A Theory of Optimal Capital Taxation

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Motivation: The Failure of Capital Tax Theory

1) **Standard theory**: optimal tax rate $\tau_K=0\%$ for all forms of capital taxes (stock- or flow-based)

→ Complete suppression of inheritance tax, property tax, corporate tax, K income tax, etc. is desirable… including from the viewpoint of individuals with zero property!

2) **Practice**: EU27: tax/GDP = 39%, capital tax/GDP = 9%
   US: tax/GDP = 27%, capital tax/GDP = 8%
   (inheritance tax: <1% GDP, but high top rates)

→ Nobody seems to believe this extreme zero-tax result – which indeed relies on very strong assumptions

3) **Huge gap** between theory & practice (& common sense) on optimal k taxation is a major failure of modern economics
This Paper: Two Ingredients

In this paper we attempt to develop a realistic, tractable K tax theory based upon two key ingredients

1) Inheritance: life is not infinite, inheritance is a significant source of lifetime inequality → with 2-dimensional inequality, one needs a 2-dimensional optimal tax structure

2) Imperfect K markets: with uninsurable risk, lifetime K tax is a useful addition to inheritance tax

With no inheritance (100% life-cycle wealth or infinite life) and perfect K markets, then the case for $\tau_K=0\%$ is indeed very strong: $1+r =$ relative price of present consumption → do not tax $r$, instead use redistributive labor income taxation $\tau_L$ only (Atkinson-Stiglitz)
• **Key parameter:** $b_y = B/Y$
  = aggregate annual bequest flow $B/national income Y$

• Huge historical variations:
  $b_y = 20-25\%$ in $19^{\circ}$ & until WW1 (=very large: rentier society)
  $b_y < 5\%$ in 1950-60 (Modigliani lifecycle) (~A-S)
  $b_y$ back up to $\sim 15\%$ by 2010 → inheritance matters again

• See « On the Long-Run Evolution of Inheritance – France 1820-2050 », Piketty QJE’11

• **r$>$g story:** $g$ small & $r>>g$ → inherited wealth is capitalized faster than growth → $b_y$ high

• U-shaped pattern probably less pronounced in US

→ Optimal $\tau_B$ is increasing with $b_y$ (or $r-g$)
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)

Annual inheritance flow as a fraction of disposable 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)

Private wealth / national income ratios, 1970-2010

Authors' computations using country national accounts. Private wealth = non-financial assets + financial assets - financial liabilities (household & non-profit sectors)
Private wealth / national income ratios, 1970-2010 (incl. Spain)

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Result 1: Optimal Inheritance Tax Formula

- **Simple formula** for optimal bequest tax rate expressed in terms of estimable parameters:

\[ \tau_B = \frac{1-(1-\alpha-\tau)s_{b0}/b_y}{1+e_B+s_{b0}} \]

with: \( b_y = \) bequest flow, \( e_B = \) elasticity, \( s_{b0} = \) bequest taste

\( \rightarrow \tau_B \) increases with \( b_y \) and decreases with \( e_B \) and \( s_{b0} \)

- For realistic parameters: \( \tau_B = 50-60\% \) (or more..or less...)

\( \rightarrow \) **our theory can account for the variety of observed top bequest tax rates (30%-80%)**

\( \rightarrow \) hopefully our approach can contribute to a tax debate based more upon empirical estimates of key distributional & behavioral parameters (and less about abstract theory)
Result 2: Optimal Capital Tax Mix

- **K market imperfections** (e.g. uninsurable idiosyncratic shocks to rates of return) can justify shifting one-off inheritance taxation toward lifetime capital taxation (property tax, K income tax,..)

- **Intuition**: what matters is capitalized bequest, not raw bequest; but at the time of setting the bequest tax rate, there is a lot of uncertainty about what the rate of return is going to be during the next 30 years → so it is more efficient to split the tax burden

→ our theory can explain the actual structure & mix of inheritance vs lifetime capital taxation

(& why high top inheritance and top capital income tax rates often come together, e.g. US-UK 1930s-1980s)
Top Income Tax Rates: Earned (Labor) vs Unearned (Capital)

U.S. (earned income)
U.S. (unearned income)
U.K. (earned income)
U.K. (unearned income)
Link with previous work

1. **Atkinson-Stiglitz JPupE’76**: No capital tax in life-cycle model with homogenous tastes for savings, consumption-leisure separability and nonlinear labor income tax.

