.30</td>
<td>-0.11</td>
<td>-0.91</td>
</tr>
<tr>
<td>Intellectual property products</td>
<td>0.40</td>
<td>0.25</td>
<td>0.02</td>
</tr>
<tr>
<td>Residential</td>
<td>-0.18</td>
<td>0.07</td>
<td>0.74</td>
</tr>
<tr>
<td>Inventories</td>
<td>0.29</td>
<td>-0.35</td>
<td>-0.53</td>
</tr>
<tr>
<td>Net exports</td>
<td>-0.43</td>
<td>0.36</td>
<td>1.3</td>
</tr>
<tr>
<td>Exports</td>
<td>0.05</td>
<td>0.04</td>
<td>-1.02</td>
</tr>
<tr>
<td>Imports</td>
<td>-0.49</td>
<td>0.31</td>
<td>2.32</td>
</tr>
<tr>
<td>Government</td>
<td>0.27</td>
<td>0.52</td>
<td>0.13</td>
</tr>
<tr>
<td>Federal</td>
<td>0.17</td>
<td>0.28</td>
<td>0.12</td>
</tr>
<tr>
<td>State and local</td>
<td>0.09</td>
<td>0.24</td>
<td>0.02</td>
</tr>
</tbody>
</table>
How Bad?

JP Morgan now sees economy contracting by 40% in second quarter, and unemployment reaching 20%.

Chart 2: Real GDP trajectory (2012$ saar, trillions)

Unemployment rate, %

Figure 3: Unemployment rate

Source: BofA Global Research, Bureau of Economic Analysis

Source: BLS, UBS estimates

The consumer is on the frontline from the shock of the COVID-19 pandemic. Based on the consumer cuts back referenced earlier, the total cumulative decline would be 10.4%. On a dollar basis, the -1.8% qoq, -8.5% qoq and -0.2% qoq decline, respectively, to the level of real activity. As 2Q and a -1% qoq saar decline in 3Q. On an un-annualized basis, this translates into a meaning that the growth rate for the year).

Most of the time, sequential means a month-over-month (mom sa) change. In the case levels. By looking at data sequentially, you are able to track turning points in the growth rates for GDP on a sequential basis based on seasonally adjusted annualized (as if it was the growth rate for the year).

A quick note on what % qoq saar means displaced and businesses adapt to a period of lost revenue. Nonetheless, we think this will be a slow recovery overall as many workers will be unleash pent-up demand which we believe will generate a 30% pop in 4Q GDP.

open the economy with businesses returning and people going back to work. This will show in Table 2, in early March, there was a sharp drop in spending on travel with the BAC aggregate credit and debit card data we can track daily spending trends. As we durable items, particularly those that require debt financing. We also found that sharp drop in auto sales to 11.4 million saar in March from the trend of almost 17 substantial decline in overall spending at the end of the month.

growth for categories such as shelter, utilities and healthcare, it translates to a consumer spending was down more than 40% yoy by late March. Even assuming trend clothing and other discretionary good and services. There is a partial offset by greater to recreation services (museum, theaters, etc.) and in a matter of days to restaurants,

Source: BofA Global Research, Bureau of Economic Analysis

Chart

1

US Economic Viewpoint |

-12% -10% -8% -6% -4% -2% 0%

How Bad?

Source: BofA Global Research, Bureau of Economic Analysis

Table 2: Cumulative decline in real GDP during previous recessions (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>Cumulative Decline</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>-10.4%</td>
</tr>
<tr>
<td>2008</td>
<td>-4.0%</td>
</tr>
<tr>
<td>1957</td>
<td>-3.6%</td>
</tr>
<tr>
<td>1974</td>
<td>-3.1%</td>
</tr>
<tr>
<td>1981</td>
<td>-2.6%</td>
</tr>
<tr>
<td>1953</td>
<td>-2.5%</td>
</tr>
<tr>
<td>1980</td>
<td>-2.2%</td>
</tr>
<tr>
<td>1970</td>
<td>-1.7%</td>
</tr>
<tr>
<td>1990</td>
<td>-1.4%</td>
</tr>
<tr>
<td>2001</td>
<td>-1.3%</td>
</tr>
</tbody>
</table>

Source: BofA Global Research, Bureau of Economic Analysis

Figure

1

US Economic Perspectives

How Bad?

