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1 Proposition 2 for alternative measure of inequality

Consider the same two-period model without discounting analyzed in the paper. In this section we derive Proposition 2 for the case in which long-run inequality is measured by the variance of equilibrium expected long run after-tax *income*, which differs from the variance of V_i since the latter includes the total expected cost of labor supply and the former does not. Specifically, define by $s(w_i^k, x_i^k, t^k)$ the after-tax *income* of an agent with productivity w_i^k who chooses labor supply x_i^k in period k when tax rate is t^k. Then, when such agent chooses her labor supply optimally (as defined by Lemma 1), she obtains

$$s_i^*(w_i^k, t^k) = (1-t^k)\left(1-t^k+\frac{t^k}{n}\right)\cdot(w_i^k)^2+\frac{t^k}{n}\left(1-t^k+\frac{t^k}{n}\right)\cdot Z =$$
$$= \left(1-t^k+\frac{t^k}{n}\right)\cdot\left((1-t^k)(w_i^k)^2+\frac{t^k}{n}Z\right)$$

Then, the expected long run after-tax income of agent with productivity w_i^1 in period $k = 1$ will be denoted by $G_i(w_i^1, t^{1^*}, t^{2^*})$, and can be written as

$$\begin{aligned}G_i(w_i^1, t^{1^*}, t^{2^*}) = s_i^*(w_i^1, t^{1^*}) + p\Big[(1-\mu)s_i^*(w_i^1, t^{1^*}) + \frac{\mu}{n}\sum_{j=1}^{n} s_i^*(w_j, t^{1^*})\Big] + \\ + (1-p)\Big[(1-\mu)s_i^*(w_i^1, t^{2^*}) + \frac{\mu}{n}\sum_{j=1}^{n} s_i^*(w_j, t^{2^*})\Big] = \\ = (1 + p(1-\mu)) \cdot s_i^*(w_i^1, t^{1^*}) + p\mu \cdot \bar{s}^*(t^{1^*}) + \\ + (1-p)(1-\mu) \cdot s_i^*(w_i^1, t^{2^*}) + (1-p)\mu \cdot \bar{s}^*(t^{2^*})\end{aligned}$$

where

$$\bar{s}^*(t^{1^*}) = \left(1 - t^{1^*} + \frac{t^{1^*}}{n}\right) \cdot \frac{1}{n} Z \quad \text{and} \quad \bar{s}^*(t^{2^*}) = \left(1 - t^{2^*} + \frac{t^{2^*}}{n}\right) \cdot \frac{1}{n} Z$$

Then,

$$\bar{G}(t^{1^*}, t^{2^*}) = (1 + p) \cdot \bar{s}^*(t^{1^*}) + (1-p) \cdot \bar{s}^*(t^{2^*})$$

and

$$\text{var}\left(G_i(w_i, t^{1^*}, t^{2^*})\right) = \frac{1}{n}\sum_{j=1}^{n}\left(G_j(w_j, t^{1^*}, t^{2^*}) - \bar{G}(t^{1^*}, t^{2^*})\right)^2$$

$$\begin{aligned}G_j(w_j, t^{1^*}, t^{2^*}) - \bar{G}(t^{1^*}, t^{2^*}) = (1 + p(1-\mu)) \cdot (s_j^*(w_j, t^{1^*}) - \bar{s}^*(t^{1^*})) + \\ + (1-p)(1-\mu)(s_j^*(w_j, t^{2^*}) - \bar{s}^*(t^{2^*}))\end{aligned}$$

$$\Rightarrow \text{var}(G_i(w_i, t^{1^*}, t^{2^*})) = \frac{1}{n} \cdot \sum_{j=1}^{n} \begin{pmatrix} (1 + p(1-\mu))[s_i^*(w_i, t^{1^*}) - \bar{s}^*(t^{1^*})] + \\ + (1-p)(1-\mu)[s_i^*(w_i, t^{2^*}) - \bar{s}^*(t^{2^*})] \end{pmatrix}^2$$

$$s_i^*(w_i, t^{1^*}) - \bar{s}^*(t^{1^*}) = \left(1 - t^{1^*} + \frac{t^{1^*}}{n}\right) \cdot (1 - t^{1^*}) \cdot \left((w_i)^2 - Z\right)$$

$$s_i^*(w_i, t^{2^*}) - \bar{s}^*(t^{2^*}) = \left(1 - t^{2^*} + \frac{t^{2^*}}{n}\right) \cdot (1 - t^{2^*}) \cdot \left((w_i)^2 - Z\right)$$

$$\begin{aligned}\text{var}(G_i(w_i, t^{1^*}, t^{2^*})) = \begin{bmatrix} (1 + p(1-\mu))\left(1 - t^{1^*} + \frac{t^{1^*}}{n}\right) \cdot (1 - t^{1^*}) + \\ + (1-p)(1-\mu)\left(1 - t^{2^*} + \frac{t^{2^*}}{n}\right) \cdot (1 - t^{2^*}) \end{bmatrix}^2 \cdot \frac{1}{n}\sum_{j=1}^{n}\left((w_j)^2 - Z\right)^2 = \\ = \mathbb{A}(p) \cdot \frac{1}{n}\sum_{j=1}^{n}\left((w_j)^2 - Z\right)^2\end{aligned}$$

Thus,

$$\operatorname{sign}\left(\frac{\partial \operatorname{var}(G_i(w_i, t^{1^*}, t^{2^*}))}{\partial p}\right) = \operatorname{sign}\left(\frac{\partial \mathbb{A}(p)}{\partial p}\right)$$

$$\begin{aligned}
\frac{\partial \mathbb{A}(p)}{\partial p} = 2 \Bigg(&(1+p(1-\mu))\left(1-t^{1^*}+\frac{t^{1^*}}{n}\right)\cdot(1-t^{1^*}) + (1-p)(1-\mu)\left(1-t^{2^*}+\frac{t^{2^*}}{n}\right)\cdot(1-t^{2^*})\Bigg)\cdot \\
&\left[(1-\mu)\left(1-t^{1^*}+\frac{t^{1^*}}{n}\right)\cdot(1-t^{1^*}) + (1+p(1-\mu))\cdot\left(-2+\frac{1}{n}+2t^{1^*}-\frac{2t^{1^*}}{n}\right)\frac{\partial t^{1^*}}{\partial p} - \right. \\
&\left. -(1-\mu)\cdot\left(1-t^{2^*}+\frac{t^{2^*}}{n}\right)\cdot(1-t^{2^*}) + (1-p)(1-\mu)\cdot\left(-2+\frac{1}{n}+2t^{2^*}-\frac{2t^{2^*}}{n}\right)\frac{\partial t^{2^*}}{\partial p}\right]
\end{aligned}$$

We know from Corollary 2 that $\frac{\partial t^{1^*}}{\partial p} < 0$ and $-2 + \frac{1}{n} + 2t^{1^*} - \frac{2t^{1^*}}{n} < 0$, since $t^{1^*} < 1$. Therefore, the second term in the square brackets is positive. Moreover, t^{2^*} does not depend on p, as the second is the last period of the game, thus, the last term in the square brackets is zero. Further,

$$\left(1-t^{1^*}+\frac{t^{1^*}}{n}\right)\cdot(1-t^{1^*}) > \left(1-t^{2^*}+\frac{t^{2^*}}{n}\right)\cdot(1-t^{2^*})$$

Therefore, the expression in the square brackets is positive, which completes the proof that

$$\operatorname{sign}\left(\frac{\partial \operatorname{var}(G_i(w_i, t^{1^*}, t^{2^*}))}{\partial p}\right) = \operatorname{sign}\left(\frac{\partial \mathbb{A}(p)}{\partial p}\right) > 0$$

Q.E.D.

