Inequality & Capitalism in the Long Run

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Will $21^\text{C}$ Capitalism be as Unequal as $19^\text{C}$ Capitalism?

- Long run distributional trends = key question asked by $19^\text{C}$ economists
- Many came with apocalyptic answers
- Ricardo-Marx: a small group in society (land owners or capitalists) will capture an ever growing share of income & wealth; no balanced development path can occur
- During $20^\text{C}$, a more optimistic consensus emerged: “growth is a rising tide that lifts all boats” (Kuznets 1953; cold war context)
• But inequality ↑ since 1970s destroyed this fragile consensus (US 1976-2007: >50% of total growth was absorbed by top 1%)
→ 19C economists raised the right questions; we need to adress these questions again; we have no strong reason to believe in balanced development path
• 2007-2010 crisis also raised doubts about balanced devt path… will stock options & bonuses, or oil-rich countries & China, or tax havens, absorb an ever growing share of world ressources in 21C capitalism?
This talk: two issues

• 1. The rise of the working rich  
   (based upon Atkinson-Piketty-Saez, « Top Incomes in the Long Run of History », JEL 2011)

• 2. The return of inheritance  
1. The Rise of the Working Rich

- Top income project: 23 countries, annual series over most of 20C. **Two main findings:**
  - **The fall of rentiers:** inequality ↓ during first half of 20C = top capital incomes hit by 1914-1945 capital shocks; never fully recovered, possibly because of progressive taxation → no long run decline of earnings inequality; nothing to do with a Kuznets-type process
  - **The rise of working rich:** inequality ↑ since 1970s; mostly due to top labor incomes → what happened?
TOP INCOMES OVER THE 20TH CENTURY

A Contrast Between Continental European and English-Speaking Countries

Edited by A. B. Atkinson & T. Piketty
FIGURE 1
The Top Decile Income Share in the United States, 1917-2007

Income is defined as market income including realized capital gains (excludes government transfers).
FIGURE 2
Decomposing the Top Decile US Income Share into 3 Groups, 1913-2007
<table>
<thead>
<tr>
<th>Period</th>
<th>Average Income Real Annual Growth</th>
<th>Top 1% Incomes Real Annual Growth</th>
<th>Bottom 99% Incomes Real Annual Growth</th>
<th>Fraction of total growth captured by top 1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976-2007</td>
<td>1.2%</td>
<td>4.4%</td>
<td>0.6%</td>
<td>58%</td>
</tr>
<tr>
<td>Clinton Expansion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1993-2000</td>
<td>4.0%</td>
<td>10.3%</td>
<td>2.7%</td>
<td>45%</td>
</tr>
<tr>
<td>Bush Expansion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002-2007</td>
<td>3.0%</td>
<td>10.1%</td>
<td>1.3%</td>
<td>65%</td>
</tr>
</tbody>
</table>

Computations based on family market income including realized capital gains (before individual taxes). Incomes are deflated using the Consumer Price Index (and using the CPI-U-RS before 1992). Column (4) reports the fraction of total real family income growth captured by the top 1%. For example, from 2002 to 2007, average real family incomes grew by 3.0% annually but 65% of that growth accrued to the top 1% while only 35% of that growth accrued to the bottom 99% of US families. Source: Piketty and Saez (2003), series updated to 2007 in August 2009 using final IRS tax statistics.
Figure 7A. Top 1% share: English Speaking countries (U-shaped), 1910-2005
Why are US working rich so rich?

• Hard to account for observed variations with a pure technological, marginal-product story

• One popular view: US today = working rich get their marginal product (globalization, superstars); Europe today (& US 1970s) = market prices for high skills are distorted downwards (social norms, etc.)

→ very naïve view of the top labor market…

& very ideological: we have zero evidence on the marginal product of top executives; it could well be that prices are distorted upwards…
• Another view: grabbing hand model = marginal products are unobservable; top executives have an obvious incentive to convince shareholders & subordinates that they are worth a lot; no market convergence because constantly changing corporate & job structure (& costs of experimentation)

→ when pay setters set their own pay, there’s no limit to rent extraction... unless confiscatory tax rates at the very top

(memo: US top rate (1m$+) 1932-1980 = 82%)
(no more fringe benefits than today)
• A more consensual view: the truth must be somewhere in between these two views; we know very little; top labor market institutions & pay setting processes are important and ought to attract more research; be careful with low quality survey data (with bad coverage of the top)
2. The return of inheritance

- **Distributional issue**: wealth inequality $\downarrow$ during 20$^{th}$ century but not that much (see table)