16.0 16.5 17.0 17.5 18.0 18.5 19.0 19.5

Real GDP trajectory (2012$ saar, trillions)

Coro Crea
She Ss
Tuesday7 hours

Mar-18 Sep-18 Mar-19 Sep-19 Mar-20 Sep-20 Mar-21 Sep-21

Real GDP ($tn saar)
BofA forecast

Previous forecast New forecast

Unemployment rate, %

Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4

2019 2020 2021 2022

Source: BLS, UBS estimates
What is a Recession?

- **Growth is the default**
  - Resource accumulation, increases in efficiency

- **Recessions are anomalies**
  - Always some negative shocks, but not enough to offset growth forces
  - Caused by negative shock to the system that is large, rapid and sustained
  - Compounded by negative feedback loop
  - If there is a major shift in the structure of the economy output can stay below potential for years
  - Employment is a lagging indicator, as hiring and firing is an expensive process
## Job Numbers

**US Payroll Jobs**

<table>
<thead>
<tr>
<th>Category</th>
<th>April</th>
<th>Feb-Apr</th>
<th>% Ch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total nonfarm</td>
<td>131,072</td>
<td>-21,370</td>
<td>-14.0%</td>
</tr>
<tr>
<td>Scenic and sightseeing transportation</td>
<td>14</td>
<td>-23</td>
<td>-62.1%</td>
</tr>
<tr>
<td>Amusements, gambling, and recreation</td>
<td>716</td>
<td>-1,070</td>
<td>-59.9%</td>
</tr>
<tr>
<td>Clothing and clothing accessories stores</td>
<td>530</td>
<td>-759</td>
<td>-58.9%</td>
</tr>
<tr>
<td>Arts, entertainment, and recreation</td>
<td>1,124</td>
<td>-1,348</td>
<td>-54.5%</td>
</tr>
<tr>
<td>Offices of dentists</td>
<td>456</td>
<td>-521</td>
<td>-53.3%</td>
</tr>
<tr>
<td>Motion picture and sound recording industries</td>
<td>236</td>
<td>-221</td>
<td>-48.3%</td>
</tr>
<tr>
<td>Food services and drinking places</td>
<td>6,384</td>
<td>-5,919</td>
<td>-48.1%</td>
</tr>
<tr>
<td>Furniture and home furnishings stores</td>
<td>253</td>
<td>-218</td>
<td>-46.3%</td>
</tr>
<tr>
<td>Performing arts and spectator sports</td>
<td>279</td>
<td>-232</td>
<td>-45.4%</td>
</tr>
<tr>
<td>Accommodation</td>
<td>1,206</td>
<td>-885</td>
<td>-42.3%</td>
</tr>
<tr>
<td>Motor vehicles and parts(2)</td>
<td>614</td>
<td>-385</td>
<td>-38.5%</td>
</tr>
<tr>
<td>Sporting goods, hobby, book, and music stores</td>
<td>351</td>
<td>-199</td>
<td>-36.2%</td>
</tr>
<tr>
<td>Child day care services</td>
<td>683</td>
<td>-355</td>
<td>-34.2%</td>
</tr>
<tr>
<td>Miscellaneous store retailers</td>
<td>549</td>
<td>-272</td>
<td>-33.1%</td>
</tr>
<tr>
<td>Temporary help services(1)</td>
<td>2,040</td>
<td>-900</td>
<td>-30.6%</td>
</tr>
<tr>
<td>Air transportation</td>
<td>372</td>
<td>-139</td>
<td>-27.2%</td>
</tr>
<tr>
<td>Museums, historical sites, and similar institutions</td>
<td>130</td>
<td>-46</td>
<td>-26.1%</td>
</tr>
<tr>
<td>Travel arrangement and reservation services</td>
<td>172</td>
<td>-50</td>
<td>-22.5%</td>
</tr>
<tr>
<td>Offices of other health practitioners</td>
<td>775</td>
<td>-213</td>
<td>-21.5%</td>
</tr>
<tr>
<td>Rental and leasing services</td>
<td>459</td>
<td>-126</td>
<td>-21.5%</td>
</tr>
<tr>
<td>Vocational rehabilitation services</td>
<td>258</td>
<td>-68</td>
<td>-20.9%</td>
</tr>
<tr>
<td>Automobile dealers</td>
<td>1,037</td>
<td>-272</td>
<td>-20.8%</td>
</tr>
</tbody>
</table>
Employment and Recessions
Roots of the great recession

