Supplementary graphs \& material (not shown during lecture)

## Computing inheritance flow

$$
B_{t} / Y_{t}=\mu_{t} m_{t} W_{t} / Y_{t}
$$

- $\mathrm{W}_{\mathrm{t}} / \mathrm{Y}_{\mathrm{t}}=$ aggregate wealth/income ratio
- $\mathrm{m}_{\mathrm{t}}=$ aggregate mortality rate
- $\mu_{\mathrm{t}}=$ ratio between average wealth of decedents and average wealth of the living (= age-wealth profile)
$\rightarrow$ The U-shaped pattern of inheritance is the product of three U-shaped effects

Figure 8: The ratio between average wealth of decedents and average wealth of the living in France 1820-2008


Table 2: Raw age-wealth-at-death profiles in France, 1820-2008

20-29 30-39 $\quad 40-49 \quad 50-59 \quad 60-69 \quad 70-79 \quad 80+$

| 1827 | $50 \%$ | $63 \%$ | $73 \%$ | $100 \%$ | $113 \%$ | $114 \%$ | $122 \%$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1857 | $57 \%$ | $58 \%$ | $86 \%$ | $100 \%$ | $141 \%$ | $125 \%$ | $154 \%$ |
| 1887 | $45 \%$ | $33 \%$ | $63 \%$ | $100 \%$ | $152 \%$ | $213 \%$ | $225 \%$ |
| 1902 | $26 \%$ | $57 \%$ | $78 \%$ | $100 \%$ | $172 \%$ | $176 \%$ | $233 \%$ |
| 1912 | $23 \%$ | $54 \%$ | $74 \%$ | $100 \%$ | $158 \%$ | $176 \%$ | $237 \%$ |
| 1931 | $22 \%$ | $59 \%$ | $77 \%$ | $100 \%$ | $123 \%$ | $137 \%$ | $143 \%$ |
| 1947 | $23 \%$ | $52 \%$ | $77 \%$ | $100 \%$ | $99 \%$ | $76 \%$ | $62 \%$ |
| 1960 | $28 \%$ | $52 \%$ | $74 \%$ | $100 \%$ | $110 \%$ | $101 \%$ | $87 \%$ |
| 1984 | $19 \%$ | $55 \%$ | $83 \%$ | $100 \%$ | $118 \%$ | $113 \%$ | $105 \%$ |
| 2000 | $19 \%$ | $46 \%$ | $66 \%$ | $100 \%$ | $122 \%$ | $121 \%$ | $118 \%$ |
| 2006 | $25 \%$ | $42 \%$ | $74 \%$ | $100 \%$ | $111 \%$ | $106 \%$ | $134 \%$ |

Figure 13: Labor \& capital shares in (factor-price) national income, France 1820-2008


Figure 11: Private savings rate in France 1820-2008

$\begin{array}{llllllllll}1820 & 1840 & 1860 & 1880 & 1900 & 1920 & 1940 & 1960 & 1980 & 2000\end{array}$

Figure 12: Observed vs simulated inheritance flow, France 1820-2050


Figure 14: Rate of return vs growth rate France 1820-1910


Figure 15: Capital share vs savings rate France 1820-1910


Figure 16: The share of inheritance in lifetime ressources received by cohorts 1850-2000
$40 \%$
$36 \%$
$32 \%$
$28 \%$
$24 \%$
$20 \%$
$16 \%$
$12 \%$
$8 \%$
$4 \%$
$0 \%$

1890
1910
1930
1950
1970
1990

# Application to the share of inheritance in total wealth 

- Modigliani AER 1986, JEP 1988: inheritance = 20\% of total U.S. wealth
- Kotlikoff-Summers JPE 1981, JEP 1988: inheritance $=80 \%$ of total U.S. wealth
- Three problems: - Bad data
- We do not live in a stationary world: lifecycle wealth was much more important in the 1950s-1970s than it is today
- We do not live in a representative-agent world $\rightarrow$ new definition of inheritance share

Figure 20: The share of inheritance in aggregate wealth accumulation, France 1900-2050


Table 1: Accumulation of private wealth in France, 1820-2009

|  | Real <br> growth rate <br> of national <br> income | Real <br> growth rate <br> of private <br> wealth | Savings- <br> induced <br> wealth <br> growth rate | Capital- <br> gains- <br> induced <br> wealth <br> growth rate | Memo: <br> Consumer <br> price <br> inflation |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | g | $\mathrm{g}_{\mathrm{w}}$ | $\mathrm{g}_{\mathrm{ws}}=\mathrm{s} / \beta$ | q | q |

Figure 5:Wealth/disposable income ratio France 18202008


Figure 6: Mortality rate in France, 1820-2100


182018401860188019001920194019601980200020202040206020802100

Figure 7: Age of decedents \& heirs in France, 1820-2100


182018401860188019001920194019601980200020202040206020802100

Figure A1: Annual inheritance flow as a fraction of national income, France 1900-2008 (annual series)


Figure A2: Wealth-income ratio in France 1896-2009 (annual series)


Figure A3: Wealth-disposable income ratio in France 1896. 2009 (annual series)


