Lessons for the Green New Deal from the Economic Mobilization for World War Two

Josh Mason
John Jay College - CUNY

Based on forthcoming Roosevelt Institute paper coauthored with Andrew Bossie
Overview

Some lessons from war mobilization:

1. Public sector needs to take direct role in investment
   - ...and more broadly in bearing risk

2. Output can be very elastic in response to stronger demand
   - Danger of over-conservative estimates of potential
   - Labor supply also elastic in response to demand

3. Full employment has major effects on income distribution
   - ... even in absence of explicit redistribution
## Public investment in war industries

Public investment and share publicly owned at end of war

<table>
<thead>
<tr>
<th>Industry</th>
<th>Federal investment ($ billions)</th>
<th>% publicly owned, 1944-1945</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enriched uranium and plutonium</td>
<td>1.38</td>
<td>100</td>
</tr>
<tr>
<td>Shell and bomb loading</td>
<td>1.25</td>
<td>100</td>
</tr>
<tr>
<td>Synthetic rubber</td>
<td>0.70</td>
<td>97</td>
</tr>
<tr>
<td>Aircraft</td>
<td>3.43</td>
<td>89</td>
</tr>
<tr>
<td>Ships</td>
<td>2.19</td>
<td>87</td>
</tr>
<tr>
<td>Guns and ammunition</td>
<td>1.60</td>
<td>87</td>
</tr>
<tr>
<td>Nonferrous metals (aluminum, etc.)</td>
<td>1.72</td>
<td>58</td>
</tr>
<tr>
<td>Chemicals and explosives</td>
<td>2.26</td>
<td>43</td>
</tr>
<tr>
<td>Aviation fuel</td>
<td>0.25</td>
<td>33</td>
</tr>
<tr>
<td>Machine tools</td>
<td>0.15</td>
<td>26</td>
</tr>
<tr>
<td>Iron and steel</td>
<td>1.2</td>
<td>14</td>
</tr>
</tbody>
</table>

Source: Mark Wilson, *Destructive Creation*
Why so much direct public investment?

- Not desired by policymakers
  - Turn to direct federal investment only after measures to encourage private investment failed
- Not lack of financial capacity in private sector
- Private sector unwilling/unable to bear risk
- ... especially in newer industries
Lessons for Green New Deal

1. Decarbonization may call for large direct investment by public sector
   ▶ as opposed to shifting private investment via prices/subsidies

2. Public role largest in new industries/technologies
3. Public role not just to provide resources, but to solve coordination problems and to bear risk
Second lesson: Capacity grows with demand

▶ At start of war, fears that military production targets could not be met without large fall in civilian living standards
  ▶ the “feasibility dispute”
▶ But in fact, military production targets largely achieved
▶ ... without any fall in civilian consumption
▶ Rapid output growth thanks to expansion of labor force
▶ ... and rapid productivity gains, esp. in industries with greatest military demand
▶ Wartime inflation more about specific bottlenecks than overall capacity constraints

As largest positive demand shock in history, WWII is informative about supply constraints!
Surprisingly little crowding out during war

