Tax attitudes and the optimal general income taxation

Marcelo Arbex ¹  Enlinson Mattos ²

¹ University of Windsor

² Fundacao Getulio Vargas - Sao Paulo School of Economics

NTA 2019
Tampa, Florida
We characterize the optimal (redistributive) income tax when two skill-types of agents have preferences with respect to tax payments.

Households derive utility from their own tax payments and payment of others in the economy - Relative Tax affinity concern.

We present optimal labor and savings income tax in a dynamic OLG model with income tax evasion.
Overview

1. Motivation
2. Literature
3. Model and Results
4. Tax Evasion
5. Conclusion
Motivation: Why do people pay taxes?


Recent evidence on non-pecuniary motivations for tax compliance (Slemrod, Rehman and Waseem, 2019)

Pro-social behavior, inequality aversion, reciprocity, warm-glow (Andreoni, 1990; Andreoni et al 1998).

Tax affinity (hostility): Individuals may derive (dis)utility from the amount of tax paid due to their pro-social tendencies, but also from the relative amount of their contributions, an impure altruistic behavior.
Motivation: Psychological Reasons

- Personality traits can module individuals’ behavior (Almlund, Duckworth, Heckman, and Kautz, 2011).

- Self-construal refers to the way in which a person thinks about and defines the self. Also it is a way of understanding one’s relationship to the larger social world (Markus and Kitayama, 1991).
  - ‘An interdependent self-construal, because of its emphasis on relationships and groups, is one in which the self is seen as fundamentally embedded in the larger social world and this might affect behavioral decisions.’

- A relative tax affinity concerned individual enjoys utility when paying taxes ‘similar’ to her reference group.
Is there such an individual with relative tax preferences?

Figure: American’s View on Taxes

National Public Radio/Kaiser Family Foundation/Kennedy School of Government

National Survey of Americans’ Views on Taxes
Is there such an individual with relative tax preferences?

Questions such as:

"Do you and your family pay more (less, about) than your fair share?"

"The feeling that some wealthy people get away no paying their fair share bothers you the most about taxes?"

"Did you: (i) buy something online or from a local store; (ii) donate more to charity or (iii) work less, to pay less in taxes last year?"

"To pay less taxes, have you (i) chosen to buy a house instead of renting; (ii) bought or sold a stock/bond you otherwise would not have bought/sold; (iii) chosen to live somewhere other than where you work; (iv) put money in a retirement account?"
VII. Philosophy

18. I'm going to read you a list of groups. Please tell me if you think they pay more than their fair share, less than their fair share, or about their fair share in federal taxes.

<table>
<thead>
<tr>
<th></th>
<th>Pay more than their fair share</th>
<th>Less than their fair share</th>
<th>About their fair share</th>
<th>Don’t know</th>
<th>Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. High-income families</td>
<td>15</td>
<td>57</td>
<td>25</td>
<td>3</td>
<td>*</td>
</tr>
<tr>
<td>b. Middle-income families</td>
<td>59</td>
<td>3</td>
<td>34</td>
<td>3</td>
<td>*</td>
</tr>
<tr>
<td>c. Low-income families</td>
<td>36</td>
<td>20</td>
<td>40</td>
<td>4</td>
<td>*</td>
</tr>
<tr>
<td>d. You and your family</td>
<td>45</td>
<td>3</td>
<td>48</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

(SCRAMBLE WORDS IN PARENTS)

22. Which of the following bothers you most about taxes: (the large amount you pay in taxes,) (the complexity of the tax system,) or (the feeling that some wealthy people get away not paying their fair share)?

<table>
<thead>
<tr>
<th></th>
<th>The large amount you pay in taxes</th>
<th>The complexity of the tax system</th>
<th>The feeling that some wealthy people get away not paying their fair share</th>
<th>Don’t know</th>
<th>Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>14</td>
<td>32</td>
<td>51</td>
<td>2</td>
<td>*</td>
</tr>
</tbody>
</table>
X. Taxes and Decision Making

61. Here are some decisions that some people make in part because of taxes. In the LAST YEAR did you (ITEM) IN PART because it meant that you would pay less in taxes?

<table>
<thead>
<tr>
<th>Decision</th>
<th>Yes</th>
<th>No</th>
<th>Retired/did not work</th>
<th>Don’t know</th>
<th>Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Buy something on the Internet instead of from a local store</td>
<td>14</td>
<td>85</td>
<td>NA</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>c. Donate more to charity</td>
<td>16</td>
<td>83</td>
<td>NA</td>
<td>1</td>
<td>--</td>
</tr>
<tr>
<td>d. Work less</td>
<td>9</td>
<td>84</td>
<td>7</td>
<td>1</td>
<td>*</td>
</tr>
</tbody>
</table>

69. Have you EVER (ITEM) IN PART because it meant you would pay less in taxes

<table>
<thead>
<tr>
<th>Decision</th>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
<th>Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Chosen to buy a house instead of renting</td>
<td>26</td>
<td>73</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b. Bought or sold a stock or a bond you otherwise wouldn’t have bought or sold</td>
<td>9</td>
<td>90</td>
<td>1</td>
<td>*</td>
</tr>
<tr>
<td>c. Chosen to live somewhere other than where you work</td>
<td>11</td>
<td>88</td>
<td>1</td>
<td>--</td>
</tr>
<tr>
<td>d. Put money in a retirement account</td>
<td>40</td>
<td>60</td>
<td>1</td>
<td>*</td>
</tr>
</tbody>
</table>
73. Do you have children under the age of 18?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
<th>Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>38</td>
<td>62</td>
<td>1</td>
<td>*</td>
</tr>
</tbody>
</table>

(Asked of total who have children under 18; n = 519)

74. How many?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7+</th>
<th>Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>40</td>
<td>34</td>
<td>16</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Leaned Party table

<table>
<thead>
<tr>
<th></th>
<th>Republican</th>
<th>Democrat</th>
<th>Independent</th>
<th>Something else</th>
<th>Don’t know</th>
<th>Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>25</td>
<td>44</td>
<td>8</td>
<td>10</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

D06. Are you currently married, living with a partner, widowed, divorced, separated, or have you never married?