- $15 trillion in borrowing 01-07
  - Split between consumers and finance
  - Completely collapse of lending standards

- Caused massive imbalances in economy
  - Home production to 2 million plus per year, vacancies grow to record level
  - Home prices / mortgage borrowing peaking at 15% annually
  - Consumer savings falling to 2% of DPI
  - Trade deficit widened to 6% of GDP

- Wheels started falling off train late-06
  - Housing market / mortgage lending start massive deceleration
  - Housing delinquencies started rising early 07

- Great Recession start: Dec 07
  - Millions of jobs lost permanently in construction, real estate, finance, retail
  - Secondary shocks to system broad based, 8 million job losses overall
  - 6 quarter recession 5.5% loss GDP
  - Not back to normal levels of unemployment until 2015
Employment and Recessions

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NUMBER OF UNEMPLOYED</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total unemployed</td>
<td>5,387</td>
<td>22,504</td>
<td>17,117</td>
</tr>
<tr>
<td>On temporary layoff</td>
<td>574</td>
<td>17,878</td>
<td>17,304</td>
</tr>
<tr>
<td>Permanent job losers</td>
<td>1,287</td>
<td>1,951</td>
<td>664</td>
</tr>
<tr>
<td>Completed temporary jobs</td>
<td>623</td>
<td>555</td>
<td>-68</td>
</tr>
<tr>
<td>Job leavers</td>
<td>685</td>
<td>520</td>
<td>-165</td>
</tr>
<tr>
<td>Reentrants</td>
<td>1,761</td>
<td>1,329</td>
<td>-432</td>
</tr>
<tr>
<td>New entrants</td>
<td>457</td>
<td>271</td>
<td>-186</td>
</tr>
</tbody>
</table>
This is not a typical business cycle

- Shock to system is a function of public health mandates
  - Very large, rapid—but not sustained
  - No reason for major shift in structure of economy
  - Job losses being seen are not (yet) permanent

- The harm to economy is building up now
  - Loss of revenue / incomes
  - Supply chain effects

- Broad range of possible outcomes
The Big 5 questions

1. How long will the shutdowns last?
2. How deep are the closures?
3. How healthy the economy was prior to the pandemic
4. What the government does to intervene
5. Will there be a major shift in post virus spending patterns
#1: How Long?

New confirmed cases of Covid-19 in United States and China

Seven-day rolling average of new cases, by number of days since 10 average cases first recorded
box office receipts have been zero since movie theaters were shut down in China in mid-February. Similarly, college basketball attendance and Broadway show attendance are now zero in the US.

Our US consumer activity tracker includes hotel occupancy, movie box office receipts, Broadway box office receipts, Redbook retail sales, college basketball attendance, and commercial airline flights. Our US consumer activity tracker incorporates revisions to our China Economic Activity Tracker.

Dotted lines indicate projections based on incomplete data.
#1: How Long?

- We are past the peak of new cases
  - Efforts are paying off
  - Need to see substantial declines

- Partial reopening
  - Some activities will be allowed
  - Some controls will be left in place
  - Look for small outbreaks

- Q3 will be largely open for business
  - Air travel / large events not
  - Some lagging behavioral issues

- Will there be another major resurgence?
  - Running down the learning curve
  - Testing systems in place
#2 How Deep?

Q2 Growth: -15% to -25% (SAAR)

