Overview

Consider industry outcomes as well as industry structure:

- Use static and dynamic measures for complete picture
- Industry structure not always strict predictor of competitiveness

Understand underlying macroeconomic environment:

- Industry outcomes do not exist in isolation
- Income-side affects consumption, investment and innovation
## Industry Outcomes: Stable Prices

Stable prices and rapid declines in quality adjusted prices

### Price Change – CPI Seasonally Adjusted (2010 to 2015)

<table>
<thead>
<tr>
<th>Category</th>
<th>Price Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water and sewerage maintenance</td>
<td>29.6%</td>
</tr>
<tr>
<td>Hospital services</td>
<td>27.4%</td>
</tr>
<tr>
<td>Delivery services</td>
<td>24.9%</td>
</tr>
<tr>
<td>College tuition and fees</td>
<td>23.3%</td>
</tr>
<tr>
<td>Motor vehicle insurance</td>
<td>22.6%</td>
</tr>
<tr>
<td>Medical care services</td>
<td>15.7%</td>
</tr>
<tr>
<td>Food -- Away from home</td>
<td>13.3%</td>
</tr>
<tr>
<td>Cable and satellite television and radio service</td>
<td>13.0%</td>
</tr>
<tr>
<td>Food -- Overall</td>
<td>12.5%</td>
</tr>
<tr>
<td>Garbage and trash collection</td>
<td>12.3%</td>
</tr>
<tr>
<td>Food -- At Home</td>
<td>12.1%</td>
</tr>
<tr>
<td>All items</td>
<td>9.5%</td>
</tr>
<tr>
<td>Electricity</td>
<td>8.1%</td>
</tr>
<tr>
<td>Household energy</td>
<td>3.0%</td>
</tr>
<tr>
<td>Internet services/electronic information</td>
<td>0.4%</td>
</tr>
</tbody>
</table>
Industry Outcomes: Rising Output

Rising output and supply ahead of demand:

• Comcast doubles capacity every 18 months
• Comcast delivered 108% of advertised speeds (Sep 2013)
• No evidence of rampant congestion at interconnection points
Industry Outcomes: Rising Investment

Record capital investment:

- Three of top 10 domestic investors for four years are ISPs
- Six year post-recessionary period had 7% more investment
- 9.3M to 12.1M homes had a new provider or upgrades enter
Macro Environment: Low Investment

Capital per worker hour steadily declined since about 2010

10-year productive capital growth rate lowest since WW II
Macro Environment: Low Productivity

Just about the lowest productivity growth rate since WW II
Macro Environment: Low LFPR/EPR

LFPR at 1977 levels – decrease from 66.2% (1/08) to 62.5% (11/15)

EPR at 1984 levels – decrease from 62.9% (1/08) to 59.3% (11/15)

LFPR rose sharply in Germany and slightly in France and Spain
Macro Environment: Incomes Declined

Real median household incomes at 1996-levels (2014 dollars)

African American real median household incomes a third of overall
Macro Environment: High Federal Debt

Highest debt-to-GDP ratio since WW II – 64% (Q1 08’) to 100% (Q3 15’)

Source: Federal Reserve Bank of St. Louis, US. Office of Management and Budget
research.stlouisfed.org
Ideas

Don’t look at industries in isolation

Understand the macroeconomic challenges

Fed Chair Yellen’s solutions are helpful (July 2015):

• Strengthen education and training
• Encourage entrepreneurship and innovation
• Promote capital investment, both public and private