<table>
<thead>
<tr>
<th></th>
<th>Currently married</th>
<th>Living w/ a partner</th>
<th>Widowed</th>
<th>Divorced</th>
<th>Separated</th>
<th>Never married</th>
<th>Don’t Know</th>
<th>Refused</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>55</td>
<td>1</td>
<td>7</td>
<td>11</td>
<td>2</td>
<td>10</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

D09. What is the last grade or class that you completed in school?

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>High school graduate or less (NET)</td>
<td>49</td>
</tr>
<tr>
<td>Less than high school graduate (SUBNET)</td>
<td>17</td>
</tr>
<tr>
<td>None, or grade 1-8</td>
<td>4</td>
</tr>
<tr>
<td>High school incomplete</td>
<td>12</td>
</tr>
<tr>
<td>High school graduate + (SUBNET)</td>
<td>32</td>
</tr>
<tr>
<td>High school graduate</td>
<td>29</td>
</tr>
<tr>
<td>Business, technical/vocational school</td>
<td>2</td>
</tr>
<tr>
<td>Some college or more (NET)</td>
<td>51</td>
</tr>
<tr>
<td>Some college, no 4 year degree</td>
<td>27</td>
</tr>
<tr>
<td>College graduate + (SUBNET)</td>
<td>24</td>
</tr>
<tr>
<td>College graduate</td>
<td>16</td>
</tr>
<tr>
<td>Post-graduate training</td>
<td>8</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>*</td>
</tr>
<tr>
<td>Refused</td>
<td>*</td>
</tr>
</tbody>
</table>
Must control for II
## AVT - Table 1: Data description

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>More</th>
<th>About</th>
<th>Less</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoidance</td>
<td>0.68</td>
<td>0.67</td>
<td>0.82</td>
</tr>
<tr>
<td>Education</td>
<td>4.68</td>
<td>4.88</td>
<td>5.27</td>
</tr>
<tr>
<td>Low income</td>
<td>0.40</td>
<td>0.39</td>
<td>0.40</td>
</tr>
<tr>
<td>Middle Income</td>
<td>0.37</td>
<td>0.43</td>
<td>0.24</td>
</tr>
<tr>
<td>High Income</td>
<td>0.17</td>
<td>0.14</td>
<td>0.33</td>
</tr>
<tr>
<td>Has stocks</td>
<td>0.60</td>
<td>0.59</td>
<td>0.76</td>
</tr>
<tr>
<td>Own a House</td>
<td>0.76</td>
<td>0.75</td>
<td>0.76</td>
</tr>
<tr>
<td>Young</td>
<td>0.12</td>
<td>0.18</td>
<td>0.13</td>
</tr>
<tr>
<td>Adult</td>
<td>0.48</td>
<td>0.46</td>
<td>0.36</td>
</tr>
<tr>
<td>Old</td>
<td>0.26</td>
<td>0.21</td>
<td>0.42</td>
</tr>
<tr>
<td>Senior</td>
<td>0.12</td>
<td>0.14</td>
<td>0.09</td>
</tr>
<tr>
<td>Republican</td>
<td>0.39</td>
<td>0.39</td>
<td>0.29</td>
</tr>
<tr>
<td>Democrat</td>
<td>0.41</td>
<td>0.44</td>
<td>0.56</td>
</tr>
<tr>
<td>Independent</td>
<td>0.08</td>
<td>0.06</td>
<td>0.07</td>
</tr>
<tr>
<td>Male</td>
<td>0.48</td>
<td>0.52</td>
<td>0.53</td>
</tr>
</tbody>
</table>

| n                    | 605  | 651  | 45   |
### AVT - Table 2: Correlations for Relative Tax affinity

<table>
<thead>
<tr>
<th>Panel A</th>
<th>Avoidance</th>
<th>Avoidance I</th>
<th>Online</th>
<th>donation</th>
<th>labor supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>More</td>
<td>0.00546</td>
<td>0.0577**</td>
<td>0.0460**</td>
<td>0.00625</td>
<td>0.0382**</td>
</tr>
<tr>
<td></td>
<td>(0.0278)</td>
<td>(0.0280)</td>
<td>(0.0206)</td>
<td>(0.0218)</td>
<td>(0.0152)</td>
</tr>
<tr>
<td>Fair</td>
<td>-0.00629</td>
<td>-0.0706**</td>
<td>-0.0371*</td>
<td>-0.0176</td>
<td>-0.0359**</td>
</tr>
<tr>
<td></td>
<td>(0.0276)</td>
<td>(0.0276)</td>
<td>(0.0203)</td>
<td>(0.0216)</td>
<td>(0.0147)</td>
</tr>
<tr>
<td>Less</td>
<td>0.106</td>
<td>0.142*</td>
<td>0.0346</td>
<td>0.166**</td>
<td>0.00929</td>
</tr>
<tr>
<td></td>
<td>(0.0679)</td>
<td>(0.0805)</td>
<td>(0.0605)</td>
<td>(0.0722)</td>
<td>(0.0431)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel B</th>
<th>Avoidance II</th>
<th>Own house</th>
<th>Stocks</th>
<th>Live</th>
<th>Retirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>More</td>
<td>-0.0218</td>
<td>0.0591**</td>
<td>0.00359</td>
<td>0.0300*</td>
<td>0.0155</td>
</tr>
<tr>
<td></td>
<td>(0.0301)</td>
<td>(0.0255)</td>
<td>(0.0183)</td>
<td>(0.0172)</td>
<td>(0.0274)</td>
</tr>
<tr>
<td>Fair</td>
<td>0.0199</td>
<td>-0.0620**</td>
<td>-0.0139</td>
<td>-0.0269</td>
<td>0.00472</td>
</tr>
<tr>
<td></td>
<td>(0.0299)</td>
<td>(0.0252)</td>
<td>(0.0182)</td>
<td>(0.0169)</td>
<td>(0.0273)</td>
</tr>
<tr>
<td>Less</td>
<td>0.156**</td>
<td>0.115</td>
<td>0.145**</td>
<td>-0.0193</td>
<td>0.113</td>
</tr>
<tr>
<td></td>
<td>(0.0725)</td>
<td>(0.0747)</td>
<td>(0.0665)</td>
<td>(0.0433)</td>
<td>(0.0743)</td>
</tr>
</tbody>
</table>

Std errors in parentheses. **p < 0.01, *p < 0.05, p < 0.1.