<table>
<thead>
<tr>
<th>Compensation by Sector</th>
<th>2019:Q3</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Government</td>
<td>2063.7</td>
<td>1.0</td>
<td>2063.7</td>
</tr>
<tr>
<td>Health care</td>
<td>1321.2</td>
<td>0.9</td>
<td>1185.4</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>1145.0</td>
<td>0.9</td>
<td>1030.5</td>
</tr>
<tr>
<td>Professional services</td>
<td>1122.6</td>
<td>1.0</td>
<td>1122.6</td>
</tr>
<tr>
<td>Finance and insurance</td>
<td>849.9</td>
<td>0.9</td>
<td>764.9</td>
</tr>
<tr>
<td>Retail trade</td>
<td>654.0</td>
<td>0.5</td>
<td>327.0</td>
</tr>
<tr>
<td>Construction</td>
<td>588.6</td>
<td>0.9</td>
<td>529.7</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>566.6</td>
<td>0.8</td>
<td>453.2</td>
</tr>
<tr>
<td>Administrative</td>
<td>492.8</td>
<td>1.0</td>
<td>492.8</td>
</tr>
<tr>
<td>Accommodation and food</td>
<td>422.2</td>
<td>0.5</td>
<td>211.1</td>
</tr>
<tr>
<td>Information</td>
<td>407.7</td>
<td>1.0</td>
<td>407.7</td>
</tr>
<tr>
<td>Transportation warehousing</td>
<td>396.3</td>
<td>0.9</td>
<td>356.7</td>
</tr>
<tr>
<td>Management of companies</td>
<td>367.8</td>
<td>1.0</td>
<td>367.8</td>
</tr>
<tr>
<td>Other services</td>
<td>338.0</td>
<td>0.8</td>
<td>253.5</td>
</tr>
<tr>
<td>Educational services</td>
<td>207.4</td>
<td>1.0</td>
<td>207.4</td>
</tr>
<tr>
<td>Real estate</td>
<td>168.2</td>
<td>0.9</td>
<td>151.4</td>
</tr>
<tr>
<td>Arts, entertainment</td>
<td>122.8</td>
<td>0.5</td>
<td>61.4</td>
</tr>
<tr>
<td>Mining, quarrying</td>
<td>87.3</td>
<td>0.8</td>
<td>69.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11322.1</td>
<td></td>
<td>10056.8</td>
</tr>
</tbody>
</table>

Total decline in GDP (no supply chain): -8%
The Balance between spending and incomes

US Personal Savings Rate
#3: How Healthy?

**Payroll Job Growth (Y-o-Y)**

**Unemployment and Job Openings (Rates)**

Source: BLS, JOLTS
Consumer Balance Sheets

Household Savings Rate

Real Wage Gains for US Workers
Atlanta Fed Wage Tracker

Source: FRED
# Distributional Aspects

## Ratio of debt payments to family income

<table>
<thead>
<tr>
<th>Family characteristic</th>
<th>Median</th>
<th>Share 40% plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>All families</td>
<td>17.9</td>
<td>18.7</td>
</tr>
<tr>
<td>Percentile income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 20%</td>
<td>18.6</td>
<td>19.1</td>
</tr>
<tr>
<td>20–39.9</td>
<td>17.5</td>
<td>17.1</td>
</tr>
<tr>
<td>40–59.9</td>
<td>19.4</td>
<td>20.3</td>
</tr>
<tr>
<td>60–79.9</td>
<td>19.5</td>
<td>21.9</td>
</tr>
<tr>
<td>80–89.9</td>
<td>17.8</td>
<td>19.3</td>
</tr>
<tr>
<td>90–100</td>
<td>13.7</td>
<td>12.5</td>
</tr>
</tbody>
</table>

### Financial Obligations % DPI

![Financial Obligations % DPI Chart](chart_image)
Real Estate Fundamentals

Credit Score for Mortgage Originations

Equity share of Residential Real Estate

Median, 25th percentile, 10th percentile
Owner and Renter Costs?

Share of Owners by Housing Cost as % of Income w Mortgage

Share of Renters by Housing Cost as % of Income

Source: ACS
Debt Bubble Trouble?

Debt as Share GDP (Percent)

Commercial Bank Dq Rates

Beacon Economics
Stressed Global Trade

### US Real Trade Flows

#### Exports
- **Total, All Countries**: 1,509.90
- **Canada**: 270.6
- **Mexico**: 237.3
- **China**: 97.8
- **Japan**: 67.9
- **United Kingdom**: 63.6

#### Imports
- **Total, All Countries**: 2,296.00
- **China**: 418.6
- **Mexico**: 330.5
- **Canada**: 292.4
- **Japan**: 132.1
- **Germany**: 116.8