- **Macro issue**: aggregate inheritance flow vs aggregate labor income

→ this is the issue explored in « On the Long Run Evolution of Inheritance – France 1820-2050 », WP PSE 2010, forth. QJE 2011
<table>
<thead>
<tr>
<th>Shares in aggregate labor income or inherited wealth</th>
<th>Labor income 1910-2010</th>
<th>Inherited wealth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 10% &quot;Upper Class&quot;</td>
<td>30%</td>
<td>1910</td>
</tr>
<tr>
<td>incl. Top 1% &quot;Very Rich&quot;</td>
<td>6%</td>
<td>90%</td>
</tr>
<tr>
<td>incl. Other 9% &quot;Rich&quot;</td>
<td>24%</td>
<td>50%</td>
</tr>
<tr>
<td>Middle 40% &quot;Middle Class&quot;</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>Bottom 50% &quot;Poor&quot;</td>
<td>30%</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2010</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35%</td>
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<tr>
<td></td>
<td></td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5%</td>
</tr>
</tbody>
</table>
Figure 1: Annual inheritance flow as a fraction of national income, France 1820-2008

- Economic flow (computed from national wealth estimates, mortality tables and observed age-wealth profiles)
- Fiscal flow (computed from observed bequest and gift tax data, inc. tax exempt assets)
What this paper does

• Documents this fact; develops a simple theoretical model explaining & reproducing this fact

• **Main lesson**: with $r>g$, inheritance is bound to dominate new wealth; the past eats up the future

• **Intuition**: with $r>g$ & $g$ low (say $r=4\%-5\%$ vs $g=1\%-2\%$), wealth coming from the past is being capitalized faster than growth; heirs just need to save a fraction $g/r$ of the return to inherited wealth $\rightarrow b_y=\beta/H$

  $\rightarrow$ with $\beta=600\%$ & $H=30$, then $b_y=20\%$

• It is only in countries & time periods with $g$ exceptionally high that self-made wealth dominates inherited wealth
Figure 9: Observed vs simulated inheritance flow B/Y, France 1820-2100

- Observed series
- Simulated series (2010-2100: g=1.7%, (1-t)r=3.0%)
- Simulated series (2010-2100: g=1.0%, (1-t)r=5.0%)
Back to distributional analysis

- For cohorts born in the 1910s-1950s, inheritance did not matter too much
  → labor-based, meritocratic society
- But for cohorts born in the 1970s & after, inheritance matters a lot → 21\(^c\) closer to 19\(^c\) rentier society than to 20\(^c\) merit society
- The rise of human capital & meritocracy was an illusion .. especially with a labor-based tax system
Figure 13: The share of inheritance in lifetime resources received by cohorts born in 1820-2020

- ■ average inheritance as a fraction of average lifetime labor income resources
  (all inheritance and labor resources capitalized at age 50)
- ▲ low-growth, high-return scenario
Figure 16: Top 1% successors vs top 1% labor income earners (cohorts born in 1820-2020)

- top 1% inheritance as a fraction of bottom 50% labor resources
- top 1% labor as a fraction of bottom 50% labor resources
- low-growth, high-return scenario
Policy implications

• A world with $g$ low & $r > g$ is gloomy for workers with zero inherited wealth

… especially if global tax competition drives capital taxes to 0%

… especially if top labor incomes take a rising share of aggregate labor income

→ let’s unite to tax capital & top labor; otherwise the future looks gloom… even with efficient markets (≠ post-Keynesian approaches?)
• Of course there are many reasons why inequality might be bad for growth: financial fragility, credit constraints, aggregate demand, etc.
• But even with efficient markets & optimal growth, we have \( r > g = \text{the true evil law of capitalism} \)
• The important point about capitalism is that \( r \) is large (\( r > g \rightarrow \text{tax capital, otherwise society is dominated by rentiers} \)), volatile and unpredictable (crisis)
• Efficient markets won’t solve that, quite the contrary: the more efficient the markets, the sharper the capital vs labor distinction; with highly developed k markets, any dull successor can get a high return (see paper with Postel-Vinay-Rosenthal on « rentier society » equilibrium in Paris 1872-1937)
• Maybe my approach is more Marxist than post-Keyn’...
Supplementary slides
Figure 17: Cohort fraction inheriting more than bottom 50% lifetime labor resources (cohorts born in 1820-2020)

- benchmark scenario
- low-growth, high-return scenario
Computing inheritance flows: simple macro arithmetic

\[ \frac{B_t}{Y_t} = \mu_t \cdot m_t \cdot \frac{W_t}{Y_t} \]

- \( \frac{W_t}{Y_t} \) = aggregate wealth/income ratio
- \( m_t \) = aggregate mortality rate
- \( \mu_t \) = ratio between average wealth of decedents and average wealth of the living (= age-wealth profile)

→ The U-shaped pattern of inheritance is the product of three U-shaped effects
Figure 2: Wealth-income ratio in France 1820-2008

