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 address 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, or China, or tax havens, absorb an ever growing share of world resources in 21C capitalism?
This talk: three issues

• 1. The rise of the working rich

• 2. The return of inheritance
   (Piketty, « On the Long Run Evolution of Inheritance – France 1820-2050 », QJE 2011) (r > g)
   (r = rate of return to wealth, g = growth rate)

• 3. The future of global inequality
1. The Rise of the Working Rich

- **Top income project**: 23 countries, annual series over most of 20th century, largest historical data set available
- **Two main findings**:
  - **The fall of rentiers**: inequality ↓ during first half of 20th century = top capital incomes hit by 1914-1945 capital shocks; did not fully recover so far (long lasting shock + progressive taxation)
    → without war-induced economic & political shock, there would have been no long run decline of inequality; nothing to do with a Kuznets-type process
  - **The rise of working rich**: inequality ↑ since 1970s; mostly due to top labor incomes; but top wealth & capital incomes also recovering, though less fast
    → what happened?
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 (1)</th>
<th>Top 1% Incomes Real Annual Growth (2)</th>
<th>Bottom 99% Incomes Real Annual Growth (3)</th>
<th>Fraction of total growth captured by top 1% (4)</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>4.0%</td>
<td>10.3%</td>
<td>2.7%</td>
<td>45%</td>
</tr>
<tr>
<td>1993-2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bush Expansion</td>
<td>3.0%</td>
<td>10.1%</td>
<td>1.3%</td>
<td>65%</td>
</tr>
<tr>
<td>2002-2007</td>
<td></td>
<td></td>
<td></td>
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</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.
Figure 7A. Top 1% share: English Speaking countries (U-shaped), 1910-2005
Figure 7B. Top 1% Share: Middle Europe and Japan (L-shaped), 1900-2005

Graph showing the top percentile share of France, Germany, Netherlands, Switzerland, and Japan from 1900 to 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 end labor market…

& very ideological: we have zero evidence on the marginal product of top executives; it could well be that prices are distorted upwards…
• A more realistic 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 tax rate (1m$+) 1932-1980 = 82%)
(no more fringe benefits than today)
2. The return of inheritance

• **Distributional issue**: wealth inequality ↓ during 20^{C}. but not that much: in 2010, top 10% wealth share ≈ 70-75\%(US), ≈ 60-65\% (EU), vs ≈ 80-90\% around 1900 & in 19^{C}

→ the rise of the middle class was quantitatively limited, but politically essential, especially given macro decline of wealth

• **Macro issue**: aggregate inheritance flow vs aggregate labor income: much larger historical variations; huge decline of inheritance between 1900-1910 and 1950-1960

→ long lasting « human K » illusion

→ this is the issue explored in « On the Long Run Evolution of Inheritance – France 1820-2050 », QJE 2011
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)
• This paper documents this fact and develops a simple theoretical model explaining the observed U-shaped curve

• **Main lesson:** with $r > g$, inheritance is bound to dominate new wealth; the past eats up the future
  Note: $r = \text{rate of return to capital} = (\text{net profits} + \text{rents})/(\text{net financial} + \text{real estate wealth})$ ; $g = \text{growth rate} (g+n)$

• **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 → $b_y = \beta/H$ (with $\beta = W/Y$)
  → 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 (OECD in 1950s-70s or China today)
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: macro ratios determine who is the dominant social class

• 19\textsuperscript{c}: top successors dominate top labor earners
  → rentier society (Balzac, Jane Austen, etc.)
• For cohorts born in 1910s-1950s, inheritance did not matter too much → labor-based, meritocratic society
• But for cohorts born in the 1970s-1980s & after, inheritance matters a lot
  → 21\textsuperscript{c} class structure will be intermediate between 19\textsuperscript{c} rentier society than to 20\textsuperscript{c} meritocratic society – and possibly closer to the former
• The rise of human capital & meritocracy was an illusion .. especially with a labor-based tax system
The meritocratic illusion

Democracies rely on meritocratic values: in order to reconcile the principle of political equality with observed socio-economic inequalities, they need to justify inequality by merit and/or common utility