<table>
<thead>
<tr>
<th>Country</th>
<th>Exports Total, All Countries</th>
<th>Exports % Change</th>
<th>Exports Q3 Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total, All Countries</td>
<td>1,509.90</td>
<td>-1.3%</td>
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</tr>
<tr>
<td>Canada</td>
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<td>China</td>
<td>97.8</td>
<td>-12.1%</td>
<td>-13.4</td>
</tr>
<tr>
<td>Japan</td>
<td>67.9</td>
<td>-0.4%</td>
<td>-0.3</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>63.6</td>
<td>4.8%</td>
<td>2.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
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<td>-39.8</td>
</tr>
<tr>
<td>China</td>
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<td>-15.2%</td>
<td>-74.9</td>
</tr>
<tr>
<td>Mexico</td>
<td>330.5</td>
<td>3.5%</td>
<td>11.1</td>
</tr>
<tr>
<td>Canada</td>
<td>292.4</td>
<td>-0.8%</td>
<td>-2.3</td>
</tr>
<tr>
<td>Japan</td>
<td>132.1</td>
<td>1.5%</td>
<td>1.9</td>
</tr>
<tr>
<td>Germany</td>
<td>116.8</td>
<td>1.0%</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Manufacturing Recession?

**Contribution to Real Investment Growth**

<table>
<thead>
<tr>
<th>Contribution</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private fixed investment</td>
<td>5.15</td>
<td>3.53</td>
<td>0.28</td>
</tr>
<tr>
<td><strong>Structures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mining exploration, shafts, and wells</td>
<td>1.15</td>
<td>0.51</td>
<td>-0.63</td>
</tr>
<tr>
<td>Other structures</td>
<td>0.02</td>
<td>0.10</td>
<td>-0.31</td>
</tr>
<tr>
<td><strong>Commercial and health care</strong></td>
<td>-0.12</td>
<td>-0.14</td>
<td>-0.25</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-0.34</td>
<td>-0.04</td>
<td>-0.03</td>
</tr>
<tr>
<td>Power and communication</td>
<td>-0.42</td>
<td>0.04</td>
<td>-0.01</td>
</tr>
<tr>
<td><strong>Equipment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation equipment</td>
<td>0.14</td>
<td>0.62</td>
<td>-0.37</td>
</tr>
<tr>
<td>Other equipment</td>
<td>0.89</td>
<td>0.23</td>
<td>-0.18</td>
</tr>
<tr>
<td>Industrial equipment</td>
<td>0.55</td>
<td>0.24</td>
<td>-0.16</td>
</tr>
<tr>
<td>Information processing equipment</td>
<td>1.32</td>
<td>0.64</td>
<td>0.20</td>
</tr>
<tr>
<td><strong>Intellectual property products</strong></td>
<td>1.04</td>
<td>2.33</td>
<td>1.65</td>
</tr>
<tr>
<td>Entertainment, literary, and artistic</td>
<td>0.05</td>
<td>0.14</td>
<td>0.05</td>
</tr>
<tr>
<td>Research and development</td>
<td>0.17</td>
<td>1.02</td>
<td>0.48</td>
</tr>
<tr>
<td>Software</td>
<td>0.82</td>
<td>1.17</td>
<td>1.12</td>
</tr>
</tbody>
</table>

**Growth in Industrial Production (YoY)**

- IP Manufacturing

Source: Board of Governors Fed Reserve, BEA
The Oil Situation

Oil Prices

Mining exploration, shafts, and wells
4: Policy (Over)reaction

CARES Act: $2.5 trillion in a $5.5 trillion quarter

- **Households**
  - $300 billion direct payments
  - $250 billion unemployment expansion
  - Potential benefits = median weekly income

- **Business**
  - $400-600 billion small business loans
  - $500 billion economic stabilization for airlines, national security important industries etc

- **Local government support**
  - $350 billion, direct payments to governments, hospitals, airports, transit

- **The Fed**
  - Rate cuts
  - Full QE efforts

- **Other Efforts**
  - IRS, states: delaying tax payments
  - Local government moratorium on evictions
  - Large landlords providing rent deferral
  - Large public mortgage holders allowing owners to defer mortgages
  - Food programs expanding
The Real Debt Crisis

- Net Federal Debt per person: > $50,000
- Federal Government will borrow ~$3,000 more per person in 2020 alone.