2. **Chamley EMA’86-Judd JPubE’85**: No capital tax in the long run in an infinite horizon model with homogenous discount rate (infinite elasticity).

3. **Precautionary savings**: Capital tax desirable when uncertainty about future earnings ability affect savings decisions (positive but small capital tax rate).

4. **Credit Constraints** can restore desirability of capital tax to redistribute from the unconstrained to the constrained.

5. **Time Inconsistent Governments** always want to tax existing capital → here we focus on long-run optima with full commitment (most difficult case for $\tau_K>0$).
Atkinson-Stiglitz fails with inheritances

A-S applies when sole source of lifetime income is labor:
\[ c_1 + c_2/(1+r) = \theta l - T(\theta l) \quad (\theta = \text{productivity, } l = \text{labor supply}) \]

Bequests provide an additional source of life-income:
\[ c + b(\text{left})/(1+r) = \theta l - T(\theta l) + b(\text{received}) \]

conditional on \( \theta l \), high \( b(\text{left}) \) is a signal of high \( b(\text{received}) \) [and hence low \( u_c \)] ➔ “commodity” \( b(\text{left}) \) should be taxed even with optimal \( T(\theta l) \)

two-dimensional heterogeneity requires two-dim. tax policy tool

Extreme example: no heterogeneity in productivity \( \theta \) but pure heterogeneity in bequests motives ➔ bequest taxation is desirable for redistribution

Note: bequests generate positive externality on donors and hence should be taxed less (but still >0)
Chamley-Judd fails with finite lives

C-J in the dynastic model implies that inheritance tax rate $\tau_K$ should be zero in the long-run

(1) If social welfare is measured by the discounted utility of first generation then $\tau_K=0$ because inheritance tax creates an infinitely growing distortion but…
   this is a crazy social welfare criterion that does not make sense when each period is a generation

(2) If social welfare is measured by long-run steady state utility then $\tau_K=0$ because supply elasticity $e_B$ of bequest wrt to price is infinite but…
   we want a theory where $e_B$ is a free parameter
A Good Theory of Optimal Capital Taxation

Should follow the optimal labor income tax progress and hence needs to capture key trade-offs robustly:

1) **Welfare effects:** people dislike taxes on bequests they leave, or inheritances they receive, but people also dislike labor taxes → interesting trade-off

2) **Behavioral responses:** taxes on bequests might (a) discourage wealth accumulation, (b) affect labor supply of inheritors (Carnegie effect) or donors

3) **Results should be robust** to heterogeneity in tastes and motives for bequests within the population and formulas should be expressed in terms of estimable “sufficient statistics”
Part 1: Optimal K tax with perfect markets

- Agent $i$ in cohort $t$ (1 cohort = 1 period = $H$ years, $H \approx 30$)
- Receives bequest $b_{ti} = z_i b_t$ at beginning of period $t$
- Works during period $t$
- Receives labor income $y_{Lti} = \theta_i y_{Lt}$ and capitalized bequest $b_{ti} e^{rH}$ at end of period $t$
- Consumes $c_{ti}$ & leaves bequest $b_{t+1i}$ so as to maximize:

$$\max V_i(c_{ti}, b_{t+1i}, b_{t+1i})$$

s.c. $c_{ti} + b_{t+1i} \leq (1 - \tau_B) b_{ti} e^{rH} + (1 - \tau_L) y_{Lti}$

With: $b_{t+1i} = $ end-of-life wealth (wealth loving)

$\bar{b}_{t+1i} = (1 - \tau_B) b_{t+1i} e^{rH} = $ net-of-tax capitalized bequest left (bequest loving)

$\tau_B =$ capitalized bequest tax rate, $\tau_L =$ labor income tax rate

$V_i()$ homogeneous of degree one (to allow for growth)
• **Special case: Cobb-Douglas preferences:**

\[ V_i(c_{ti},b_{t+1i},b_{t+1i}) = c_{ti}^{1-s_i} b_{t+1i}^{s_{wi}} b_{t+1i}^{s_{bi}} \] (with \( s_i = s_{wi} + s_{bi} \))

\[ \rightarrow b_{t+1i} = s_i [(1-\tau_B)z_i b_t e^{rH} + (1-\tau_L)\theta_i y_{Lt}] = s_i y_{ti} \]