Avoidance I: Internet, donation, labor supply adjustments. Avoidance II: Own X rent a house, buy and sell stocks, live in a local different from the work, retirement account.
### AVT - Table 3: Correlations for No Tax ’Hostility’

<table>
<thead>
<tr>
<th>No Tax Hostility</th>
<th>Avoidance</th>
<th>Avoidance I</th>
<th>Avoidance II</th>
</tr>
</thead>
<tbody>
<tr>
<td>More</td>
<td>-0.0846**</td>
<td>-0.0782*</td>
<td>-0.0849**</td>
</tr>
<tr>
<td></td>
<td>(0.0363)</td>
<td>(0.041)</td>
<td>(0.047)</td>
</tr>
<tr>
<td>Fair</td>
<td>-0.0843**</td>
<td>-0.0748*</td>
<td>-0.0848**</td>
</tr>
<tr>
<td></td>
<td>(0.0364)</td>
<td>(0.0409)</td>
<td>(0.0408)</td>
</tr>
<tr>
<td>Less</td>
<td>-0.0872**</td>
<td>-0.0929**</td>
<td>-0.0793*</td>
</tr>
<tr>
<td></td>
<td>(0.0357)</td>
<td>(0.261)</td>
<td>(0.0406)</td>
</tr>
</tbody>
</table>

Std errors in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Avoidance I: Internet, donation, labor supply adjustments. Avoidance II: Own X rent a house, buy and sell stocks, live in a local different from the work, retirement account.
Our results

- We find that less progressive income taxes (lower marginal taxes) can be imposed in both skill-types to stimulate labor effort at the margin.

- The optimal marginal savings tax exacerbates the difference between marginal rate of substitution between today versus tomorrow’s consumption and interest rate.

- When tax evasion is allowed, we must add a policy instrument to close the wedge of the evasion and consumption margin, but still less (optimal) progressiveness can be reached.

- Even high skilled individuals could face a negative marginal income tax to avoid evasion and mimicking.
Neurophysiological evidence for the importance of social comparison on reward processing in the human brain (Fliessbach et al., 2007).


Donations versus tax payment decisions may be influenced by pure altruism and/or warm-glow. Do they crowd out? (Andreoni, 1990; Hungerman, 2014; Ottoni-Wilhelm et al., 2017).

Comparison of tax payments to a reference level of taxes (Kahneman and Tversky, 1979).

Self-Construal (Markus and Kitayama; 1991).
Tax affinity: Djanali and Sheehan-Connor (2012) “the high tax rates during World War II were accepted by virtually all citizens regardless of income level…”

Paternalistic view for the social planner to correct the externality caused by under or over tax payment (Wane, 2001; Kanbur, Kenn and Tuomala, 1994).

We also address the literature on salience and inattention (Bordalo et al., 2013; Caplin and Dean, 2015; Chetty et al., 2009; Hoopes et al., 2015 and Koszegi and Szeidl, 2013).
Households and Positional Preferences:

- OLG model where at each time period $t$, a new generation is born and denoted by its date of birth.

- Individuals live for two periods. The members of generation $t$ work during the first period of their life (when young, $t$) and do not work during the second period (when old, $t + 1$).

- Agents born in period $t$ are heterogeneous with respect to their work ability.

- Low-ability type (type $i = 1$) is less productive than the high-ability type (type $i = 2$).

- There are $n_t^i$ type-$i$ members of generation $t$ (individuals of ability-type $i$ who were born at the beginning of period $t$).
The Economy

- They care about leisure \( (z_t^i = 1 - l_t^i) \), and consumption in both periods: \( c_t^i \) and \( x_{t+1}^i \).

- As a pro-social individual, she also is concerned about her (relative) tax payment \( T_t \left( w_t^i l_t^i \right) \) on their labor income \( w_t^i l_t^i \), where \( w_t^i \) is wage rate.

- She also cares about her savings tax payments \( Q_{t+1} \left( s_t^i r_{t+1} \right) \), where \( s_t^i \) and \( r_{t+1} \) are the agent’s savings in period \( t \) and the market interest rate in period \( t + 1 \).
The Economy: Why OLG model?

- Individuals compare the amount of taxes they pay:

\[
\overline{T}_t(.) = \overline{T}_t(T_t(w_t^i l_t^i), T_t(w_t^j l_t^j), T_{t-1}(w_{t-1}^i l_{t-1}^i), T_{t-1}(w_{t-1}^j l_{t-1}^j)) \\
\overline{Q}_{t+1}(.) = \overline{Q}_{t+1}(Q_{t+1}(s_t^i r_{t+1}), Q_{t+1}(s_t^j r_{t+1}), Q_t(s_{t-1}^i r_t), Q_t(s_{t-1}^j r_t))
\]
Full attention/rationality corresponds to \( m^i = 1 \), versus \( m^i = 0 \) (Gabaix and Farhi, 2019). The utility function of ability-type \( i \) born in the period \( t \):

\[
U_t^i = u_t^i(c_t^i, z_t^i, x_{t+1}^i, m_T^i T_t(w_t^i l_t^i), m_Q^i Q_t+1(s_t r_{t+1}), m_T^i T_t(\cdot), m_Q^i Q_t+1(\cdot))(1)
\]

s.t.

\[
c_t^i = w_t^i l_t^i - T_t(w_t^i l_t^i) - s_t^i \tag{2}
\]

\[
x_{t+1}^i = s_t^i (1 + r_{t+1}) - Q_{t+1}(s_t^i r_{t+1}) \tag{3}
\]
Consumer’s FOC:

\[ u^i_c[w^i_t - T'_t(w^i_l^i)w^i_t] - u^i_z + u^i_T(.)m_T T'_t(w^i_l^i)w^i_t = 0 \] (4)

\[-u^i_c + u^i_x(1 + r_{t+1} - Q'_{t+1}(s^i_t r_{t+1}) r_{t+1}) + u^i_Q(.)m_Q Q'_{t+1}(s^i_t r_{t+1}) r_{t+1} = 0 \] (5)
Slope of Indifference Curves:

\[
\frac{dc_i^t}{dy_i^t} = \frac{u_{yi}^t(1 - T'_t) - u_{T(.)}^t m_T^t T'_t(w_t^i l_t^i)}{w_t^i u_c^i}
\]  \hspace{1cm} (6)

\[
\frac{dc_t^i}{ds_t^i} = \frac{u_{xi}^t(1 + r_{t+1} - Q'_{t+1}(s_tr_{t+1}) r_{t+1}) + u_{Q(.)}^t m_Q^t Q'_{t+1}(s_t^i r_{t+1}) r_{t+1}}{u_c^i}
\]  \hspace{1cm} (7)
Tax Affinity X Tax Hostility

