Capitalists in the Twenty-First Century

Matthew Smith, US Treasury Department
Danny Yagan, UC Berkeley and NBER
Owen Zidar, Chicago Booth and NBER
Eric Zwick, Chicago Booth and NBER

November 2017

*The views expressed here are the authors’ and do not necessarily reflect those of the Treasury Department.
What is the nature of top incomes in the 21st century?

Thresholds: Top 1% ≈ $400K. Top 0.1% ≈ $1.5M. Top 0.01% ≈ $6.8M.

Source: Piketty Saez (2003, 2016)
Have passive rentiers replaced the working rich?

No rise in wage share since 2000

Top 1% income in this form as share of total income (%)

Year


Wages

Business, interest, rents, royalties, estates, trusts
Two potential answers for the 21st century

1. **Rentiers/Capital**: passive returns to accumulated capital

   *The human capital hypothesis* is far less consequential than one might imagine. There is little evidence that labor’s share in national income has increased significantly in a very long time: “non-human” capital seems almost as indispensable in the twenty first century as it was in the eighteenth or nineteenth, and there is no reason why it may not become even more so.

   —**THOMAS PIKETTY** (2014)

Two potential answers for the 21st century

1. **Rentiers/Capital**: passive returns to accumulated capital

2. **Working rich/Capitalists**: active returns to scarce owner-mgr skill

> For a rich client whose reputation or fortune, or both, are at stake will scarcely count any price too high to secure the services of the best man he can get: and it is this again that enables jockeys and painters and musicians of exceptional ability to get very high prices.

—*Alfred Marshall* (1890)

Rising U.S. income inequality
A private business income phenomenon

Top 1% income in this form as share of total income (%)

Year

Business income from private "pass-through" firms
Business income from other firms (C-corporation dividends)
Other capital income: interest, rents, royalties, estates, trusts
Fact: Private business income growth → rising top incomes

Question: What is the nature of biz income and why is it rising?

Data: Link 15 million firms to their owners and workers

Strategy: Provide facts and test rentier/capital hypothesis

1. Firm performance does not depend on the owner
2. Diffs in business income reflect diffs in accumulated $K$

Bottom line: Most capitalists in the 21st century are working rich
Contributions

Working rich still dominate top of the income distribution

- Person-level focus → Most are working-rich (Piketty-Saez 2003 vs. Piketty 2014, Piketty-Saez-Zucman 2016)
- Consistent with rising returns to top skill (Katz-Murphy 1992, Goldin-Katz 2009) though silent on social value

Explicitly link firm profitability and top income inequality

- Interpretation of excess returns (Fagereng-Guiso-Malacrino-Pistaferri)

Implications for economic measurement & taxation

- Decline in labor share is overstated (Karabarbounis-Neiman 2014)
- Rich earn active business income → tax rate falls as top
2. Data on Firms Linked to Owners and Workers
S-corporations/Partnerships: Private “pass-through” businesses
- Taxed only at owner level, lower taxes
- S-corporations: Dominant form, ≤ 100 U.S. individual owners
- More S-corps than C-corps, even with >500M sales
- Nearly all public companies are C-corps

Pass-through taxation → firm-owner-worker paper trail
- Forms 1120S/1065 + 1120S/1065 K1 + 1040 + W-2
3. Business Ownership in the Top 1%
Most top earners own a private business
Full sample in 2014

Compare: 9,900 S&P 1500 execs with total pay $32B (Execucomp)
Most profits are earned by owners of working age
Main owner sample: Share of S-corporation owners by age.
Top owners are **active** (as reported) and **undiversified**

- Not passive, not holding many firms
## Firms: Millions in sales, many employees