2 Two-period Model with Discounting

Consider a variant of the model discussed in the paper except that all agents face the same common discount factor $\delta \in (0,1)$. That is, the overall utility of agent i is $V_i = u_i^1 + \delta \cdot u_i^2$. Discounting does not affect the optimal choice of labor in any period. Neither it affects the tax rate that would emerge in period $k = 2$ if there is a re-vote on the level of redistribution. Thus, as before $u_i^*(w_i^1, t)$ is given by

$$u_i^*(w_i^1, t) = \frac{(w_i^1)^2}{2}\cdot\left((1-t)^2 - \frac{t^2}{n^2}\right) + Z\frac{t}{n}\left(1-t+\frac{t}{n}\right)$$

and a two-period value of agent i associated with the current tax rate t when first-period productivity is w_i^1 and when the second-period equilibrium tax rate is t^{2^*} is

$$\begin{aligned}
V_i(w_i^1, t, t^{2^*}) = u_i^*(w_i^1, t) + \delta p\Big[(1-\mu)u_i^*(w_i^1, t) + \frac{\mu}{n}\sum_{j=1}^{n} u_j^*(w_j^1, t)\Big]& \\
+\, \delta(1-p)\Big[(1-\mu)u_i^*(w_i^1, t^{2^*}) + \frac{\mu}{n}\sum_{j=1}^{n} u_j^*(w_j^1, t^{2^*})\Big]& \qquad \text{for } i = 1, ..., n
\end{aligned}$$

From this, we can obtain the ideal tax rate for each productivity agent by solving the first-order condition with respect to t and verifying the second-order conditions. Note that as before the third term in the expression above is a constant with respect to t, thus,

$$\frac{\partial V_i(w_i,t,t^{2^*})}{\partial t} = (1+\delta p(1-\mu))\frac{\partial u_i^*(w_i,t)}{\partial t} + \delta p\mu\frac{\partial \bar{u}_i^*(t)}{\partial t} \leq 0$$

where

$$\frac{\partial u_i^*(w_i,t)}{\partial t} = \left(\frac{Z}{n} - w_i^2\right) - t\frac{n^2-1}{n^2}\cdot\left(\frac{2Z}{n+1} - w_i^2\right).$$

and

$$\bar{u}^*(t) = \frac{Z}{2n}\left((1-t)^2 - \frac{t^2}{n^2}\right) + Z\frac{t}{n}\left(1-t+\frac{t}{n}\right) \Rightarrow \frac{\partial \bar{u}^*(t)}{\partial t} = -Z\frac{(n-1)^2}{n^3}t$$

Then, the first-order condition can be written as

$$\frac{\partial V_i(w_i,t,t^{2^*})}{\partial t} = (1+\delta p(1-\mu))\left[\frac{Z}{n} - w_i^2 - t\cdot\frac{n^2-1}{n^2}\cdot\left(\frac{2Z}{n+1} - w_i^2\right)\right] - \delta p\mu Z\frac{(n-1)^2}{n^3}t$$
$$= (1+\delta p(1-\mu))\left(\frac{Z}{n} - w_i^2\right) - t\frac{n^2-1}{n^2}\left[(1+\delta p(1-\mu))\left(\frac{2Z}{n+1} - w_i^2\right) + \delta p\mu\frac{Z(n-1)}{n(n+1)}\right] \leq 0$$

The second-order condition is

$$\frac{\partial^2 V_i(w_i,t,t^{2^*})}{\partial t^2} = -\frac{n^2-1}{n^2}\left[(1+\delta p(1-\mu))\left(\frac{2Z}{n+1} - w_i^2\right) - \delta p\mu\frac{Z(n-1)}{n(n+1)}\right]$$

When $w_i^2 < \frac{Z}{n}$ we have interior solution because there exists $t^{1^*} \in (0,1)$ such that

$$\frac{\partial V_i(w_i,t,t^{2^*})}{\partial t}|_{t=t^{1^*}} = 0 \text{ and } \frac{\partial^2 V_i(w_i,t,t^{2^*})}{\partial t^2} < 0$$

This interior solution is

$$t_i^{1^*} = \frac{n^2}{n^2-1}\frac{\frac{Z}{n} - w_i^2}{\frac{Z}{n+1}\left(2 + \frac{\delta p\mu}{1+\delta p(1-\mu)}\cdot\frac{n-1}{n}\right) - w_i^2}$$

When $w_i^2 \in \left[\frac{Z}{n}, \frac{Z}{n+1}\left(2 + \frac{\delta p\mu}{1+\delta p(1-\mu)}\cdot\frac{n-1}{n}\right)\right)$, we have $\frac{\partial^2 V_i(w_i,t)}{\partial t^2} < 0$, thus, $\max \frac{\partial V_i(w_i,t,t^{2^*})}{\partial t} = \frac{\partial V_i(w_i,t,t^{2^*})}{\partial t}|_{t=0} = \frac{1}{1-\delta p(1-\mu)}\cdot\left(\frac{Z}{n} - w_i^2\right) < 0$, thus $\frac{\partial V_i(w_i,t,t^{2^*})}{\partial t} < 0$ for all $t \in [0,1]$, which means $t^{1^*} = 0$ in this region. Finally, when $w_i^2 > \frac{Z}{n+1}\left(2 + \frac{\delta p\mu}{1+\delta p(1-\mu)}\cdot\frac{n-1}{n}\right)$, we have

$\frac{\partial^2 V_i(w_i,t,t^{2^*})}{\partial t^2} > 0$ which means that max $\frac{\partial V_i(w_i,t,t^{2^*})}{\partial t} = \frac{\partial V_i(w_i,t,t^{2^*})}{\partial t}|_{t=1} < 0$, and, therefore, $t^{1^*} = 0$ in this region as well. Combining all the conditions, we obtain

$$t_i^{1^*} = \begin{cases} \frac{n^2}{n^2-1} \cdot \frac{\frac{Z}{n} - w_i^2}{\frac{Z}{n+1}\left(2 + \frac{\delta p \mu}{1+\delta p(1-\mu)} \cdot \frac{n-1}{n}\right) - (w_i)^2} & \text{if } w_i^2 < \frac{Z}{n} \\ 0 & \text{otherwise} \end{cases}$$

Corollary 1. If $\delta > 0$ and $\mu > 0$ then higher tax persistence leads to lower equilibrium taxes in the first period.