Pareto Optimal Taxation
Table: Tax Independence vs. Interdependence: Affinity, Hostility

<table>
<thead>
<tr>
<th>Interdependent Preferences ($m^i_T = 1$)</th>
<th>Interdependent Preferences ($m^i_T = 1$)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tax Conformity</strong></td>
<td><strong>Tax Opposition</strong></td>
</tr>
<tr>
<td>$u^i_{T(i)} &gt; 0$</td>
<td>$u^i_{T(i)} &lt; 0$</td>
</tr>
</tbody>
</table>

Independent Tax Preferences ($m^i_T = 1$)

<table>
<thead>
<tr>
<th>Tax</th>
<th>$u^i_{T(i)} &gt; 0$</th>
<th>Tax</th>
<th>Sympathetic Funder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affinity</td>
<td></td>
<td>Anti-tax Free-rider</td>
<td></td>
</tr>
<tr>
<td>$u^i_{T(i)} &lt; 0$</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: $u^i_{T(i)} = \partial u^i / \partial T (w^i l^i)$; $u^i_{T(i)} = \partial u^i / \partial T$. 
Firms’ Problem:

To Maximize Profits (CRS tech):

\[ \Pi_t = F(L^1_t, L^2_t, K_t) - w^1_t L^1_t - w^2_t L^2_t - r_t K_t \]

\[ F_{L_i} (L^1_t, L^2_t, K_t) = \frac{\partial f (\theta^1 L^1_t + \theta^2 L^2_t, K_t)}{\partial (\theta^1 L^1_t + \theta^2 L^2_t)} \theta^i = w^i_t, \text{ for } i = 1, 2, \quad (8) \]

\[ F_{K_t} (L^1_t, L^2_t, K_t) = \frac{\partial f (\theta^1 L^1_t + \theta^2 L^2_t, K_t)}{\partial K_t} = r_t. \quad (9) \]
Problem Constraints:

(i) Government wants to redistribute from high to low and observes income, not labor supply;

(ii) Self-Selection Constraint:

\[
U^2_t = u^2_t \left( c^2_t, z^2_t, x^2_{t+1}, m^2_T T_t (w^2_t l^2_t), m^2_Q Q_{t+1} (s^2_t r_{t+1}), m^2_T \bar{T}_t (\cdot), m^2_Q \bar{Q}_{t+1} (\cdot) \right)
\geq \hat{u}^2_t \left( c^1_t, 1 - \phi l^1_t, x^1_{t+1}, m^2_T T_t (w^2_t \phi l^1_t), m^2_Q Q_{t+1} (s^1_t r_{t+1}), m^2_T \bar{T}_t (\cdot), m^2_Q \bar{Q}_{t+1} (\cdot) \right)
\]

\[
= \hat{U}^2_t
\]

(iii) Resource Constraints.

\[
F \left( L^1_t, L^2_t, K_t \right) + K_t = \sum_{i=1}^{2} \left( n^i_t c^i_t + n^i_{t-1} x^i_t \right) + K_{t+1}
\]
Planner’s Problem:

\[ L = W (n_0^1 U_0^1, n_0^2 U_0^2, n_1^1 U_1^1, n_1^2 U_1^2, ... ) \]

\[ + \sum_t \lambda_t \left[ U_t^2 - \hat{U}_t^2 \right] \]

\[ + \sum_t \gamma_t \left[ F (L_t^1, L_t^2, K_t) + K_t - \sum_{i=1}^2 (n_t^i c_t^i + n_t^{i-1} x_t^i) - K_{t+1} \right] \]

\( \lambda_t \) and \( \gamma_t \) are the Lagrange multipliers associated with constraints (10) and (11),
Definitions:

\[ MRS_{z,c}^{it} = \frac{u_z^{it}}{u_c^{it}} \]
\[ MRS_{c,x}^{it} = \frac{u_c^{it}}{u_x^{it}} \]
\[ MRS_{Q(\cdot),c}^{it} = \frac{u_{Q(\cdot)}^{it}}{u_c^{it}} \]
\[ MRS_{Q(\cdot),x}^{it} = \frac{u_{Q(\cdot)}^{it}}{u_x^{it}} \]

\[ MRS_{T(\cdot),c}^{it} = \frac{u_{T(\cdot)}^{it}}{u_c^{it}} \]
Optimal marginal income taxes

\[ T_t' (w_t^1 l_t^1) = \frac{\left( \frac{\lambda_t^*}{n_t w_t} \right) \left( MRS_{z,c}^1 - \phi \overline{MRS}_{z,c}^2 \right) - \left( \frac{1}{\gamma_t n_t w_t} \right) \Omega_T^1 \left( \frac{\partial L}{\partial T_t} \right) + \left( \frac{\lambda_t^*}{n_t} \right) \left( m_T^1 MRS_{T(\cdot),c}^1 - m_T^2 \overline{MRS}_{T(\cdot),c}^2 \right)}{1 + \left( \frac{\lambda_t^*}{n_t} \right) \left( m_T^1 MRS_{T(\cdot),c}^1 - m_T^2 \overline{MRS}_{T(\cdot),c}^2 \right)} \] (13)

\[ T_t' (w_t^2 l_t^2) = -\frac{1}{\gamma_t n_t^2 w_t^2} \Omega_T^2 \left( \frac{\partial L}{\partial T_t} \right) \] (14)
Making sense of equations

\[ T'_t \left( w^1_t I^1_t \right) = \frac{\lambda^*_t}{n^1_t w^1_t} \left( MRS_{z,c}^{1t} - \phi \widehat{MRS}_{z,c}^{2t} \right) \frac{1}{1} \] (15)

\[ T'_t \left( w^2_t I^2_t \right) = 0 \] (16)
\[ T'_t \left( \frac{w^1_t}{l^1_t} \right) = -\left( \frac{1}{\gamma_t n^1_t w^1_t} \right) \frac{\Omega^1_t}{1} \left( \frac{\partial L}{\partial T_t} \right) \]  