### B. Firms with Top 1-0.1% Owner

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>p10</th>
<th>p50</th>
<th>p90</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>7,375</td>
<td>1,250</td>
<td>3,164</td>
<td>16,102</td>
</tr>
<tr>
<td>Profits</td>
<td>364.63</td>
<td>-4.90</td>
<td>279.84</td>
<td>915.07</td>
</tr>
<tr>
<td>Profit Margin</td>
<td>0.10</td>
<td>0</td>
<td>0.07</td>
<td>0.27</td>
</tr>
<tr>
<td>Assets</td>
<td>3,020</td>
<td>106.82</td>
<td>778.68</td>
<td>5,969</td>
</tr>
<tr>
<td>Employees</td>
<td>57.44</td>
<td>0.84</td>
<td>19.23</td>
<td>114.79</td>
</tr>
<tr>
<td>Number of owners</td>
<td>2.44</td>
<td>1</td>
<td>2</td>
<td>4.33</td>
</tr>
<tr>
<td>Sales per worker</td>
<td>115.28</td>
<td>6.12</td>
<td>53.17</td>
<td>270.70</td>
</tr>
<tr>
<td>Profits per worker</td>
<td>5.71</td>
<td>-0.26</td>
<td>1.39</td>
<td>16.28</td>
</tr>
<tr>
<td>Profits per owner</td>
<td>135.17</td>
<td>-50.39</td>
<td>161.49</td>
<td>677.80</td>
</tr>
<tr>
<td>Owner payments</td>
<td>619.62</td>
<td>62.19</td>
<td>502.05</td>
<td>1,296</td>
</tr>
<tr>
<td>Owner payments per owner</td>
<td>271.22</td>
<td>3.04</td>
<td>304.42</td>
<td>861.12</td>
</tr>
<tr>
<td>Owner payments per worker</td>
<td>10.19</td>
<td>0</td>
<td>2.71</td>
<td>28.56</td>
</tr>
<tr>
<td>Owner payments / Profit</td>
<td>6.14</td>
<td>0.58</td>
<td>1.26</td>
<td>3.97</td>
</tr>
<tr>
<td>Owner payments / Sales</td>
<td>0.09</td>
<td>0</td>
<td>0.06</td>
<td>0.24</td>
</tr>
</tbody>
</table>

### C. Firms with Top 0.1% Owner

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>p10</th>
<th>p50</th>
<th>p90</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>32,854</td>
<td>1,706</td>
<td>8,655</td>
<td>68,288</td>
</tr>
<tr>
<td>Profits</td>
<td>2,235</td>
<td>-42.97</td>
<td>915.80</td>
<td>4,744</td>
</tr>
<tr>
<td>Profit Margin</td>
<td>0.14</td>
<td>0</td>
<td>0.08</td>
<td>0.39</td>
</tr>
<tr>
<td>Assets</td>
<td>18,631</td>
<td>251.32</td>
<td>3,275</td>
<td>30,346</td>
</tr>
<tr>
<td>Employees</td>
<td>150.80</td>
<td>0</td>
<td>31.75</td>
<td>260.24</td>
</tr>
<tr>
<td>Number of owners</td>
<td>3.64</td>
<td>1</td>
<td>2</td>
<td>6.51</td>
</tr>
<tr>
<td>Sales per worker</td>
<td>179.23</td>
<td>5.91</td>
<td>70.30</td>
<td>421.52</td>
</tr>
<tr>
<td>Profits per worker</td>
<td>11.58</td>
<td>-0.03</td>
<td>2.49</td>
<td>26.83</td>
</tr>
<tr>
<td>Profits per owner</td>
<td>4,397</td>
<td>-30.61</td>
<td>931.87</td>
<td>8,200</td>
</tr>
<tr>
<td>Owner payments</td>
<td>2,531</td>
<td>4.21</td>
<td>1,374</td>
<td>5,495</td>
</tr>
<tr>
<td>Owner payments per owner</td>
<td>2,965</td>
<td>18.65</td>
<td>1,166</td>
<td>6,408</td>
</tr>
<tr>
<td>Owner payments per worker</td>
<td>14.09</td>
<td>0.02</td>
<td>2.75</td>
<td>32.44</td>
</tr>
<tr>
<td>Owner payments / Profit</td>
<td>6.04</td>
<td>0.37</td>
<td>1.06</td>
<td>2.20</td>
</tr>
<tr>
<td>Owner payments / Sales</td>
<td>0.08</td>
<td>0</td>
<td>0.05</td>
<td>0.20</td>
</tr>
</tbody>
</table>

Top S-corporations are **mid-market** and **closely held**

- 65% top sales in firms w/ $<50M sales, 85% w/ $<500M
- Not superstar firms with many owners
### Industries: Diverse, skill-intensive

2014 main sample. Statistics in millions of 2014 USD.