Proof of Corollary 1.

$$\frac{\partial t^{1^*}}{\partial p} = -\frac{n^2}{n^2-1}\left(\frac{Z}{n} - w_i^2\right)\frac{Z(n-1)}{n(n+1)} \frac{\frac{\mu\delta}{(1+\delta p(1-\mu))^2}}{\left[\frac{Z}{n+1}\left(2 + \frac{\delta p \mu}{1+\delta p(1-\mu)} \cdot \frac{n-1}{n}\right) - (w_i)^2\right]^2} < 0$$

Q.E.D.

Corollary 2. If $\delta > 0$ and $p > 0$ then higher mobility leads to lower equilibrium taxes in the first period.

Proof of Corollary 2.

$$\frac{\partial t^{1^*}}{\partial \mu} = -\frac{n^2}{n^2-1}\left(\frac{Z}{n} - w_i^2\right)\frac{Z(n-1)}{n(n+1)} \frac{\frac{\delta p(1+\delta p)}{(1+\delta p(1-\mu))^2}}{\left[\frac{Z}{n+1}\left(2 + \frac{\delta p \mu}{1+\delta p(1-\mu)} \cdot \frac{n-1}{n}\right) - (w_i)^2\right]^2} < 0$$

Q.E.D.

Proposition 2. An increase in tax persistence increases inequality in the society - i.e.,

$$\frac{\partial \text{var}\left(V_i(w_i, t^{1^*}, t^{2^*})\right)}{\partial p} > 0$$

Proof of Proposition 2. Here we evaluate $\frac{\partial \text{ var}(V_i(w_i,t^{1^*},t^{2^*}))}{\partial p}$ where

$$\text{var}(V_i(w_i, t^{1^*}, t^{2^*})) = \frac{1}{n}\sum_{j=1}^{n}\left(V_j(w_j, t^{1^*}, t^{2^*}) - \bar{V}(t^{1^*}, t^{2^*})\right)^2$$

and $V_i(w_i, t^{1^*}, t^{2^*})$ is the long-run (two-period) income of agent i with productivity w_i. As we showed above $V_i(w_i, t^{1^*}, t^{2^*})$ can be written as

$$\begin{aligned}
V_i(w_i, t^{1^*}, t^{2^*}) &= (1 + \delta p(1-\mu))\, u_i^*(w_i, t^{1^*}) + \mu\delta p \cdot \frac{1}{n}\sum_{j=1}^{n} u_j^*(w_j, t^{1^*}) \\
&\quad + \delta(1-p)(1-\mu) u_i^*(w_i, t^{2^*}) + \delta(1-p)\mu \cdot \frac{1}{n}\sum_{j=1}^{n} u_j^*(w_j, t^{2^*}) \\
&= (1 + \delta p(1-\mu))\, u_i^*(w_i, t^{1^*}) + \mu\delta p \bar{u}^*(t^{1^*}) + \delta(1-p)(1-\mu) u_i^*(w_i, t^{2^*}) \\
&\quad + \delta(1-p)\mu \cdot \bar{u}^*(t^{2^*})
\end{aligned}$$

Moreover,

$$\bar{V}(t^{1^*}, t^{2^*}) = \frac{1}{n}\sum_{j=1}^{n} V_j(w_j, t^{1^*}) = (1+\delta p)\bar{u}^*(t^{1^*}) + \delta(1-p)\bar{u}^*(t^{2^*})$$

Therefore,

$$\mathrm{var}(V_i(w_i, t^{1^*}, t^{2^*})) = \frac{1}{n}\sum_{j=1}^{n} \begin{pmatrix} (1+\delta p(1-\mu))\big[u_i^*(w_i, t^{1^*}) - \bar{u}^*(t^{1^*})\big] \\ \quad + \delta(1-p)(1-\mu)\big[u_i^*)(w_i, t^{2^*}) - \bar{u}^*(t^{2^*})\big] \end{pmatrix}^2 \qquad (1)$$

Then one obtains:

$$u_i^*(w_i, t^{1^*}) - \bar{u}^*(t^{1^*}) = -\frac{1}{2}\left(\frac{Z}{n} - w_i^2\right)\left((1-t^{1^*})^2 - \frac{(t^{1^*})^2}{n^2}\right)$$

and

$$u_i^*(w_i, t^{2^*}) - \bar{u}^*(t^{2^*}) = -\frac{1}{2}\left(\frac{Z}{n} - w_i^2\right)\left((1-t^{2^*})^2 - \frac{(t^{2^*})^2}{n^2}\right)$$

Substituting this back into equation (1) gives:

$$\begin{aligned}
\mathrm{var}(V_i(w_i, t^{1^*}, t^{2^*})) &= \frac{1}{n}\sum_{j=1}^{n} \begin{pmatrix} \dfrac{1+\delta p(1-\mu)}{2}\left(\dfrac{Z}{n} - w_i^2\right)\left((1-t^{1^*})^2 - \dfrac{(t^{1^*})^2}{n^2}\right) \\ + \dfrac{\delta(1-p)(1-\mu)}{2}\left(\dfrac{Z}{n} - w_i^2\right)\cdot\left((1-t^{2^*})^2 - \dfrac{(t^{2^*})^2}{n^2}\right) \end{pmatrix}^2 \\
&= \frac{1}{2n} \begin{pmatrix} (1+\delta p(1-\mu))\left((1-t^{1^*})^2 - \dfrac{(t^{1^*})^2}{n^2}\right) \\ + (\delta(1-p)(1-\mu))\left((1-t^{2^*})^2 - \dfrac{(t^{2^*})^2}{n^2}\right) \end{pmatrix}^2 \sum_{j=1}^{n}\left(\frac{Z}{n} - w_i^2\right)^2 \\
&\equiv \frac{1}{2n}\mathbb{A}(p,\mu,\delta)\sum_{j=1}^{n}\left(\frac{Z}{n} - w_i^2\right)^2
\end{aligned}$$

where

$$\mathbb{A}(p,\mu,\delta)=\left((1+\delta p(1-\mu))\left((1-t^{1^*})^2-\frac{(t^{1^*})^2}{n^2}\right)+(\delta(1-p)(1-\mu))\left((1-t^{2^*})^2-\frac{(t^{2^*})^2}{n^2}\right)\right)^2$$

Thus, to determine the sign of the $\frac{\partial \mathrm{var}\left(V_i(w_i,t^{1^*},t^{2^*})\right)}{\partial p}$ we need to determine the sign of $\frac{\partial \mathbb{A}(p,\mu,\delta)}{\partial p}$.