(17)

\[ T'_t \left( \frac{w^2_t}{l^2_t} \right) = -\frac{1}{\gamma_t n^2_t w^2_t} \Omega^2_T \left( \frac{\partial L}{\partial T_t} \right) \]  

(18)
Making sense of equations

Part 3: Own Self Tax Concern

\[ T_t' \left( w_t^1 / l_t^1 \right) = \frac{1}{1 + \left( \frac{\lambda_t^*}{n_t} \right) \left( m_t^1 MRS_{T(\cdot),c}^1 - m_t^2 \hat{MRS}_{T(\cdot),c}^2 \right)} \]  \hspace{1cm} (19)

\[ T_t' \left( w_t^2 / l_t^2 \right) = 0 \]  \hspace{1cm} (20)
Proposition 1: Optimal Income Distortion

In an economy where individuals have independent tax affinity (hostility) attitudes, the less skilled is expected to face lower (larger) optimal marginal income taxes than otherwise for redistributive reason. Interdependent conformity (opposition) preferences act generating a positive (negative) impact on aggregated welfare leading to lower (larger) marginal income taxes.
Optimal Savings Tax

Optimal savings tax

\[ Q' \left( s_{t+1}^1 r_{t+1} \right) = \frac{1}{r_{t+1}} \left\{ \left[ (1 + r_{t+1}) - MRS_{1,t}^{c,x} \right] - \frac{1}{\gamma_t n_t^1 m_Q^1} \Omega_{1,t}^{1+1} \left( \frac{\partial L}{\partial Q_{t+1}} \right) \right\} \] (21)

\[ Q' \left( s_{t+1}^2 r_{t+1} \right) = \frac{1}{r_{t+1}} \left\{ \left[ (1 + r_{t+1}) - MRS_{2,x}^{c} \right] - \frac{1}{\gamma_t n_t^2 m_Q^2} \Omega_{2,t}^{2+1} \left( \frac{\partial L}{\partial Q_{t+1}} \right) \right\} \] (22)
Proposition 2: Optimal Savings Distortion

An individual with relative tax concern can face smaller (larger) optimal marginal savings tax than otherwise. This lower marginal savings taxes can be decomposed in two terms

- a positive (negative) impact of the reference tax payment on economy’s welfare that affects both types and
- the own tax affinity (hostility) term that influences the lower (larger) optimal marginal savings taxes on the less skilled.

Moreover, the optimal marginal savings tax exacerbates the difference between marginal rate of substitution between today versus tomorrow’s consumption and interest rate to address savings tax positionality.
Reference effect:

The following derivatives capture the positionality effect in period $t$ and $t+1$ as they reflect the atmospheric welfare effects of a change in the level of reference taxation in period $t$ and $t+1$:

\[
\frac{\partial L}{\partial T_t(\cdot)} = \sum_{i=1}^{2} \left( \frac{\partial W}{\partial (n_t U_t^i)} \right) n_t^i m_T^i u_T^i T(\cdot) + \sum_{i=1}^{2} \left( \frac{\partial W}{\partial (n_{t+1} U_{t+1}^i)} \right) n_{t+1}^i m_T^i u_{T+1}^i T(\cdot) + \lambda_t m_T^2 \left[ u_T^2 T(\cdot) - \hat{u}_T^2 T(\cdot) \right] + \lambda_{t+1} m_T^2 \left[ u_{T+1}^2 T(\cdot) - \hat{u}_{T+1}^2 T(\cdot) \right]
\]

\[
\frac{\partial L}{\partial Q_{t+1}(\cdot)} = \sum_{i=1}^{2} \left( \frac{\partial W}{\partial (n_t U_t^i)} \right) n_t^i m_Q^i u_Q^i \Phi(\cdot) + \sum_{i=1}^{2} \left( \frac{\partial W}{\partial (n_{t+1} U_{t+1}^i)} \right) n_{t+1}^i m_Q^i u_{Q+1}^i \Phi(\cdot) + \lambda_t m_Q^2 \left[ u_Q^2 Q(\cdot) - \hat{u}_Q^2 Q(\cdot) \right] + \lambda_{t+1} m_Q^2 \left[ u_{Q+1}^2 Q(\cdot) - \hat{u}_{Q+1}^2 Q(\cdot) \right]
\]
Reference effect:

Externality and Self-selection effect of the Reference Level

- Atmospheric externality of the tax concern. Tax conformity versus tax opposition.
  Conditional on their own tax payments, we expect the net to be positive:
  \[
  \sum_{i=1}^{2} \left( \frac{\partial W}{\partial (n_i^t U_i^t)} \right) n_i^t m_T u_{it}^T + \sum_{i=1}^{2} \left( \frac{\partial W}{\partial (n_{i+1}^{t+1} U_{i+1}^{t+1})} \right) n_{i+1}^t m_T u_{it+1}^{T+1}.
  \]

- With same utility function and different levels of \(c_t\) and \(l_t\).
  Depend on complementarity/substitutability between \(\bar{T}(\cdot)\) and those choices.
  Should be really small/zero:
  \[
  \lambda_t m_T^2 \left[ u_{2t}^T - \hat{u}_{2t}^T \right] + \lambda_{t+1} m_T^2 \left[ u_{2t+1}^{T+1} - \hat{u}_{2t+1}^{T+1} \right]
  \]