<table>
<thead>
<tr>
<th>Industry (NAICS)</th>
<th>Rank</th>
<th>Profits</th>
<th>Industry (NAICS)</th>
<th>Rank</th>
<th>Profits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offices of physicians (6211)</td>
<td>1</td>
<td>8980</td>
<td>Mmt of cos (5511)</td>
<td>1</td>
<td>12870</td>
</tr>
<tr>
<td>Othr prof/tech svc (5419)</td>
<td>2</td>
<td>4890</td>
<td>Othr fin invstmnt actvty (5239)</td>
<td>2</td>
<td>7815</td>
</tr>
<tr>
<td>Offices of dentists (6212)</td>
<td>3</td>
<td>4430</td>
<td>Auto dealers (4411)</td>
<td>3</td>
<td>6482</td>
</tr>
<tr>
<td>Othr spclty trade cntrctr (2389)</td>
<td>4</td>
<td>4300</td>
<td>Othr prof/tech svc (5419)</td>
<td>4</td>
<td>5157</td>
</tr>
<tr>
<td>Legal svc (5411)</td>
<td>5</td>
<td>3540</td>
<td>Oil/gas extraction (2111)</td>
<td>5</td>
<td>4359</td>
</tr>
<tr>
<td>Architects/engineer svc (5413)</td>
<td>6</td>
<td>2880</td>
<td>Offices of physicians (6211)</td>
<td>6</td>
<td>4266</td>
</tr>
<tr>
<td>Restaurants (7225)</td>
<td>7</td>
<td>2850</td>
<td>Durable goods whlsl (4239)</td>
<td>7</td>
<td>4244</td>
</tr>
<tr>
<td>Building equip cntrctr (2382)</td>
<td>8</td>
<td>2780</td>
<td>Mmt/tech consult svc (5416)</td>
<td>8</td>
<td>3889</td>
</tr>
<tr>
<td>Computer sys design svc (5415)</td>
<td>9</td>
<td>2680</td>
<td>Computer sys design svc (5415)</td>
<td>9</td>
<td>3861</td>
</tr>
<tr>
<td>Insurance agencies/brokers (5242)</td>
<td>10</td>
<td>2680</td>
<td>Othr heavy constr (2379)</td>
<td>10</td>
<td>3835</td>
</tr>
<tr>
<td>Mgmt/tech consult svc (5416)</td>
<td>11</td>
<td>2230</td>
<td>Othr spclty trade cntrctr (2389)</td>
<td>11</td>
<td>3815</td>
</tr>
<tr>
<td>Offices of health practit (6213)</td>
<td>12</td>
<td>1960</td>
<td>Othr fabric metal mfg. (3329)</td>
<td>12</td>
<td>3695</td>
</tr>
<tr>
<td>Nonres building constr (2362)</td>
<td>13</td>
<td>1920</td>
<td>Othr miscellaneous mfg. (3399)</td>
<td>13</td>
<td>3684</td>
</tr>
<tr>
<td>Durable goods whlsl (4239)</td>
<td>14</td>
<td>1720</td>
<td>Nondrbl gds whlsl (4249)</td>
<td>14</td>
<td>3240</td>
</tr>
<tr>
<td>Othr fabric metal mfg. (3329)</td>
<td>15</td>
<td>1680</td>
<td>Legal svc (5411)</td>
<td>15</td>
<td>3048</td>
</tr>
</tbody>
</table>

**Top S-corporations are diverse and skill-intensive**

- Representatives from all sectors, also geographically diverse
- Not just finance, technology, physical capital
Industry correlates: Top 0.1% profits

- Skill Share of Workers
- Top 0.1% Average Wages
- Officer Share of Wages
- Share Using a Computer
- Concentration
- Top 0.1% Workers per Firm
- Capital per Worker
- R&D
- Advertising
- International Profits

Correlation

S-corp Industry Correlates, Overall  C-corp Industry Correlates, Overall
4. Model of Business Income
5. Impact of Owner Deaths
Estimating impact of owner death on firm outcomes