$$\begin{aligned}\frac{\partial \mathbb{A}(p,\mu,\delta)}{\partial p} &= 2\left((1+\delta p(1-\mu))\left((1-t^{1^*})^2-\frac{(t^{1^*})^2}{n^2}\right)+(\delta(1-p)(1-\mu))\left((1-t^{2^*})^2-\frac{(t^{2^*})^2}{n^2}\right)\right)\\ &\cdot\begin{bmatrix}\delta(1-\mu)\left((1-t^{1^*})^2-\frac{(t^{1^*})^2}{n^2}\right)+(1+\delta p(1-\mu))\left(-2(1-t^{1^*})-\frac{2t^{1^*}}{n^2}\right)\frac{\partial t^{1^*}}{\partial p}\\ -\delta(1-\mu)\left((1-t^{2^*})^2-\frac{(t^{2^*})^2}{n^2}\right)\end{bmatrix} > 0\end{aligned}$$

because $\frac{\partial t^{1^*}}{\partial p}<0$ as we have established in Corollary 1 and

$$(1-t^{1^*})^2-\frac{(t^{1^*})^2}{n^2} > (1-t^{2^*})^2-\frac{(t^{2^*})^2}{n^2}$$

This completes the proof that long-run inequality increases with an increase in tax persistence, Q.E.D.

3 Infinite Horizon Model with Discounting

The society consists of $n>1$ infinitely-lived agents. Otherwise the model is the same as in the two-period model presented in the text albeit all agents face common discount factor $\delta\in(0,1)$. Given that, in our model, the distribution of productivity types and the parameters that govern the likelihood of mobility and re-voting on tax policy do not change over time, agents' optimal behavior is time-independent. Thus, to ease the exposition, we suppress the superscript k, which denotes the period of the game.

Optimal labor supply of an agent is characterized by the same formulas described in Lemma 1 for the two-period model. This is because agents choose labor supply after they learn their productivity and can perfectly adjust it in every period. Thus, for a given a tax rate t, an agent with productivity w_i supplies $x_i^*=\left(1-t+\frac{t}{n}\right)w_i$.

Next, we characterize preferences for redistribution for each productivity level, assuming that all agents choose their labor supply optimally. Because of the stationarity of the problem, with the distribution of agent types constant over time, the tax rate in the event of a tax regime change will always be t^*, which is derived from simultaneously solving the dynamic program for all n productivity types. The equilibrium value of t^* will generally depend on δ, p and μ. Each agent type, w_i, will have a long-run value associated with the current tax rate, denoted by $V_i(w_i, t)$. This generates a system of n equations of the following form:

$$\begin{aligned} V_i(w_i,t) = u_i^*(w_i,t) + \delta p \left[(1-\mu)V_i(w_i,t) + \frac{\mu}{n}\sum_{j=1}^{n} V_j(w_j,t) \right] \\ + \delta(1-p)\left[(1-\mu)V_i(w_i,t^*) + \frac{\mu}{n}\sum_{j=1}^{n} V_j(w_j,t^*) \right] \quad \text{for } i = 1,...,n, \end{aligned} \tag{2}$$

where $u_i^*(w_i, t)$ is the optimal current period utility of an agent with productivity w_i if the current tax rate is t. Using Lemma 1, one obtains:

$$u_i^*(w_i,t) = \frac{w_i^2}{2}\cdot\left((1-t)^2 - \frac{t^2}{n^2}\right) + Z\cdot\frac{t}{n}\left(1 - t + \frac{t}{n}\right), \tag{3}$$

as the utility of a type w_i agent in the current period if the current tax rate is t.

This system of equations is then solved to obtain $\{V_i(w_i, t)\}_{i=1,...,n}$. From this, one obtains the ideal tax rate for each agent type by solving the first-order condition with respect to t, and verifying second-order conditions.

Proposition 1. *The ideal tax rate of agent i with productivity w_i is*

$$t_i^*(w_i) = \begin{cases} \dfrac{n^2}{n^2-1}\cdot\dfrac{\frac{Z}{n}-(w_i)^2}{\frac{Z}{n+1}\left(2+\frac{\mu\delta p}{1-\delta p}\cdot\frac{n-1}{n}\right)-(w_i)^2} & \textit{if } (w_i)^2 < \dfrac{Z}{n} \\ 0 & \textit{otherwise.} \end{cases}$$

Proof of Proposition 1: The proof follows the same steps as the proof of Proposition 1 for the two-period model.

When agents are completely impatient, $\delta = 0$, or there is no mobility, $\mu = 0$, or taxes are non-persistent, $p = 0$, the model reduces to the one-period model analyzed in Agranov and Palfrey (2015). At the other extreme, if agents are perfectly patient - i.e., $\delta \to 1$ - and tax rates are fully persistent - i.e., $p = 1$ - then for all $\mu > 0$, we obtain that all agents, including those with the lowest current productivity, prefer no taxation and no redistribution since the expectation of future mobility outweighs the benefits of redistribution today, regardless of their current economic status: all they care about is their long-run average after-tax income, which is maximized at $t = 0$. In intermediate cases, $\delta \in (0, 1)$ and $p \in (0, 1)$, agents with relatively low current productivity (below the mean) demand positive taxes, while those with relatively high productivities prefer zero taxation since their contribution to total collected taxes exceeds the tax refund that they would receive from redistribution. One can show that each voter's indirect preferences over tax rates are single-peaked, so the equilibrium tax rate depends on the preferences of the median-productivity agent: since $(w_m)^2 < \frac{Z}{n}$, the majority rule equilibrium is a positive tax rate coinciding with the ideal tax rate of the median voter - i.e., t_m^*.

The comparative statics results obtained in the two-period model hold true in the infinite-horizon model as well.

Corollary 1. *If $\delta > 0$ and $\mu > 0$, then higher tax persistence leads to lower equilibrium taxes.*

Proof of Corollary 1:

$$\frac{\partial t^*}{\partial p} = -\frac{n^2}{n^2-1} \cdot \frac{\left(\frac{Z}{n} - (w_m)^2\right)}{\left(\frac{Z}{n+1}\left[2 + \frac{\mu\delta p}{1-\delta p} \cdot \frac{n-1}{n}\right] - w_m^2\right)^2} \cdot \frac{Z}{n+1} \cdot \frac{\mu\delta(n-1)}{(1-\delta p)^2 n} < 0$$

All else equal, the longer the current tax regime lasts (the higher the p), the more likely currently low-productivity agents are to transition upwards and improve their economic status, in which case they would enjoy lower tax rates, Q.E.D.