• **General preferences: \( V_i() \) homogenous of degree one:**

Max \( V_i() \) → FOC \( V_{ci} = V_{wi} + (1-\tau_B)e^{rH} V_{bi} \)

All choices are linear in total life-time income \( y_{ti} \)

\[ \rightarrow b_{t+1i} = s_i y_{ti} \]

Define \( s_{bi} = s_i (1-\tau_B)e^{rH} V_{bi}/V_{ci} \)

Same as Cobb-Douglas but \( s_i \) and \( s_{bi} \) now depend on \( 1-\tau_B \)

• **Random productivities \( \theta_i \) and random tastes \( s_i \)**

• We allow for any distribution and any ergodic random process for taste shocks \( s_i \) and productivity shocks \( \theta_i \)

\[ \rightarrow \text{endogenous dynamics of the joint distribution } \Psi_t(z,\theta) \] of normalized inheritance \( z \) and productivity \( \theta \)
• **Macro side**: open economy with exogenous return $r$, domestic output $Y_t = K_t^\alpha L_t^{1-\alpha}$, with $L_t = L_0 e^{gH_t}$ and $g =$ exogenous productivity growth rate (inelastic labor supply $l_{ti} = 1$, fixed population size = 1)

• **Period by period government budget constraint**:
  \[
  \tau L Y_t L_t + \tau B_e r H_t = \tau Y_t
  \]
  i.e. \[
  \tau L (1-\alpha) + \tau B_y t = \tau
  \]
  With $\tau =$ exogenous tax revenue requirement (e.g. $\tau = 30\%$)
  
  $b_{yt} = e^{rH}B_t / Y_t =$ capitalized inheritance-output ratio

• **Government objective**:
  We take $\tau \geq 0$ as given and solve for the optimal tax mix $\tau_L, \tau_B$ maximizing steady-state SWF = $\int \omega_{z\theta} V_{z\theta} \ d\Psi(z,\theta)$
  with $\Psi(z,\theta) =$ steady-state distribution of $z$ and $\theta$
  $\omega_{z\theta} =$ social welfare weights


**Equivalence between \( \tau_B \) and \( \tau_K \)**

- In basic model, tax \( \tau_B \) on capitalized inheritance is equivalent to tax \( \tau_K \) on annual return \( r \) to capital as:

\[
b_{ti} = (1- \tau_B)b_{ti}e^{rH} = b_{ti}e^{(1-\tau_K)rH}, \text{ i.e. } \tau_K = -\log(1-\tau_B)/rH
\]

- E.g. with \( r=5\% \) and \( H=30 \), \( \tau_B=25\% \leftrightarrow \tau_K=19\% \), \( \tau_B=50\% \leftrightarrow \tau_K=46\% \), \( \tau_B=75\% \leftrightarrow \tau_K=92\% \)

- This equivalence no longer holds with (a) tax enforcement constraints, or (b) life-cycle savings, or (c) uninsurable risk in \( r=r_{ti} \)

\( \rightarrow \) Optimal mix \( \tau_B, \tau_K \) then becomes an interesting question (see below)
• **Special case**: taste and productivity shocks $s_i$ and $\theta_i$ are i.e. across and within periods (no memory)

$s = E(s_i | \theta_i, z_i)$ → simple aggregate transition equation:

$$b_{t+1i} = s_i [(1- \tau_B)z_i b_t e^{rH} + (1-\tau_L)\theta_i y_Lt]$$

$$b_{t+1} = s [(1- \tau_B)b_t e^{rH} + (1-\tau_L)y_Lt]$$

Steady-state convergence: $b_{t+1} = b_t e^{gH}$

$$b_{yt} \rightarrow b_H = \frac{s(1-\tau-h)e^{(r-g)H}}{1-se^{(r-g)H}}$$

• $b_H$ increases with $r-g$ (capitalization effect, Piketty QJE’11)

• If $r-g=3\%$, $\tau=10\%$, $H=30$, $\alpha=30\%$, $s=10\%$ → $b_H=20\%$

• If $r-g=1\%$, $\tau=30\%$, $H=30$, $\alpha=30\%$, $s=10\%$ → $b_H=6\%$
• **General case:** under adequate ergodicity assumptions for random processes $s_i$ and $\theta_i$:

**Proposition 1** (unique steady-state): for given $\tau_B, \tau_L$, then as $t \to +\infty$, $b_{yt} \to b_y$ and $\Psi(t,z,\theta) \to \Psi(z,\theta)$

• Define: $e_B = \frac{db_y}{d(1-\tau_B)} \frac{1-\tau_B}{b_y}$

• $e_B = \text{elasticity of steady-state bequest flow with respect to net-of-bequest-tax rate } 1-\tau_B$

• With $V_i() = \text{Cobb-Douglas and i.i.d. shocks, } e_B = 0$

• For general preferences and shocks, $e_B > 0$ (or $< 0$)

→ we take $e_B$ as a free parameter
• Meritocratic rawlsian optimum, i.e. social optimum from the viewpoint of zero bequest receivers (z=0):

**Proposition 2** (zero-receivers tax optimum)

\[ \tau_B = \frac{1-(1-\alpha-\tau)s_{b0}/b_y}{1+e_B+s_{b0}} \]

with: \( s_{b0} = \text{average bequest taste of zero receivers} \)

• \( \tau_B \) increases with \( b_y \) and decreases with \( e_B \) and \( s_{b0} \)
• If bequest taste \( s_{b0}=0 \), then \( \tau_B = 1/(1+e_B) \) → standard revenue-maximizing formula
• If \( e_B \to +\infty \), then \( \tau_B \to 0 \) : back to Chamley-Judd
• If \( e_B = 0 \), then \( \tau_B < 1 \) as long as \( s_{b0} > 0 \)
• I.e. zero receivers do not want to tax bequests at 100%, because they themselves want to leave bequests
  → **trade-off between taxing rich successors from my cohort vs taxing my own children**
Example 1: \( \tau = 30\%, \alpha = 30\%, s_{bo} = 10\%, e_B = 0 \)

- If \( b_y = 20\% \), then \( \tau_B = 73\% \) & \( \tau_L = 22\% \)
- If \( b_y = 15\% \), then \( \tau_B = 67\% \) & \( \tau_L = 29\% \)
- If \( b_y = 10\% \), then \( \tau_B = 55\% \) & \( \tau_L = 35\% \)
- If \( b_y = 5\% \), then \( \tau_B = 18\% \) & \( \tau_L = 42\% \)

\[ \rightarrow \] with high bequest flow \( b_y \), zero receivers want to tax inherited wealth at a higher rate than labor income (73\% vs 22\%); with low bequest flow they want the opposite (18\% vs 42\%)

**Intuition:** with low \( b_y \) (high \( g \)), not much to gain from taxing bequests, and this is bad for my own children

With high \( b_y \) (low \( g \)), it’s the opposite: it’s worth taxing bequests, so as to reduce labor taxation and allow zero receivers to leave a bequest
Example 2: $\tau=30\%$, $\alpha=30\%$, $s_{bo}=10\%$, $b_y=15\%$

- If $e_B=0$, then $\tau_B=67\%$ & $\tau_L=29\%$
- If $e_B=0.2$, then $\tau_B=56\%$ & $\tau_L=31\%$
- If $e_B=0.5$, then $\tau_B=46\%$ & $\tau_L=33\%$
- If $e_B=1$, then $\tau_B=35\%$ & $\tau_L=35\%$

$\rightarrow$ behavioral responses matter but not hugely as long as the elasticity $e_B$ is reasonable.

Kopczuk-Slemrod 2001: $e_B=0.2$ (US)
(French experiments with zero-children savers: $e_B=0.1-0.2$)
• **Proposition 3** (z%-bequest-receivers optimum):

\[ \tau_B = \frac{1-(1-\alpha-\tau)s_{bz}/b_y-(1+e_B+s_{bz})z/\theta_z}{(1+e_B+s_{bz})(1-z/\theta_z)} \]

• If \( z \) large, \( \tau_B < 0 \): top successors want bequest subsidies

• But since the distribution of inheritance is highly concentrated (bottom 50% successors receive \(~5\%\) of aggregate flow), the bottom-50%-receivers optimum turns out to be very close to the zero-receivers optimum

