Changing Economics of Listed Firms

And

The Declining Relevance of Financial Statements

Anup Srivastava
Changing economics in one generation

Today’s companies with largest market capitalization

- Apple Inc.
- Alphabet Inc
- Microsoft Corporation
- Amazon
- Facebook Inc
- Alibaba Group

1955
- General Motors
- US Steel
- General Electric
- Chrysler
- Standard Oil
- AMOCO
- CBS
- General Electric
- Goodyear Tire
Contrast Walmart’s $160 billion of hard assets for its $300 billion valuation against Facebook’s $20 billion dollars of hard assets for its $550 billion valuation.
Why have measures of earnings quality changed over time?

Anup Srivastava*
Why have measures of earnings quality changed over time?

Anup Srivasta
**COGS is no longer the largest cost item for many intangible-intensive firms ($M)**

<table>
<thead>
<tr>
<th>Data Year -</th>
<th>Company Name</th>
<th>SG&amp;A</th>
<th>COGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>NESTLE SA/AG</td>
<td>48,885</td>
<td>44,394</td>
</tr>
<tr>
<td>2018</td>
<td>MICROSOFT CORP</td>
<td>36,949</td>
<td>28,453</td>
</tr>
<tr>
<td>2017</td>
<td>JOHNSON &amp; JOHNSON</td>
<td>31,974</td>
<td>18,987</td>
</tr>
<tr>
<td>2016</td>
<td>ALPHABET INC</td>
<td>31,418</td>
<td>29,038</td>
</tr>
<tr>
<td>2010</td>
<td>PFIZER INC</td>
<td>28,796</td>
<td>12,441</td>
</tr>
<tr>
<td>1991</td>
<td>INTL BUSINESS MACHINES CORP</td>
<td>27,978</td>
<td>27,325</td>
</tr>
<tr>
<td>2011</td>
<td>NOVARTIS AG</td>
<td>27,720</td>
<td>14,093</td>
</tr>
<tr>
<td>2010</td>
<td>GLAXOSMITHKLINE PLC</td>
<td>25,169</td>
<td>8,813</td>
</tr>
<tr>
<td>2017</td>
<td>ROCHE HOLDING AG</td>
<td>23,941</td>
<td>14,571</td>
</tr>
<tr>
<td>2008</td>
<td>MERCK &amp; CO-PRO FORMA</td>
<td>23,595</td>
<td>16,246</td>
</tr>
<tr>
<td>2017</td>
<td>LVMH MOET HENNESSY LOUIS V</td>
<td>23,511</td>
<td>15,582</td>
</tr>
<tr>
<td>2010</td>
<td>MERCK &amp; CO</td>
<td>21,363</td>
<td>8,916</td>
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<tr>
<td>2016</td>
<td>INTEL CORP</td>
<td>21,037</td>
<td>15,313</td>
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<tr>
<td>2017</td>
<td>BAYER AG</td>
<td>20,922</td>
<td>10,430</td>
</tr>
<tr>
<td>2017</td>
<td>SANOFI</td>
<td>18,691</td>
<td>12,553</td>
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<tr>
<td>2017</td>
<td>ANHEUSER-BUSCH INBEV</td>
<td>18,199</td>
<td>17,321</td>
</tr>
<tr>
<td>2015</td>
<td>CISCO SYSTEMS INC</td>
<td>18,058</td>
<td>17,373</td>
</tr>
</tbody>
</table>
Why Are Successive Cohorts of Listed Firms Persistently Riskier?

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<table>
<thead>
<tr>
<th>Fama–French industry code</th>
<th>Industry name</th>
<th>Composition</th>
<th>Recency</th>
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<tbody>
<tr>
<td>13</td>
<td>Pharmaceutical Products</td>
<td>3.48</td>
<td>17</td>
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<tr>
<td>34</td>
<td>Business services</td>
<td>3.34</td>
<td>38</td>
</tr>
<tr>
<td>27</td>
<td>Gold and precious metals</td>
<td>3.30</td>
<td>39</td>
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<tr>
<td>11</td>
<td>Healthcare</td>
<td>3.24</td>
<td>16</td>
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<tr>
<td>12</td>
<td>Medical equipment</td>
<td>3.15</td>
<td>5</td>
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<tr>
<td>32</td>
<td>Communication</td>
<td>3.10</td>
<td>24</td>
</tr>
<tr>
<td>35</td>
<td>Computers</td>
<td>3.09</td>
<td>31</td>
</tr>
<tr>
<td>7</td>
<td>Entertainment</td>
<td>3.01</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fama–French industry code</th>
<th>Industry name</th>
<th>Composition</th>
<th>Recency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Construction materials</td>
<td></td>
<td>1.97</td>
</tr>
<tr>
<td></td>
<td>Business supplies</td>
<td></td>
<td>1.94</td>
</tr>
<tr>
<td></td>
<td>Shipping containers</td>
<td></td>
<td>1.93</td>
</tr>
<tr>
<td></td>
<td>Textiles</td>
<td></td>
<td>1.92</td>
</tr>
<tr>
<td></td>
<td>Shipbuilding railroad</td>
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<td>1.87</td>
</tr>
<tr>
<td></td>
<td>railroad equipment</td>
<td></td>
<td>1.85</td>
</tr>
<tr>
<td></td>
<td>Aircraft</td>
<td></td>
<td>1.73</td>
</tr>
<tr>
<td></td>
<td>Utilities</td>
<td></td>
<td>1.49</td>
</tr>
</tbody>
</table>