Corollary 2. *If $\delta > 0$ and $p > 0$, then higher mobility leads to lower equilibrium taxes.*

Proof of Corollary 2:

$$\frac{\partial t^*}{\partial \mu} = -\frac{n^2}{n^2-1} \cdot \frac{\left(\frac{Z}{n} - (w_m)^2\right)}{\left(\frac{Z}{n+1}\left[2 + \frac{\mu\delta p}{1-\delta p} \cdot \frac{n-1}{n}\right] - w_m^2\right)^2} \cdot \frac{Z}{n+1} \cdot \frac{\delta p(n-1)}{(1-\delta)n} < 0$$

Agents with relatively low productivity today have a greater chance of upward mobility in the future when reshuffling probability μ increases, all else equal. Observe that there is also a counteracting effect by the higher types' prospect of downward mobility, which one might think would put upward pressure on the equilibrium tax rate. However, there is no such effect in equilibrium because the median voter's income is always below the average income, Q.E.D.

The comparative statics results with respect to inequality are also similar to the two-period model.

Proposition 2. *An increase in tax persistence increases inequality in the society - i.e.,*

$$\frac{\partial var(V_i(w_i, t^*))}{\partial p} > 0.$$

Proof of Proposition 2: The proof follows the same steps as the proof of Proposition 2 for the two-period model.

3.1 Productivity trends

Suppose that (real) wages increase at rate $\alpha > 1$. That is, if there were no mobility then $w_i^2 = \alpha w_1^1$, for every $i = 1, ..., n$. The value function for a voter i with wage w_i in period 1 is:

$$\begin{aligned} V_i(w_i, t; \alpha) &= u_i^*(w_i, t) + \delta p \left[(1-\mu) u_i^*(\alpha w_i, t) + \frac{\mu}{n} \sum_{j=1}^{n} u_i^*(\alpha w_j, t) \right] \\ &\quad + \delta(1-p) \left[(1-\mu) u_i^*(\alpha w_i, t^{2^*}) + \frac{\mu}{n} \sum_{j=1}^{n} u_j^*(\alpha w_j, t^{2^*}) \right] \qquad (4) \end{aligned}$$

where

$$u_i^*(w_i, t) = \frac{(w_i)^2}{2} \left((1-t)^2 - \frac{(t)^2}{n^2} \right) + Z \frac{t}{n} \left(1 - t + \frac{t}{n} \right)$$

and therefore:

$$\begin{aligned} u_i^*(\alpha w_j, t) &= \frac{(\alpha w_j)^2}{2} \left((1-t)^2 - \frac{(t)^2}{n^2} \right) + \alpha^2 Z \frac{t}{n} \left(1 - t + \frac{t}{n} \right) \\ &= \alpha^2 u_i^*(w_j, t). \end{aligned}$$

Thus, equation (4) can be rewritten as:

$$\begin{aligned} V_i(w_i, t; \alpha) &= u_i^*(w_i, t) + \alpha^2 \delta p \left[(1-\mu) u_i^*(w_i, t) + \frac{\mu}{n} \sum_{j=1}^{n} u_i^*(w_j, t) \right] \\ &\quad + \alpha^2 \delta(1-p) \left[(1-\mu) u_i^*(w_i, t^{2^*}) + \frac{\mu}{n} \sum_{j=1}^{n} u_j^*(w_j, t^{2^*}) \right]. \qquad (5) \end{aligned}$$

This is exactly the same as before except δ is replaced with $\delta' = \alpha^2 \delta$. Recall that when $\alpha = 1$ the first period equilibrium tax rate is:

$$t_i^{1^*}(w_m) = \frac{n^2}{n^2 - 1} \cdot \frac{\frac{Z}{n} - (w_m)^2}{\frac{Z}{n+1} \left(2 + \frac{\mu \delta p}{1 + \delta p (1-\mu)} \cdot \frac{n-1}{n} \right) - (w_m)^2}.$$

Hence:

$$t_i^{1^*}(w_m; \alpha) = \frac{n^2}{n^2 - 1} \cdot \frac{\frac{Z}{n} - (w_m)^2}{\frac{Z}{n+1} \left(2 + \frac{\mu \alpha^2 \delta p}{1 + \alpha^2 \delta p (1-\mu)} \cdot \frac{n-1}{n} \right) - (w_m)^2}$$

which is strictly positive and strictly decreasing in α, since $\frac{\mu \delta p}{1 + \delta p (1-\mu)}$ is increasing in δ, Q.E.D.

The comparative statics results also remain unchanged. Also note that equilibrium tax rates will also decrease relative to the one-period model even for some $\alpha < 1$.

3.2 Random shocks to aggregate productivity

Suppose that (real) each wage can either increase by a factor of $(1+\epsilon)$ or decrease by a factor of $(1-\epsilon)$, with equal probability. That is, for each i, if there were no mobility then $w_i^2 = (1+\epsilon)w_i^1$ with probability 1/2 and $w_i^2 = (1-\epsilon)w_i^1$ with probability 1/2, for some $\epsilon \in (0,1)$, and these shocks are independent.[1] In this case, the value function for a voter i with wage w_i in period 1 is:

$$\begin{aligned}
V_i(w_i,t;\epsilon) &= u_i^*(w_i,t) + \delta p \left[\begin{array}{l} (1-\mu)\left(\frac{u_i^*((1+\epsilon)w_i,t)}{2} + \frac{u_i^*((1-\epsilon)w_i,t)}{2}\right) \\ + \frac{\mu}{n}\sum_{j=1}^{n}\left(\frac{u_i^*((1+\epsilon)w_j,t)}{2} + \frac{u_i^*((1-\epsilon)w_j,t)}{2}\right) \end{array} \right] \\
&\quad + \delta(1-p) \left[\begin{array}{l} (1-\mu)\left(\frac{u_i^*((1+\epsilon)w_i,t_2^*)}{2} + \frac{u_i^*((1-\epsilon)w_i,t_2^*)}{2}\right) \\ + \frac{\mu}{n}\sum_{j=1}^{n}\left(\frac{u_i^*((1+\epsilon)w_j,t_2^*)}{2} + \frac{u_i^*((1-\epsilon)w_j,t_2^*)}{2}\right) \end{array} \right] \\
&= u_i^*(w_i,t) + (1+\epsilon^2)\delta p \left[(1-\mu)u_i^*(w_i,t) + \frac{\mu}{n}\sum_{j=1}^{n} u_i^*(w_j,t) \right] \\
&\quad + (1+\epsilon^2)\delta(1-p) \left[(1-\mu)u_i^*(w_i,t^{2^*}) + \frac{\mu}{n}\sum_{j=1}^{n} u_j^*(w_j,t^{2^*}) \right]
\end{aligned}$$

This is exactly the same as equation as before except δ is replaced with $\delta' = (1+\epsilon^2)\delta$. Recall that when $\alpha = 1$ the first period equilibrium tax rate is:

$$t_i^{1^*}(w_m) = \frac{n^2}{n^2-1} \cdot \frac{\frac{Z}{n} - (w_m)^2}{\frac{Z}{n+1}\left(2 + \frac{\mu\delta p}{1+\delta p(1-\mu)} \cdot \frac{n-1}{n}\right) - (w_m)^2}.$$

Hence:

$$t_i^{1^*}(w_m,\epsilon) = \frac{n^2}{n^2-1} \cdot \frac{\frac{Z}{n} - (w_m)^2}{\frac{Z}{n+1}\left(2 + \frac{\mu(1+\epsilon^2)\delta p}{1+(1+\epsilon^2)\delta p(1-\mu)} \cdot \frac{n-1}{n}\right) - (w_m)^2}$$

which is strictly positive and strictly decreasing in ϵ, since $\frac{\mu\delta p}{1+\delta p(1-\mu)}$ is increasing in δ, Q.E.D.