• Perceptions about wealth inequality & mobility matter a lot: if bottom receivers expect to leave large bequests, then they may prefer low bequest tax rates

\[ \rightarrow \text{it is critical to estimate the right distributional parameters} \]
• Proposition 7 (optimum with elastic labor supply):

\[
\tau_B = \frac{1-(1-\alpha-\tau\cdot(1+e_L))s_{b0}/b_y}{1+e_B+s_{b0}\cdot(1+e_L)}
\]

• Race between two elasticities: \(e_B\) vs \(e_L\)
• \(\tau_B\) decreases with \(e_B\) but increases with \(e_L\)

**Example**: \(\tau=30\%, \alpha=30\%, s_{bo}=10\%, b_y=15\%\)
• If \(e_B=0\) & \(e_L=0\), then \(\tau_B=67\%\) & \(\tau_L=29\%\)
• If \(e_B=0.2\) & \(e_L=0\), then \(\tau_B=56\%\) & \(\tau_L=31\%\)
• If \(e_B=0.2\) & \(e_L=0.2\), then \(\tau_B=59\%\) & \(\tau_L=30\%\)
• If \(e_B=0.2\) & \(e_L=1\), then \(\tau_B=67\%\) & \(\tau_L=29\%\)
Other extensions

- **Optimal non-linear bequest tax**: simple formula for top rate; numerical solutions for full schedule
- **Closed economy**: $F_K = R = e^{rH-1} = \text{generational return}$
  \[
  \rightarrow \text{optimal tax formulas continue to apply as in open economy with } e_B, e_L \text{ being the pure supply elasticities}
  \]
- **Lifecycle saving**: assume agents consume between age $A$ and $D$, and have a kid at age $H$. E.g. $A=20$, $D=80$, $H=30$, so that everybody inherits at age $I=D-H=50$.
  \[
  \rightarrow \text{Max } V(U,b,b) \text{ with } U = \left[ \int_{A}^{D} e^{-\delta a} c_a^{1-\gamma} \right]^{1/(1-\gamma)}
  \]
  \[
  \rightarrow \text{same } b_y \text{ and } \tau_B \text{ formulas as before, except for a factor } \lambda \\
  \text{correcting for when inheritances are received relative to labor income: } \lambda \approx 1 \text{ if inheritance received around mid-life}
  \]
  (early inheritance: $b_y, \tau_B \uparrow$; late inheritance: $b_y, \tau_B \downarrow$)
Part 2: Optimal K tax with imperfect markets

• One-period model, perfect K markets: equivalence btw bequest tax and lifetime K tax as \((1 - \tau_B)e^{r_H} = e^{(1 - \tau_K)r_H}\)

• Life-cycle savings, perfect K markets: it’s always better to have a big tax \(\tau_B\) on bequest, and zero lifetime capital tax \(\tau_K\), so as to avoid intertemporal consumption distorsion

• However in the real world most people seem to prefer paying a property tax \(\tau_K=1\%\) during 30 years rather than a big bequest tax \(\tau_B=30\%\)

• Total K taxes = 9% GDP, but bequest tax <1% GDP

• In our view, the observed collective choice in favour of lifetime K taxes is a rational consequence of K markets imperfections, not of tax illusion
Simplest imperfection: fuzzy frontier between capital income and labor income flows, can be manipulated by taxpayers (self-employed, top executives, etc.) (= tax enforcement problem)

Proposition 5: With fully fuzzy frontier, then $\tau_K = \tau_L$ (capital income tax rate = labor income tax rate), and bequest tax $\tau_B > 0$ is optimal iff bequest flow by sufficiently large

Define $\tau_B = \tau_B + (1 - \tau_B)\tau_K R/(1 + R)$, with $R = e^{rh} - 1$.

$\tau_K = \tau_L \rightarrow$ adjust $\tau_B$ down to keep $\tau_B$ the same as before

$\rightarrow$ comprehensive income tax + bequest tax

= what we observe in many countries
Uninsurable uncertainty about future rate of return: what matters is $b_{ti}e^{rt_{ti}H}$, not $b_{ti}$; but at the time of setting the bequest tax rate $\tau_B$, nobody knows what the rate of return $1+R_{ti}=e^{rt_{ti}H}$ is going to be during the next 30 or 40 years…

(idiosyncratic + aggregate uncertainty)

→ with uninsured shocks on returns $r_{ti}$, it’s more efficient to split the tax burden between one-off transfer taxes and lifetime capital taxes