Military and civilian output, 1938-1947

Source: Rockoff 1998
... thanks in part to rapid growth in labor force

<table>
<thead>
<tr>
<th>Category</th>
<th>1941</th>
<th>1944</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Nonagricultural Employed</td>
<td>42,800</td>
<td>56,600</td>
<td>13,800</td>
</tr>
<tr>
<td>War Manufacturing</td>
<td>6,571</td>
<td>8,301</td>
<td>1,730</td>
</tr>
<tr>
<td>Nonwar manufacturing</td>
<td>4,950</td>
<td>5,826</td>
<td>876</td>
</tr>
<tr>
<td>Government</td>
<td>6,222</td>
<td>17,426</td>
<td>11,204</td>
</tr>
<tr>
<td>Civilian</td>
<td>4,622</td>
<td>6,026</td>
<td>1,404</td>
</tr>
<tr>
<td>Military</td>
<td>1,600</td>
<td>11,400</td>
<td>9,800</td>
</tr>
<tr>
<td>Total Wartime Uses of Labor</td>
<td></td>
<td></td>
<td>13,810</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>1941</th>
<th>1944</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployed</td>
<td>5,560</td>
<td>670</td>
<td>-4,890</td>
</tr>
<tr>
<td>Extra Workers (April 1945)</td>
<td>8,130</td>
<td>0</td>
<td>-8,130</td>
</tr>
<tr>
<td>Women</td>
<td>4,230</td>
<td>0</td>
<td>-4,230</td>
</tr>
<tr>
<td>Men</td>
<td>3,900</td>
<td>0</td>
<td>-3,900</td>
</tr>
<tr>
<td>Farm Workers (1940 and 1945)</td>
<td>10,585</td>
<td>9,844</td>
<td>-741</td>
</tr>
<tr>
<td>Total Wartime Sources of Labor</td>
<td></td>
<td></td>
<td>-13,761</td>
</tr>
</tbody>
</table>
Wartime experience of supply constraints

- Supply much more elastic than was expected
- Inflation reflected specific bottlenecks/shortages, not overall capacity constraints
  - effectively managed with rationing and price controls
  - rationing reflected rapidly rising civilian incomes, not falling civilian consumption
- New entrants to labor force not mainly drawn from unemployed or agriculture
- Productivity gains fastest in industries with greatest military spending
  - Labor productivity in aircraft production rises by factor of 7 over 1942-1945
  - Supports strong version of Verdoorn’s law
1. Output may rise to meet new demand from decarbonization
   ▶ Good reasons to think there is substantial slack in major economies
   ▶ Should not analyze economics of climate change on basis of fixed total output
2. Labor force growth responsive to demand conditions
3. Rising inflation does not necessarily mean capacity constraints reached
4. Decarbonization spending likely to see increasing returns
   ▶ Implies lower costs than static estimate
   ▶ Another argument for targeted public investment, against carbon price based approach
      ▶ carbon price v. inefficient for moving new technologies down cost curve
Third lesson: Full employment is powerful force for redistribution

- 1940s saw the largest compression of incomes in US history
  - as in most advanced countries
- Lowest paid groups (African Americans, agricultural workers) gained most
- Very little direct redistribution - all about labor market
Income compression during WWII

- Top 10%
- Top 1%

Income share, %

Years: 1925 to 1950

Key points:
- 1941: 15.7%
- 1945: 10.5%
Income compression during WWII

1940 hourly wage by industry and 1940-1946 change
Income compression during WWII

- Wage differentials across sectors/industries narrowed substantially during war
- Biggest gains in low-wage industries not directly involved in war production
- Over 1939-1946, weekly wages:
  - in war manufacturing rose 70%, from $29 to $70
  - in textiles/apparel doubled, from $17.50 to $36
  - in agriculture nearly tripled, from $9 to $26
- No explicit policy favoring compression - wage caps based on average wages at start of war
  - so inter-industry wage gaps narrowed despite policy to maintain them
Black workers made biggest gains

Median Black Earnings as % of Median White Earnings, Men 25-54
... but only thanks to overall wage compression

Percentage-point change in median wage gap

- Anti-discrimination policy during the war largely toothless
Limited redistribution through wartime tax increases

No effort to tax capital gains
Lessons for Green New Deal

1. A just transition important, but don’t underestimate redistributional effects of strong demand
   - WWII experience suggests that sustained super-full employment more powerful for income compression than direct redistribution
   - Strong labor markets benefit even those who aren’t employed directly

2. Full employment is most important for most disadvantaged workers

3. Goal of more equitable distribution is independent argument for big public spending program
Summary

Three lessons from wartime mobilization:

1. Rapid economic transitions require larger role for direct public investment
2. Output, employment are more elastic than conventional estimates of potential assume
3. Full employment is powerful force for income compression, even without explicit redistribution
Thank you.