The comparative statics results also remain unchanged.

[1]The analysis below is identical if instead one assumes all the productivity shocks are perfectly correlated.

4 Instructions for M2 treatment

Welcome. You are about to participate in an experiment on decision-making and you will be paid for your participation in cash privately at the end of the session. Do not talk to or attempt to communicate with other participants during the session. Please take a minute and turn off all electronic devices, especially phones. During the experiment you are not allowed to open or use any other applications on these laboratory computers, except for the interface of the experiment.

The experiment consists of three parts. Each part is self-contained. Before the beginning of each part, we will read out loud detailed instructions about that part.

The currency in this experiment is called points. All payoffs are denominated in this currency. Points that you earn during the experiment will be converted into US dollars. We will sum up your earnings in all three parts of the experiment, add a $7 participation fee for the completion of the experiment and pay it to you in private in cash at the end of the experiment. The money you earn will depend on your decisions and the decisions of others.

Part I. In this part of the experiment you are endowed with 100 points. Your task is to choose how many points you wish to invest in a risky project. You can choose any number of points between 0 and 100 points, inclusive. Those points not invested are yours to keep.

<u>The Risky Project</u>: there is a 50% chance that the risky project will be successful. If it is successful, you receive 2.2 times the amount you chose to invest. If the project is unsuccessful, you lose the amount invested. To determine if the project is successful or not the computer will flip a computerized fair coin. If the coin will land on heads then the project is successful and if it will land on tails then project is unsuccessful.

<u>Example:</u> Say you invested X out of 100 points in the risky project, where X represents your choice. (Recall, it can be any number between 0 and 100, inclusive.) Then, with probability 50% you will receive $(100 - X) + 2.2 * X$ points and with probability 50% you will receive $(100 - X) + 2.2 * 0 = 100 - X$ points.

In this part of the experiment 50 points = $1. Your earnings in this task will be added to your earnings in the next part of the experiment.

Please write down the station number you are sitting in:

Please write down how many points you want to invest in the risky project:

(this can be any number between 0 and 100)

Part II. There will be 10 rounds in this part of the experiment. Before the first round begins, all participants will be randomly divided into groups of 5 participants each. In addition, each participant will be assigned a value V. There are two possible values of V: $V = 5$ and $V = 10$. We have 25 participants in this experiment: fifteen participants will be assigned value of $V = 5$ and ten participants will be assigned value of $V = 10$. In all groups, there will be three members with V=5 and two members with $V = 10$.

Your group assignment and your assigned value V will stay the same for all 10 rounds of Part II. The computer does these assignments randomly. Your assigned value will be displayed on your computer screen.

Your task in each round is to choose an investment level. Your investment can be any number between 0 and 15 (up to two decimal places). If you choose investment X and your value is V, this will generate your total investment earnings equal to $V \cdot X$. For example, if $V = 10$ and $X = 4$, then your total investment earnings in that round are computed by $10 * 4 = 40$ points.

However, investment is not free. The cost to you of investing X is equal to $0.5 \cdot X^2$. In the example just given, the investment of $X = 4$ costs you 8 points. These costs are subtracted from your earnings at the end of the round.

A portion of your investment earnings for the round will be taxed. If the tax rate is $T\%$, then your taxes will equal $T\%$ of your investment earnings, and you will keep the remaining $(100 - T)\%$ of your investment earnings. The amount you keep after taxes is called your after tax investment earnings. Recall the example just given, where $V = 10$ and $X = 4$, and your total investment earnings is 40 points. If the tax rate is 50% then your taxes equal 20 points and your after tax investment earnings, which are yours to keep, equal 20 points.

The taxes everyone in your group pays are not thrown away. Rather, the total taxes collected from all members of your group are rebated to the group members in equal shares at the end of each round. For example, if the total amount collected as taxes from all members of the group equals 100 points, then each member will receive back one fifth of this amount, or 20 points. Note that all members of the group are taxed at the same tax rate in a round, and all group members share equally the total taxes collected in the group.

To summarize, your total earnings in a round depend on the value V assigned to you at the beginning of round 1, your investment X, tax rate T and the tax rebate, which is determined by the total taxes collected from all members in your group. Your total earnings in a round consist of three parts:

Total Earnings = Your After Tax Investment Earnings − Your Cost of Investment + Tax Rebate

- After-Tax Earnings = $(1 - T)\%$ of $V \cdot X$
- Cost of Investment = $0.5 \cdot X^2$
- Tax Rebate = $\frac{1}{5}$·Taxes collected in your group
- Taxes collected in your group = T·Investment Earnings of 1 + T·Investment Earnings of 2 + T·Investment Earnings of 3 + T·Investment Earnings of 4 + T·Investment

Earnings of 5

Thus, your total earnings for the round in this example would be equal to $20-8+20=32$ points.

At the beginning of each round a tax rate T will be displayed on your screen. This tax rate is the same for all members in your group. However, your group's tax rate may change from round to round. After observing your group's tax rate, you and all other members of your group will be asked to independently choose your investment levels, which can be any non-negative number between 0 and 15 up to two decimal places.

The screen has a calculator to assist you in deciding how much to invest in each round. The calculator calculates hypothetical earnings for each of the two possible values that your group members have ($V=5$ and $V=10$). In particular, this calculator calculates your hypothetical earnings in different scenarios.

Here is how the calculator works. In the first row of the calculator, you need to choose value for which you would like to calculate hypothetical earnings. There is a drop-down menu with two options $V=5$ and $V=10$. The second row of the calculator displays your group's tax rate. In the third row of the calculator, you need to enter a hypothetical investment level and a hypothetical amount of total taxes from the other four members of your group in the fourth row. The last row (the fifth one) then displays total earnings of a member with chosen value if those hypothetical amounts were the actual amounts in that round. You can use the up and down buttons to try calculate payoffs in different hypothetical scenarios. (If you enter these manually instead of using the buttons, you will need to press "Enter" for the calculator to work.) The numbers you enter in the calculator are just hypothetical and do not affect yours or someone else's actual earnings. Remember that your and everyone's else tax rebate consist of one fifth of the taxes collected from one own investment earnings and one fifth of the taxes collected from the other group members.