Arbex, M. & Mattos, E.
Tax Attitudes and optimum taxes
Novemer, 2019
Illustrative Example

\[ u_t^i = c_t^i + \log z_t^i - m_T^i \left[ T_t^i (w_t^i l_t^i) - \bar{T}_t \right]^2 + \beta \left\{ x_{t+1}^i - m_Q^i \left[ Q_{t+1}^i (s_{t+1} r_{t+1}) - Q_{t+1}^- \right]^2 \right\}. \]  \hspace{1cm} (23)

\[ \bar{T}_t = \frac{1}{N_t} \left[ \alpha \sum_{i=1}^{2} n_t^i T_t^i (w_t^i l_t^i) + (1 - \alpha) \sum_{i=1}^{2} n_{t-1}^i T_{t-1}^i (w_{t-1}^i l_{t-1}^i) \right] \]  \hspace{1cm} (24)

\[ \bar{Q}_{t+1} = \frac{1}{N_t} \left[ \alpha \sum_{i=1}^{2} n_t^i Q_{t+1}^i (s_t^i r_{t+1}) + (1 - \alpha) \sum_{i=1}^{2} n_{t-1}^i Q_{t}^i (s_{t-1}^i r_t) \right] \]  \hspace{1cm} (25)
Illustrative Example

\[ T'_t (w^1_t l^1_t) = \frac{\left( \frac{\lambda^*_t}{n^1_t w^1_t} \right) \left( \frac{1}{1-l^1_t} - \phi \frac{1}{1-\phi l^1_t} \right)}{1 - \left( \frac{\lambda^*_t}{n^1_t} \right) \left( 2m^1_Q T^1_t \Delta T^1_t - 2m^2_Q \Delta T^1_t \right) + \left( \frac{1}{\gamma_t n^1_t w^1_t} \right) \left( \frac{\partial L}{\partial T^1_t} \right)} \]

\[ T'_t (w^2_t l^2_t) = 0 \]

\[ Q' (s^1_{t+1} r_{t+1}) = \left[ 1 - \left( \frac{\lambda^{**}_t}{\gamma_t n^1_t m^1_Q} \right) \left( 2m^1_Q \Delta Q^1_t - 2m^2_Q \Delta Q^2_t \right) + \left( \frac{1}{\gamma_t n^1_t m^1_Q} \right) \left( \frac{\partial L}{\partial Q^1_t} \right) \right]^{-1} \]

\[ Q' (s^2_{t+1} r_{t+1}) = \left[ 1 + \frac{1}{\gamma_t n^2_t} \left( \frac{\partial L}{\partial Q^2_{t+1}} \right) \right]^{-1} \]
Tax Evasion as a Cost Resource

Consumer’s Utility

\[ U_t^i = u_t^i \left( c_t^i, z_t^i, x_{t+1}^i, m_T T_t \left( (1 - e_t^i) w_t^i l_t^i \right), m_Q Q_{t+1} \left( s_t^i r_{t+1} \right), m_T T_t (\cdot), m_Q Q_{t+1} (\cdot) \right) \] (26)

\[ \overline{T}_t(\cdot) \] is defined as

\[ \overline{T}_t(\cdot) = \overline{T}_t \left[ T_t \left( (1 - e_t^i) w_t^i l_t^i \right), T_t \left( (1 - e_t^i) w_t^i l_t^i \right), T_{t-1} \left( (1 - e_{t-1}^i) w_{t-1}^i l_{t-1}^i \right), T_{t-1} \left( (1 - e_{t-1}^i) w_{t-1}^i l_{t-1}^i \right) \right] \] (27)

Evasion is a resource cost

\[ c_t^i = w_t^i l_t^i - T_t \left( (1 - e_t^i) w_t^i l_t^i \right) - \sigma_t^i e_t^i w_t^i l_t^i - s_t^i \] (28)
We allow for evasion of a fraction of the earned income \((e^i_t)\) in that period, \(\sigma\) denotes that concealment cost.

Individuals can only evade labor income taxes but not their savings earnings. (Third-part remittance assumption).

### New Consumer’s FOCs:

\[
\begin{align*}
\ u^i_c \left[(1 - \sigma e^i_t)w^i_t - T'_t \left((1 - e^i_t)w^i_t l^i_t\right) (1 - e^i_t)w^i_t\right] - u^it \\
+ u^i_T(\cdot) m^i_T T'_t \left((1 - e^i_t)w^i_t l^i_t\right) (1 - e^i_t)w^i_t & = 0 \quad (29) \\
\ u^i_c \left[-\sigma w^i_t l^i_t + T'_t \left((1 - e^i_t)w^i_t l^i_t\right) w^i_t l^i_t\right] - u^i_T(\cdot) m^i_T T'_t \left((1 - e^i_t)w^i_t l^i_t\right) w^i_t l^i_t & = 0 \quad (30) \\
- u^i_c + u^i_x \left(1 + r_{t+1} - Q'_{t+1} \left(s^i_t r_{t+1}\right) r_{t+1}\right) + u^i_T(\cdot) m^i Q'_{t+1} \left(s^i_t r_{t+1}\right) r_{t+1} & = 0 \quad (31)
\end{align*}
\]
Now three self-selection constraints

Traditional: (32).

Tax Evasion: Chooses \((e_t^2)\) and adjust labor supply \((l_t^2 = [w_t^1(1 - e_t^1)/w_t^2(1 - e_t^2)]l_t^1)\): (33).

Tax Avoidance: Chooses \((l_t^2)\) and adjust the evasion level 
\(((1 - e_t^2) = w_t^1 l_t^1)/w_t^2 l_t^2 (1 - e_t^1))\): (34).

\[
\begin{align*}
U_t^2 & \geq \hat{U}_t^2 \\
U_t^2 & \geq \tilde{U}_t^2 \\
U_t^2 & \geq \ddot{U}_t^2
\end{align*}
\]
Now three self-selection constrains