- Aggregate private wealth as a fraction of national income
<table>
<thead>
<tr>
<th>Period</th>
<th>Real growth rate of national income (g)</th>
<th>Real growth rate of private wealth (g_w)</th>
<th>Savings-induced wealth growth rate (g_ws = s/β)</th>
<th>Capital-gains-induced wealth growth rate (q)</th>
<th>Memo: Consumer price inflation (p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1820-2009</td>
<td>1.8%</td>
<td>1.8%</td>
<td>2.1%</td>
<td>-0.3%</td>
<td>4.4%</td>
</tr>
<tr>
<td>1820-1913</td>
<td>1.0%</td>
<td>1.3%</td>
<td>1.4%</td>
<td>-0.1%</td>
<td>0.5%</td>
</tr>
<tr>
<td>1913-2009</td>
<td>2.6%</td>
<td>2.4%</td>
<td>2.9%</td>
<td>-0.4%</td>
<td>8.3%</td>
</tr>
<tr>
<td>1913-1949</td>
<td>1.3%</td>
<td>-1.7%</td>
<td>0.9%</td>
<td>-2.6%</td>
<td>13.9%</td>
</tr>
<tr>
<td>1949-1979</td>
<td>5.2%</td>
<td>6.2%</td>
<td>5.4%</td>
<td>0.8%</td>
<td>6.4%</td>
</tr>
<tr>
<td>1979-2009</td>
<td>1.7%</td>
<td>3.8%</td>
<td>2.8%</td>
<td>1.0%</td>
<td>3.6%</td>
</tr>
</tbody>
</table>
Figure 3: Mortality rate in France, 1820-2100

- Adult mortality rate (20-yr-old & over)
Figure 4: The ratio between average wealth of decedents and average wealth of the living France 1820-2008

- $\mu$ (excluding inter-vivos gifts)
- $\mu^*$ (including inter-vivos gifts)
Figure 5: Inheritance flow vs mortality rate in France, 1820-2008

- □ Annual inheritance flow as a fraction of aggregate private wealth
- ■ Adult mortality rate (20-yr-old & over)
Steady-state inheritance flows

- Standard models: \( r = \theta + \sigma g = \alpha g/s (>g) \)
- Everybody becomes adult at age \( A \), has one kid at age \( H \), inherits at age \( I \), and dies at age \( D \) \( \rightarrow I = D - H, \ m = 1/(D-A) \)
- Dynastic or class saving: \( \mu = (D-A)/H \)
  \( \rightarrow b_y = \mu \ m \ \beta = \beta/H \)

- **Proposition:** As \( g \rightarrow 0 \), \( b_y \rightarrow \beta/H \)
Figure 6: Steady-state cross-sectional age-wealth profile in the class savings model ($s_L=0$, $s_K>0$)

- (average wealth of age group)/(average wealth of adults)
Figure 7: Steady-state cross-sectional age-wealth profile in the class savings model with demographic noise.

- (average wealth of age group)/(average wealth of adults)
Figure 8: Private savings rate in France 1820-2008

- Private savings (personal savings + net corporate retained earnings) as a fraction of national income
Figure 10: Labor & capital shares in national income, France 1820-2008

- Labor share
- Capital share
Figure 11: Rate of return vs growth rate France 1820-1913

- Rate of return on private wealth $r = \alpha / \beta$
- Growth rate of national income $g$
Figure 12: Capital share vs savings rate France 1820-1913

- Capital share $\alpha$
- Savings rate $s$
Figure 18: The share of non-capitalized inheritance in aggregate wealth accumulation, France 1850-2100

- non-capitalized inherited wealth as a fraction of aggregate private wealth
- ▲ low-growth, high-return scenario
Figure 19: The share of capitalized inheritance in aggregate wealth accumulation, France 1900-2100

- ♦ capitalized inherited wealth as a fraction of aggregate private wealth
- ▲ low-growth, high-return scenario
<table>
<thead>
<tr>
<th>Period</th>
<th>Growth rate of national income</th>
<th>Rate of return on private wealth</th>
<th>Capital tax rate</th>
<th>After-tax rate of return</th>
<th>Real rate of capital gains</th>
<th>Rate of capital destruct. (wars)</th>
<th>After-tax real rate of return (incl. k gains &amp; losses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1820-2009</td>
<td>1.8%</td>
<td>6.8%</td>
<td>19%</td>
<td>5.4%</td>
<td>-0.1%</td>
<td>-0.3%</td>
<td>5.0%</td>
</tr>
<tr>
<td>1820-1913</td>
<td>1.0%</td>
<td>5.9%</td>
<td>8%</td>
<td>5.4%</td>
<td>-0.1%</td>
<td>0.0%</td>
<td>5.3%</td>
</tr>
<tr>
<td>1913-2009</td>
<td>2.6%</td>
<td>7.8%</td>
<td>31%</td>
<td>5.4%</td>
<td>-0.1%</td>
<td>-0.7%</td>
<td>4.6%</td>
</tr>
<tr>
<td>1913-1949</td>
<td>1.3%</td>
<td>7.9%</td>
<td>21%</td>
<td>6.4%</td>
<td>-2.6%</td>
<td>-2.0%</td>
<td>1.8%</td>
</tr>
<tr>
<td>1949-1979</td>
<td>5.2%</td>
<td>9.0%</td>
<td>34%</td>
<td>6.0%</td>
<td>0.8%</td>
<td>0.0%</td>
<td>6.8%</td>
</tr>
<tr>
<td>1979-2009</td>
<td>1.7%</td>
<td>6.9%</td>
<td>39%</td>
<td>4.3%</td>
<td>1.0%</td>
<td>0.0%</td>
<td>5.3%</td>
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