After everyone has entered their investment decision and clicked on the "Submit" button the computer will display your investment decision as well as the investment decisions made by the all other members of your group. It will appear in a table that also shows their values. All of your own information is highlighted in Red on the table. It will also show your earnings for the round, in points, broken down into its three components: after tax investment income, cost of investment, and tax rebate. All of this information is also summarized at the bottom of your screen in the history panel. The history panel will keep track of everything that has happened in your group in all rounds, highlighting your own information in red.

When round 1 is finished, we will move on directly to the next round. The next round will be identical to the previous round except your group's new tax rate T will be posted on your screen.

At the end of Part II, we will sum up all the points that you earned in all 10 rounds of Part II and will convert them into US dollars using the rate 40 points = \$1. Summary:

- There are 10 rounds in this part of the experiment.
- At the beginning of the first round, each participant is assigned one of the two possible values: fifteen participants get value $V = 5$ and ten participants get value $V = 10$.
- Also, at the beginning of the first round, participants are randomly matched into groups of five members each with three members with value $V = 5$ and two members with $V = 10$.
- Group assignment and value assignment stays the same for the whole duration of this part of the experiment.
- At the beginning of each round, all members of the group observe the tax rate for this round.
- After that, all group members are asked to choose an investment level (number between 0 and 15 with up to two decimal places).
- After that, decisions and earnings for that round are displayed on your screen and recorded in the history panel.

Part III. Part III of the experiment consists of 10 matches, and each match consists of 2 rounds. The group assignments do not change. They are exactly the same as in Part II and you will remain in the same group in all rounds of all matches in Part III.

In the first round of all 10 matches, you will have the same value that you had in Part II of the experiment. Your value in the second round of a match may be the same or may be different from the one you had in the first round. It is determined as follows: with probability 40% your value in the second round of a match will be the same as your value in the first. However, with probability 60% the computer will randomly assign values between the members of your group, so that there are still three members with value $V = 5$ and two members with value $V = 10$. In other words, if you have value $V = 5$ in the first round, then with probability $40\% + 60\% \cdot \frac{3}{5} = 76\%$ you will keep $V = 5$ in the second round and with probability $60\% \cdot \frac{2}{5} = 24\%$ you will get the new value of $V = 10$ for the second period. If, on the other hand, you have value $V = 10$ in the first round, then with probability $40\% + 60\% \cdot \frac{2}{5} = 64\%$ you will keep $V = 10$ in the second round and with probability $60\% \cdot \frac{3}{5} = 36\%$ you will get the new value of $V = 5$ for the second round. Your value in each round of each match will be clearly displayed on the computer screen.

Each round in Part III is similar to Part II, except that in each match at the beginning of the first round all members of the group are asked to submit a proposal for the tax rate T.

While you are deciding what tax rate you wish to propose, the screen has a calculator to assist you in deciding. You can calculate hypothetical earnings for a round as follows. First choose from the drop-down menu for which value you are calculating hypothetical earnings. In the second row, enter a hypothetical group tax rate. In the third row, enter a hypothetical investment decision of the member with the value chosen by you in the first row. Finally, in the fourth row, enter a hypothetical total taxes amount from the other four members of your group. You can use the up and down buttons to try different hypothetical levels. The fifth (and the last) row then displays what would be total earnings for the chosen member in a round if those hypothetical amounts were the actual amounts. (If you enter these manually instead of using the buttons, you will need to press "Enter" for the calculator to work.) The numbers you enter in the calculator are just hypothetical and do not affect your actual earnings.

After each member of your group has submitted a proposed tax rate, the third highest of the five proposed tax rates is implemented as your group's tax rate in both rounds of this match. The chosen tax rate will be clearly posted on your screen and is the same for everyone in your group. You will then be asked to choose an investment decision (as you did in the Part II of the experiment). Your investment decision can be any number between 0 and 15 up to two decimal places. You may use the calculator to explore different hypothetical scenarios, as you did in Part II.

Once everyone in your group have submitted their investments, your payoff for the first round of a match will be determined and we move on to the second round of the current match.

At the beginning of the second round, you will observe your value for the second round, which may be the same as your value in the first round or different. It is determined based on the mechanism described above. Then you will be reminded of the tax rate chosen by your group in the first round. After that you will be prompted to choose your investment level. After all members of your group choose their investment level, you will observe your earnings in the second round.

After the first match is over, we will move on to the second match, in which you will first observe your value for the first round and then will be asked to submit a proposal for the tax rate for your group. The third highest proposal will be implemented as your group tax rate in both rounds of a match.

To remind you, as before, your earnings in each round depend on your value, your chosen investment X, tax rate T and the tax return, which is determined by the total taxes collected from all members in your group.

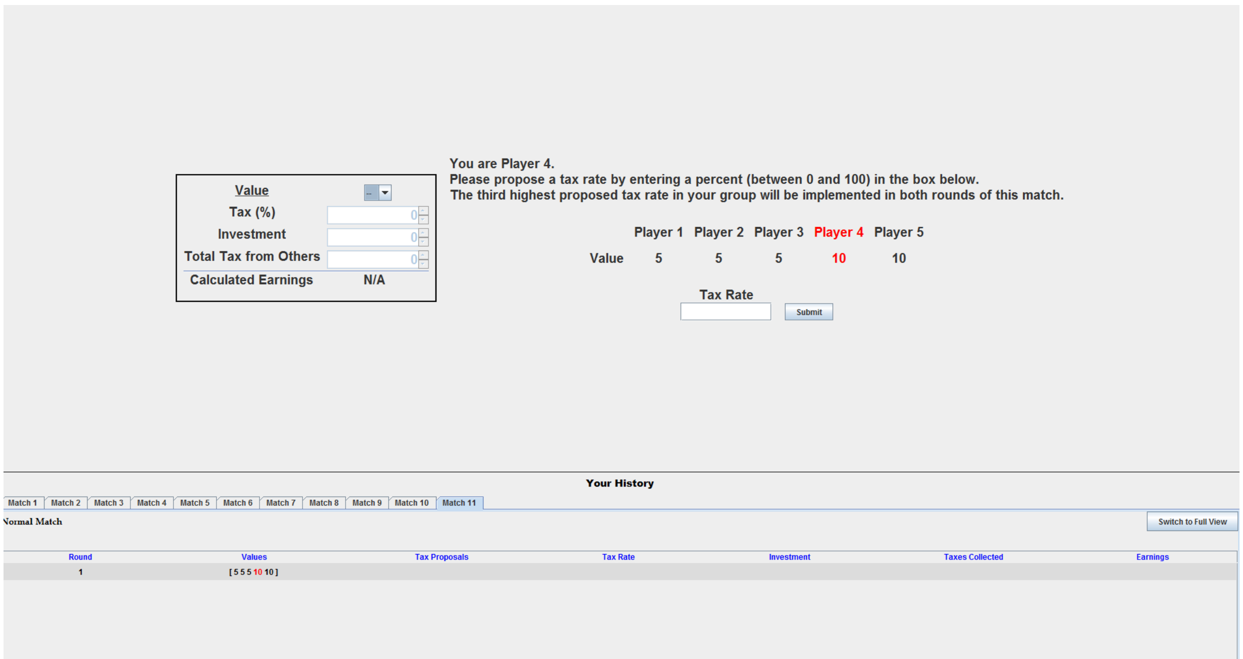
$$\text{Total Earnings} = \text{Your After Tax Investment Earnings} - \text{Your Cost of Investment} + \text{Tax Rebate}$$