Srivastava (JAE 2014)
This is not just “changes in industry” effect
Also, within industry trends

Measured over a common period of 2001–2010

The Construct Validity of Industry-Based Measures of Real Activity Manipulation
Srivastava (2017)
Changing composition of the set of listed firms.

Govindarajan and Srivastava (HBR 2016)
81% of firms listed today were listed after 1990

What kind of firms are they?
E.g., organizational strategy and competency, customer and social relationships, computerized data and software, and human capital
Enache and Srivastava (Management Science, 2018)

**Advertising Expenses**

**Capital Expenditures**

**R&D**

**Investment Main SG&A**
Changes in operating investments over time

Intangible Investment
Investment rates in assets, as a percentage of private-sector GDP

Source: Carol Corrado and Charles Hulten

THE WALL STREET JOURNAL
FASB: Statement of Financial Accounting Concepts No. 1

• The primary focus of financial reporting is information about earnings and its components.
• Financial reporting is expected to provide information about an enterprise’s financial performance during a period and about how management of an enterprise has discharged its stewardship responsibility to owners.
• Financial accounting is not designed to measure directly the value of a business enterprise, but the information it provides may be helpful to those who wish to estimate its value.
Decline in Matching

The extent to which expenses are matched to revenues

Without matching, profit margin is a meaningless concept
Decline in Matching

\[ Revenues_{i,t} = \beta_1 + \beta_2 \times Expenses_{i,t-1} + \beta_3 \times Expenses_{i,t} + \beta_4 \times Expenses_{i,t+1} + \epsilon_{i,t} \]

Srivastava (JAE 2014)
Increasing Earnings Volatility
(Rolling four-year stand dev on a firm-specific basis)

Srivastava (JAE 2014)
Median Volatility of Scaled Earnings
Decline in Relevance

Earnings are useful for investors decisions.

The extent to which earnings carry the same information as that priced by stock markets

\[ Ret_{i,t} = \beta_{1,t} + \beta_{2,t} \times \Delta Earnings_{i,t} + \beta_{3,t} \times Earnings_{i,t} + \epsilon_{i,t} \]

Relevance: **R-square**
Earnings explain only 2.4% of variation in stock returns for a 21st century company — which means that almost 98% of the variation in companies’ annual stock returns are not explained by their annual earnings.
A few HBRs
A trilogy of articles in 2018

Why Financial Statements Don’t Work for Digital Companies
by Vijay Govindarajan, Shivaram Rajgopal, and Anup Srivastava

Why We Need to Update Financial Reporting for the Digital Era
by Vijay Govindarajan, Shivaram Rajgopal, and Anup Srivastava

A Blueprint for Digital Companies’ Financial Reporting
by Vijay Govindarajan, Shivaram Rajgopal, and Anup Srivastava
Two points for consideration
Today’s companies with largest market capitalization

- Apple Inc., Alphabet Inc, Microsoft Corporation, Amazon, Facebook Inc,
- Alibaba Group

A) Supply side and demand side network effects exist,
   - where both customers and suppliers get locked into the given company’s product.

B) Increasing returns to scale,
   - The value to a user or supplier increases with the size of the network.
   - Firm’s value increases with network.
- Size by itself creates value
- Network effect—the biggest source of value for today’s corporations
- Basic tenet of financial accounting
  - (assets depreciate with use).

“Negative” depreciation?
DuPont Analysis

\[ \text{ROE} = \frac{\text{Net Income}}{\text{Shareholder EQ}} \]

Net Income \( \times \) Sales \( \times \) Total Assets

Profitability Ratio \( \times \) Sales turnover ratio \( \times \) Leverage

Can anyone calculate any of the three ratios for Facebook?
thank you