\[
\begin{align*}
U_t^2 &= u_t^2 \left( c_t^2, 1 - l_t^2, x_{t+1}^2, m_T^2 T_t \left( (1 - e_t^2) w_t^2 l_t^2 \right), m_Q^2 Q_{t+1} \left( s_{t+1}^2 r_{t+1} \right), m_T^2 \bar{T}_t \left( \right), m_Q^2 \bar{Q}_{t+1} \left( \right) \right) \\
\hat{U}_t^2 &= \hat{u}_t^2 \left( c_t^1, 1 - \phi l_t^1, x_{t+1}^1, m_T^2 T_t \left( (1 - e_t^1) w_t^2 \phi l_t^1 \right), m_Q^2 Q_{t+1} \left( s_{t+1}^1 r_{t+1} \right), m_T^2 \bar{T}_t \left( \right), m_Q^2 \bar{Q}_{t+1} \left( \right) \right) \\
\tilde{U}_t^2 &= \tilde{u}_t^2 \left( c_t^1, 1 - \phi \left( \frac{1 - e_t^1}{1 - e_t^2} \right) l_t^1, x_{t+1}^1, m_T^2 T_t \left( (1 - e_t^2) w_t^2 \left[ \phi \left( \frac{1 - e_t^1}{1 - e_t^2} \right) l_t^1 \right] \right), m_Q^2 Q_{t+1} \left( s_{t+1}^1 r_{t+1} \right), m_T^2 \bar{T}_t \left( \right), m_Q^2 \bar{Q}_{t+1} \left( \right) \right) \\
\hat{\hat{U}}_t^2 &= \hat{\hat{u}}_t^2 \left( c_t^1, 1 - l_t^2, x_{t+1}^1, m_T^2 T_t \left( \left[ \phi (1 - e_t^1) \frac{l_t^1}{l_t^2} \right] w_t^2 l_t^2 \right), m_Q^2 Q_{t+1} \left( s_{t+1}^1 r_{t+1} \right), m_T^2 \bar{T}_t \left( \right), m_Q^2 \bar{Q}_{t+1} \left( \right) \right)
\end{align*}
\]
Tax evasion as a Cost Resource

Planner’s Problem

\[ L = W \left( n_0^1 U_0^1, n_0^2 U_0^2, n_1^1 U_1^1, n_1^2 U_1^2, \ldots \right) \]  

\[ + \sum_t \lambda_t \left[ U_t^2 - \hat{U}_t^2 \right] + \sum_t \eta_t \left[ U_t^2 - \tilde{U}_t^2 \right] + \sum_t \mu_t \left[ U_t^2 - \tilde{U}_t^2 \right] \]  

\[ + \sum_t \gamma_t \left[ F \left( L_t^1, L_t^2, K_t \right) + K_t - \sum_{i=1}^2 \left( n_t^i c_t^i + n_{t-1}^i x_t^i \right) - \sum_{i=1}^2 \left( \sigma_t^i n_t^i e_t^i w_t^i l_t^i \right) - K_{t+1} \right] \]
Tax evasion as a Cost Resource

Optimal Income Taxes

\[
T'_t ((1 - e^1_t) w^1_t l^1_t) = \left[ \begin{array}{c}
\left( \frac{\lambda^*_t}{n^1_t (1 - e^1_t) w^1_t} \right) (MRS^{1t}_z, c - \phi \overline{MRS}^{2t}_z, c) \\
+ \left( \frac{\eta^*_t}{n^1_t (1 - e^1_t) w^1_t} \right) (MRS^{1t}_z, c - \phi \frac{(1 - e^1_t)}{(1 - e^2_t)} \overline{MRS}^{2t}_z, c) \\
+ \left( \frac{\mu^*_t}{n^1_t (1 - e^1_t) w^1_t} \right) (MRS^{1t}_z, c) - \left( \frac{1}{\gamma_t n^1_t (1 - e^1_t) w^1_t} \right) \Omega^{1t}_T \left( \frac{\partial L}{\partial T_t} \right)
\end{array} \right] \tag{36}
\]

\[
T'_t ((1 - e^2_t) w^2_t l^2_t) = -\left( \frac{\mu^*_t \overline{MRS}_{z, c}}{(1 - e^2_t) w^2_t n^2_t} + \left( \frac{1}{\gamma_t n^2_t (1 - e^2_t) w^2_t} \right) \Omega^{2t}_T \left( \frac{\partial L}{\partial T_t} \right) \right) \tag{37}
\]
Proposition 3: Optimal Income Taxes with evasion

The possibility of evading income adds mimicking alternatives for the skilled individual. The optimal marginal income taxes for the less skilled now can be even lower (larger) than without evasion when individuals present independent tax affinity (hostility). Interdependent tax affinity (hostility) still acts reducing (increasing) tax progressivity on both types. The optimal marginal income tax for the skilled one calls for a subsidy to discourage her for mimicking.
Tax evasion as a Cost Resource

Optimal Savings Taxes

\[ Q' \left( s^1_{t+1} r_{t+1} \right) = \left( \frac{1}{r_{t+1}} \right) \frac{\left[ \left( 1 + r_{t+1} \right) - MRS^1_{c,x} \right] - \left( \frac{1}{\gamma_t} \right) \Omega^1_{Q t+1} \left( \frac{\partial L}{\partial Q_{t+1}} \right)}{1 + \left( \frac{\lambda^*}{n^*_1} \right) \left( m^1_Q MRS^1_{Q(\cdot),x} - m^2_Q MRS^2_{Q(\cdot),x} \right) + \left( \frac{\eta^*}{n^*_1} \right) \left( m^1_Q MRS^1_{Q(\cdot),x} - m^2_Q \tilde{MRS}^2_{Q(\cdot),x} \right) + \left( \frac{\mu^*}{n^*_1} \right) \left( m^1_Q MRS^1_{Q(\cdot),x} - m^2_Q \hat{MRS}^2_{Q(\cdot),x} \right)} \] (38)

\[ Q' \left( s^2_{t+1} r_{t+1} \right) = \left( \frac{1}{r_{t+1}} \right) \frac{\left[ \left( 1 + r_{t+1} \right) - MRS^2_{c,x} \right] - \frac{1}{\gamma_t n^*_2} \Omega^2_{Q t+1} \left( \frac{\partial L}{\partial Q_{t+1}} \right)}{1 + \left( \frac{\lambda^*}{n^*_2} \right) \left( m^1_Q MRS^1_{Q(\cdot),x} - m^2_Q \tilde{MRS}^2_{Q(\cdot),x} \right) + \left( \frac{\eta^*}{n^*_2} \right) \left( m^1_Q MRS^1_{Q(\cdot),x} - m^2_Q \hat{MRS}^2_{Q(\cdot),x} \right) + \left( \frac{\mu^*}{n^*_2} \right) \left( m^1_Q MRS^1_{Q(\cdot),x} - m^2_Q \hat{MRS}^2_{Q(\cdot),x} \right)} \] (39)
Proposition 4: Optimal Savings Taxes with evasion