Intuition: if you inherit a Paris or NYC apartment worth 100 000€ in 1972, nobody knows what the total cumulated return will be btw 1972 & 2012; so it’s better to charge a moderate bequest tax and a larger annual tax on property values & flow returns
• Assume rate of return \( R_{ti} = \varepsilon_{ti} + \xi e_{ti} \)

With: \( \varepsilon_{ti} = \text{i.i.d. random shock with mean } R_0 \)
\( e_{ti} = \text{effort put into portfolio management (how much time one spends checking stock prices, looking for new investment opportunities, monitoring one’s financial intermediary, etc.)} \)
\( c(e_{ti}) = \text{convex effort cost proportional to portfolio size} \)

• Define \( e_R = \text{elasticity of aggregate rate of return } R \text{ with respect to net-of-capital-income-tax rate } 1-\tau_K \)

• If returns mostly random (effort parameter small as compared to random shock), then \( e_R \approx 0 \)

• Conversely if effort matters a lot, then \( e_R \) large
• **Proposition 6.** Depending on parameters, optimal capital income tax rate \( \tau_K \) can be > or < than optimal labor income tax rate \( \tau_L \); if \( e_R \) small enough and/or \( b_y \) large enough, then \( \tau_K > \tau_L \)

(=what we observe in UK & US during the 1970s)

**Example:** \( \tau=30\% \), \( \alpha=30\% \), \( s_{bo}=10\% \), \( b_y=15\% \), \( e_B=e_L=0 \)
- If \( e_R=0 \), then \( \tau_K=100\% \), \( \tau_B=9\% \) & \( \tau_L=34\% \)
- If \( e_R=0.1 \), then \( \tau_K=78\% \), \( \tau_B=35\% \) & \( \tau_L=35\% \)
- If \( e_R=0.3 \), then \( \tau_K=40\% \), \( \tau_B=53\% \) & \( \tau_L=36\% \)
- If \( e_R=0.5 \), then \( \tau_K=17\% \), \( \tau_B=56\% \) & \( \tau_L=37\% \)
- If \( e_R=1 \), then \( \tau_K=0\% \), \( \tau_B=58\% \) & \( \tau_L=38\% \)
Govt Debt and Capital Accumulation

• So far we imposed period-by-period govt budget constraint: no accumulation of govt debt or assets allowed

• In closed-economy, optimum capital stock should be given by modified Golden rule: $F_K = r^* = \delta + \Gamma g$

  with $\delta = \text{govt discount rate}$, $\Gamma = \text{curvature of SWF}$

• If govt cannot accumulate debt or assets, then capital stock may be too large or too small

• If govt can accumulate debt or assets, then govt can achieve modified Golden rule

• In that case, long run optimal $\tau_B$ is given by a formula similar to previous one (as $\delta \rightarrow 0$): capital accumulation is **orthogonal** to redistributive bequest and capital taxation
Consumption tax $\tau_C$

- Consumption tax $\tau_C$ redistributes between agents with different tastes $s_i$ for wealth & bequest, not between agents with different inheritance $z_i$; so $\tau_C$ cannot be a substitute for optimal capital tax $\tau_B$.

- If optimal $\tau_B$ not feasible, then $\tau_C$ can be a useful (Kaldor’55: upset with the fact that top labor earners pay more tax than top successors, who manage to evade progressive taxes via trust funds and k gains → create a progressive consumption tax so as to tax rentiers).

- E.g. a positive $\tau_C > 0$ can finance a labor subsidy $\tau_L < 0$ → but this is a fairly indirect way to tax rentiers: it is better to improve k tax collection (annual wealth declarations).

- Consumption tax is also an inadequate tool for saving incentives: better use debt policy to achieve Golden rule.
Conclusion

• (1) Main contribution: simple, tractable formulas for analyzing optimal tax rates on inheritance and capital

• (2) Main idea: economists’ emphasis on $1+r$ = relative price is excessive (intertemporal consumption distortions exist but are probably second-order)

• (3) The important point about the rate of return to capital $r$ is that
  (a) $r$ is large: $r > g \rightarrow$ tax inheritance, otherwise society is dominated by rentiers
  (b) $r$ is volatile and unpredictable $\rightarrow$ use lifetime K taxes to implement optimal inheritance tax