- 5,220 top 1% owners died before 65 in $t \in [2005, 2014]$
- Match each owner-death firm $j$ to counterfactual firm $j'$: same industry, $t - 1$ sales, and year with owner of same age and same $t - 1$ income
- Estimate the average difference in outcomes $\Delta Y_{jt} \equiv Y_{jt} - Y'_{jt}$ relative to the year before the owner death

$$\Delta Y_{jt} = \sum_{k \in \{-4, -3, -2, 0, 1, 2, 3, 4\}} \beta_k D_{jt}^k + \varepsilon_{jt}$$

where

- $D_{jt}^k$ is an indicator for firm pair $j$ having experienced an owner death $k$ periods earlier
Owner death → large declines in survival and profitability

A. Impact on Firm Survival

B. Impact on Profits per Pre-period Worker

- Intensive Margin
6. High and Rising Firm Profitability
Top-owned firms generate superior profitability

2014 profits per worker and owner income rank. Thousands of 2014 USD.
Superior profitability is persistent and systematic
2001-2010 startups. Thousands of 2014 USD.
Rising profitability at top-owned firms

Main sample. Statistics in thousands of 2014 USD.
Not Rising Scale
Main sample.

![Graph showing the difference in workers per firm between No Top Owner, Top 1-0.1% Owner, and Top 0.1% Owner from 2001 to 2014. The graph indicates a decreasing trend in workers per firm for all three categories, with the largest difference observed in 2001 and the smallest in 2014. The difference in 2001 is 125.28 workers per firm, while in 2014 it is 120.27 workers per firm.](image-url)
Rising Profitability → 85% of Top Profit Growth

\[
\frac{\pi_t}{\pi_{01}} = \frac{\pi_t / L_t}{\pi_{01} / L_{01}} \times \frac{L_t / Owners_t}{L_{01} / Owners_{01}} \times \frac{Owners_t / Firms_t}{Owners_{01} / Firms_{01}} \times \frac{Firms_t}{Firms_{01}}
\]

Decomposition of Top 0.1% Profit Growth

- Share of Activity at Large Firms is not Increasing
Not High and Rising Risk
Main sample.
7. Tax incentives, business income growth, and implications for labor share and tax policy
Q: how much of business income rise is due to corp form changes?

Two Approaches:

1. Find all C → S switchers, ignore their profits in aggregates
2. Assume sales remains a constant share of total business sales

Answer: ≈ 25-30% is from corp form changes, 75-70% is real
Q: What would labor share be if all corporations were C-corps?

- Rise of S-corporations
- Tax incentives to report income as profits when an S-corp

Steps:

1. Use C → S switchers to estimate change in labor compensation relative to sales
2. Multiply estimate by aggregate S-corporation sales
3. Compute counterfactual labor share by adding result from #2 to numerator of labor share
Impact of C-to-S Switch on Labor Payments and Profits

A. All Switchers

![Graph showing the impact of C-to-S switch on labor payments and profits. The graph plots the outcome relative to sales over the years since the switch. The x-axis represents the years since the switch, ranging from -4 to 4. The y-axis represents the outcome relative to sales, ranging from -1 to 1. The graph shows two lines: one for labor compensation and one for profits. The labor compensation line starts high and decreases, while the profits line starts low and increases.](image-url)
Impact of C-to-S Switch on Labor Payments and Profits

B. Physician and Dentist Switchers

![Graph showing the impact of C-to-S switch on labor compensation and profits over years since switch. The graph includes a linear scale for years since switch ranging from -4 to 4 and a linear scale for outcome relative to sales ranging from -1 to 1. Two lines are plotted: one for labor compensation (Δ) and one for profits (○). The labor compensation line shows a steady decrease from years -4 to 0, followed by a sharp increase after year 0. The profits line shows a steady decrease from years -4 to 0, with a slight increase after year 0.]

26 / 28
Labor Share Decline Is Overstated by Nearly 20%
Most capitalists in the 21st century are working rich

Private biz owners who actively manage their firms are key

1. Private biz income → most of rise in observed top incomes
2. Most top earners own a private business
   • Mid-market, unconcentrated, and skill-intensive
3. Premature owner death → substantial decline in firm profits
4. High and rising profitability → 85% of growth

Implications:

1. U.S. labor share is understated (likely more so every year)
2. Wages likely understate top returns to schooling/skill
3. Dispersion in profitability → top inequality through owners
4. Return heterogeneity → top wealth estimates likely overstated
5. Tax code features horizontal inequity + regressivity at top
6. Responses to “capital” tax reflect mix of $K$ and $L$ elasticities
Thanks!