We should not impose distortion on savings decision if marginal rate of substitution between consumption today versus tomorrow equals to interest rate. The larger that MRS the lower the tax/subsidy to accomplish future consumption. Again, interdependent tax affinity (hostility) calls for a reduction (increase) on the optimal marginal savings tax for both types. Self-selection constraints leads to an increase (reduction) optimal marginal savings tax on the less skilled if both individuals have independent tax affinity (hostility).
Tax evasion as a Cost Resource: Back to our example

\( T'_t (w^1_t l^1_t) = \) 

\[
\begin{align*}
1 - \left( \frac{\lambda^*_t}{n_t^1 w^1_t} \right) \left( \frac{1}{1-l^1_t} - \phi \frac{1}{1-e^1_t} \right) + \mu^*_t \left[ \frac{1}{1-l^1_t} \right] \left( 1-e^1_t \right)^{n_t^1 w^1_t} \\
+ \left( \frac{\eta^*_t}{1-e^1_t w^1_t n_t^1} \right) \left( \frac{1}{1-l^1_t} - \phi \left( \frac{1-e^1_t}{1-e^2_t} \right) \right) \left( 1-\phi \left[ \frac{1}{1-e^1_t}(1-e^2_t) \right] \right) \\
\end{align*}
\]

\( T'_t (w^2_t l^2_t) = \) 

\[
\begin{align*}
1 - \left( \frac{\mu^*_t}{n_t^2 w^2_t} \right) \left[ 2m_T^1 \Delta T^1_t - 2m_T^2 \Delta T^2_t \right] + \left( \frac{1}{\gamma t n^2_t} \right) \left( \frac{\partial L}{\partial T_t} \right) \\
- \left( \frac{\mu^*_t}{n_t^2} \right) \left[ 2m_T^1 \Delta T^1_t \right] - \left( \frac{\eta^*_t}{n_t^2} \right) \left[ 2m_T^1 \Delta T^1_t - 2m_T^2 \Delta T^2_t \right] \\
- \left( \frac{\mu^*_t}{(1-e^2_t) w^2_t n^2_t} \right) \left[ \frac{1}{1-l^2_t} \right] \\
\end{align*}
\]
\[
Q' (s_{t+1} r_{t+1}) = \left[ 1 + \left( \frac{\lambda_t^{**}}{\gamma_t n_t^1 m_Q^1} \right) \left( m_Q^1 MRS_{Q(\cdot),x}^{1t} - m_Q^2 \tilde{MRS}_{Q(\cdot),x}^{2t} \right) \right]^{-1} \\
+ \left( \frac{\eta_t^{**}}{n_t^1 m_Q^1} \right) \left( m_Q^1 MRS_{Q(\cdot),x}^{1t} - m_Q^2 \tilde{MRS}_{Q(\cdot),x}^{2t} \right) \\
+ \left( \frac{\mu_t^{**}}{n_t^1 m_Q^1} \right) \left( m_Q^1 MRS_{Q(\cdot),x}^{1t} - m_Q^2 \tilde{MRS}_{Q(\cdot),x}^{2t} \right) + \left( \frac{1}{\gamma_t n_t^1 m_Q^1} \right) \left( \frac{\partial L}{\partial Q_{t+1}} \right)
\]

\[
Q' (s_{t+1} r_{t+1}) = \left[ 1 + \frac{1}{\gamma_t n_t^2} \left( \frac{\partial L}{\partial Q_{t+1}} \right) \right]^{-1}
\]
Optimal Concealment Gap

- An additional instrument is necessary to optimally characterize the marginal rate of substitution between evasion and tax preferences (Slemrod and Yitzhaki, 1989 and Keen and Slemrod (2017)).
- Assume government can choose \( (\sigma^i_t) \) as policy variable having only welfare cost.
- Adjustment decision will come in welfare terms to decrease the wedge between evasion and consumption decision on the consumer versus government optimal allocation.
- Benefits of a larger concealment cost: restricts incentive of mimickers \( (\hat{U}_t^2; \hat{U}_t^2; \tilde{U}_t^2) \) with respect to \( MRS^{it}_{T(.)},c \).
- Costs: It reduces the margin for evasion of the mimickers \( \tilde{U}_t^2 \) that would otherwise act reducing the distortion on labor supply. That would close the gap between own \( MRS^{it}_{T(.)},m^i_T \) and mimicker's.
\[
\sigma_t^1 = \left[1 - MRS_{T(\cdot),x}^{1t}m_T^1\right] \left[\left(\frac{\eta_t^*}{\eta_t^1}\right) \widehat{MRS}_{z,c}^{2t} \phi \left(\frac{l_t^1}{1-e_t^2}\right) - \left(\frac{1}{\gamma_t n_t^1 w_t^1 l_t^1}\right) \Omega_{\sigma}^{1t} \left(\frac{\partial L}{\partial T}\right)\right]
\]

\[
\sigma_t^2 = \left[1 - MRS_{T(\cdot),x}^{2t}m_T^2\right] \left[\left(\frac{\eta_t^* \phi(1-e_t^1 l_t^1)}{(1-e_t^2)w_t^2 l_t^2 n_t^2}\right) \widehat{MRS}_{z,c}^{2t} - \left(\frac{1}{\gamma_t w_t^2 l_t^2}\right) \Omega_{\sigma}^{2t} \left(\frac{\partial L}{\partial T}\right)\right]
\]
Final Remarks

- We add to recent literature on optimal taxation with positional preferences.

- We also dialogue with warm-glow donation literature having agents with pro-social behavior with respect to their relative tax payments.

- We expect to have positive atmospheric externality related to the taxes collected (tax conformity), but....

- Such tax preference act reducing the optimal marginal income tax on both skilled and unskilled individuals.

- A careful introduction of evasion imposes additional self-selection constraints to be respected. A relative tax concerned individual still should (under some assumptions) face lower marginal labor and capital income taxes.
To do list

- Numerical Exercise to quantify the tax attitudes effect.

- Endogenous $m^i$ so that the government could influence such parameter $m^i()$.

- Work in progress: comments and suggestions are welcome.