Source: DOF, ACS
5: Consumer / Business Behavior

Consumer Behavior

- This is not a “new normal”
  - Polio, smallpox, plague, etc
  - Spanish flu, MERS, SARS
  - Terrorism episodes
  - No permanent change in consumer behavior seen

- Financial outcomes
  - Solid fundamentals a cushion
  - Some households hurt by lost income albeit offset by UI / payments
  - Other households building savings / pent up demand

Business Behavior

- Shakeout in stressed sectors
  - Oversupply of restaurants
  - Retail shifting to online

- Slowdown in investment second half of year possible
  - Working to rebuild sales
  - Investing more in ‘safe’ workplace needs
  - Pause in some hiring

- Perhaps a good lesson?
  - More flexibility for remote work
  - Some long run impact on business travel
So what’s up with the markets?

CAPE Price E10 Ratio


Price-Earnings Ratio (CAPE, P/E10)


Visuals: Line graph showing the historical price-earnings ratio from 1890 to 2030, with significant peaks at 1929 and 2000.
So what’s up with the markets?
Economic Risks: Now vs Then?

Then

— Millions of jobs in real estate / construction / finance permanently lost
— Financial system pushed to edge by loan losses

Then: Huge changes little help

— Economy highly distorted
— Government policy—late to the game

Now: Job Furloughs

— 3 months to get virus under control
— 10 weeks without work will be a big problem for a small subset of workers
— Unemployment insurance, direct payments will help a lot

Now: Few changes too much help

— Economy was is solid shape
— Massive government involvement
— Expand short term job supports
Policy Thoughts

- Don’t be pennywise and pound-foolish
  - A little panic is good
  - Policy makers should accept inevitability of some demand shock
  - Efforts to flatten the curve: cancel events, shut down large gatherings, close schools in effected areas
  - The quick cases are under control; the less this will mean in the end
2020: The Long Run Still Matters

- **Baseline Forecast**
  - -4.8% Q1, -20% Q2, 20% Q3, 5% Q4
  - Is that a recession?
  - Unemployment back to or below 5% by year end
  - Moderate upticks in debt distress
  - Stock market—who knows
  - Little impact on real estate
  - Fundamentals of the OC are hit / miss when it comes to the economic crisis

- **Wildcards**
  - Second round of outbreaks / economic shutdowns
  - Global situation
  - Retail / restaurants already distressed
  - Can financial chaos create its own crisis?
  - How long until entertainment / travel gets going
  - Local and federal government budgets
What can Beacon do for you?

**Connect with us.**
To view again or download this presentation and for further information, go to: [www.BeaconEcon.com](http://www.BeaconEcon.com)

**Continue the conversation.**
Contact **Dr. Chris Thornberg** directly at chris@beaconecon.com or 310.571.3399

**Let’s discuss your goals and needs.**
Beacon has **6 Practice Areas** covering a range of services and products.

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**Our 6 Practice Areas**

- **Housing, Land Use, & Real Estate Advisory**
- **Sustainable Growth and Development**
- **Economic & Revenue Forecasting**
- **Economic, Fiscal, and Social Impact Analysis**
- **Regional and Sub-Regional Analysis**
- **Litigation and Testimony**

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For more information, see Slide 2.
Beacon conducts analysis at an international, national, state, county, and city level -- and even down to the zip code, pending data availability. We analyze data on Employment, Industry, Real Estate, and Consumption.

**Past Clients:**
- City and County of Los Angeles
- City and County of Riverside
- East Bay Economic Dev. Agency

Beacon has evaluated the impact of entities like universities, music festivals, infrastructure projects, and real estate development projects. Beacon has also conducted impact analyses that combine more than one of the above like that of L.A’s Olympic bid.

**Past Clients:**
- University of Southern California
- Metropolitan Water District
- LA 2024 Olympic Bid Committee

Beacon conducts industry and policy analysis on topics like green innovation, tech and workforce development, and industry sector strategies. Beacon has strong in-house expertise around housing policy and economic development support.

**Past Clients:**
- California Apartment Association
- Long Beach Downtown Dev. Corp.
- Santa Cruz Workforce Dev. Board

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**Housing, Land Use, & Real Estate Advisory**

**Economic & revenue forecasting**

**Litigation and testimony**