- But effective meritocracy does not come naturally; it requires specific policies & institutions
- Two (quasi-)illusions: (1) human K didn’t replace financial K (2) war of ages didn’t replace war of classes
- (1) Technocratic model: Parsons, Galbraith, Becker
  (unidimensional class structure based upon human K)
- But no long run decline of capital share in national income
- (2) Lifecycle wealth model: Modigliani
- But no long run decline of inherited share in national wealth
3. The future of global inequality

- **Around 1900-1910**: Europe owned the rest of the world; net foreign wealth of UK or France >100% of their national income (>50% of the rest-of-the-world capital stock)
- **Around 2050**: will the same process happen again, but with China instead of Europe?

- **Bottom line**: international inequalities even less meritocratic than domestic inequalities; e.g. oil price level has nothing to do with merit; the fact that Greece pays interest rate r=10% on its public debt has nothing to do with merit; the price system has nothing to do with merit…
• Assume global convergence in per capita output $Y$ & in capital intensity $K/Y$
• With large differences in population & fully integrated $K$ markets & high world rate of return $r$ (low $K$ taxes)
Then moderate differences in savings rate (say, $s=20\%$ in China vs $s=10\%$ in Europe+US, due to bigger pay-as-you-go pensions in Old World, traumatized by past financial crashes)
can generate very large net foreign asset positions
→ under these assumptions, China might own a large part of the world by 2050
• Likely policy response in the West: K controls, public ownership of domestic firms, etc.

• **But this is not the most likely scenario:** a more plausible scenario is that global billionaires (located in all countries… and particularly in tax havens) will own a rising share of global wealth

• A lot depends on the net-of-tax global rate of return $r$ on large diversified portfolios

• If $r=5\%-6\%$ in 2010-2050 (=what we observe in 1980-2010 for large Forbes fortunes, or Abu Dhabi sovereign fund, or Harvard endowment), then global divergence is very likely
• Both scenarios can happen

• But the « global billionaires own the world » scenario is more likely than the « China own the world » scenario

• And it is also a lot harder to cope with: we’ll need a lot of international policy coordination; without a global crackdown on tax havens & a coordinated world wealth tax on the global rich, individual countries & regions will keep competing to attract billionaires, thereby exacerbating the trend

→ Free, untaxed world K markets can easily lead to major imbalances & global disasters
What have we learned?

• 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…

• A world with $g = 1-2\%$ (=long-run world technological frontier) is not very different from a world with $g = 0\%$ (Marx-Ricardo)

• From a $r$-vs-$g$ viewpoint, $21^c$ maybe not too different from $19^c$ – but still better than Ancien Regime… except that nobody tried to depict AR as meritocratic…
• More efficient markets won’t help…
• The more efficient the markets, the sharper the capital vs labor distinction; with highly developed markets, any dull successor can get a high rate of return

• \( r > g = \text{the true evil law of capitalism} \)
  = nothing to do with market imperfections
• Standard model: \( r = \delta + \sigma g > g \) (Golden rule)
• The important point about capitalism is that \( r \) is large (\( r > g \) → tax capital, otherwise society is dominated by rentiers), volatile and unpredictable (crisis)
Supplementary slides
Table 3: Intra-cohort distributions of labor income and inheritance, France, 1910 vs 2010

<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>
</tbody>
</table>

1910 | 2010 |
---|------|
90% | 60%  |
50% | 25%  |
40% | 35%  |
5%  | 35%  |
5%  | 5%   |
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 17: Cohort fraction inheriting more than bottom 50% lifetime labor resources (cohorts born in 1820-2020)

- ■ benchmark scenario
- ▲ 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
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></th>
<th>Real growth rate of national income</th>
<th>Real growth rate of private wealth</th>
<th>Savings-induced wealth growth rate</th>
<th>Capital-gains-induced wealth growth rate</th>
<th>Memo: Consumer price inflation</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

- μ (excluding inter-vivos gifts)
- μ* (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
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>
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<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>
</tr>
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