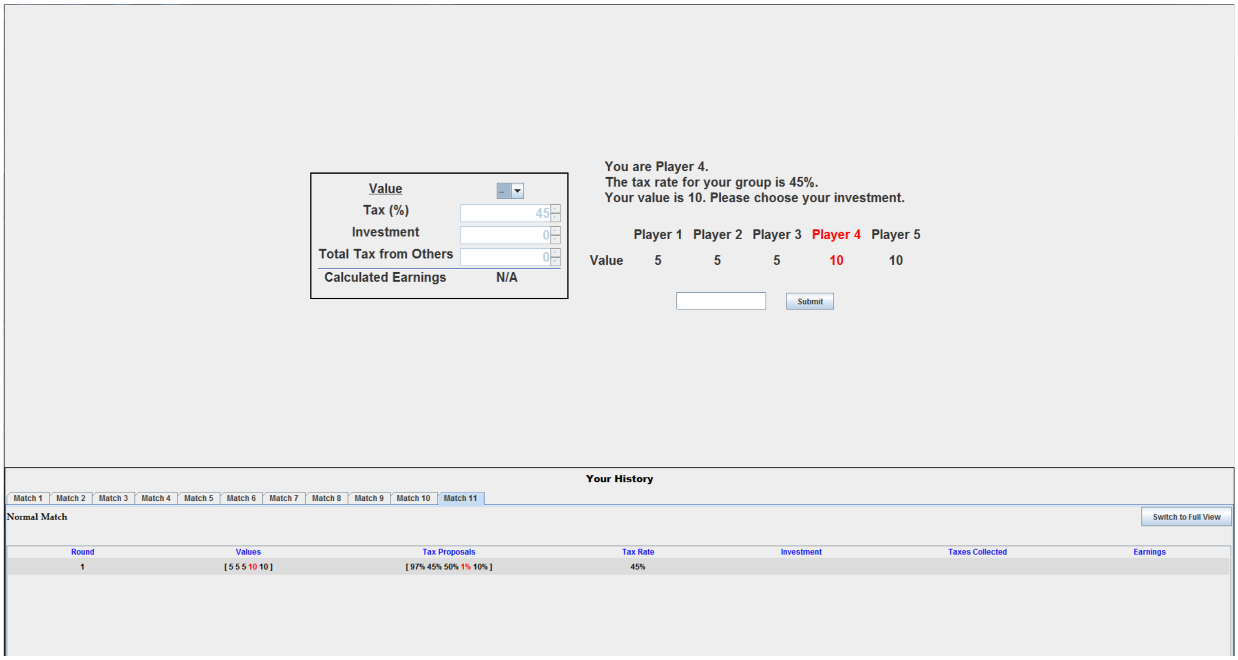
- After-Tax Earnings $= (1 - T)\%$ of $V \cdot X$
- Cost of Investment $= 0.5 \cdot X^2$
- Tax Rebate $= \frac{1}{5} \cdot$Taxes collected in your group

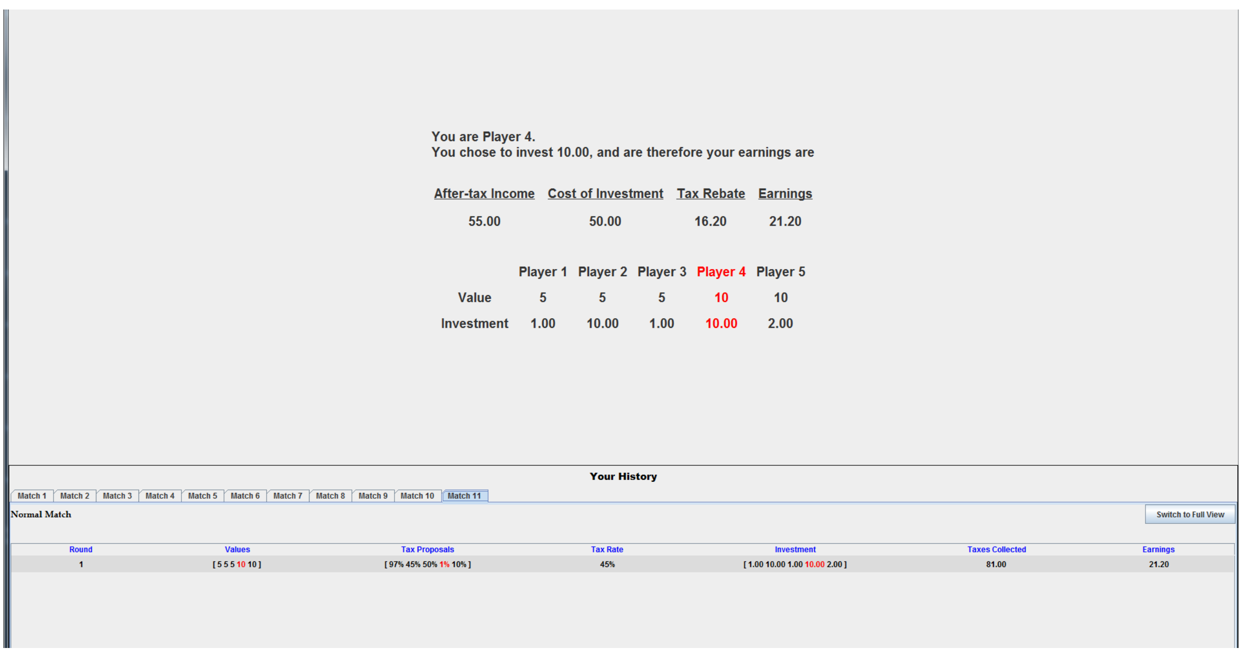
- Taxes collected in your group = T·Investment Earnings of 1 + T·Investment Earnings of 2 + T·Investment Earnings of 3 + T·Investment Earnings of 4 + T·Investment Earnings of 5

At the end of Part III, we will sum up all the points that you earned in all 10 matches of Part III and will convert them into US dollars using the rate 40 points = \$1.

4.1 Screenshots for M2 treatment




Value
Tax (%)
45
Investment
0
Total Tax from Others
0
Calculated Earnings
N/A
You are Player 4.
The tax rate for your group is 45%.
Your value is 10. Please choose your investment.
Player 1 Player 2 Player 3 Player 4 Player 5
Value 5 5 5 10 10
Submit
Your History
Match 1 Match 2 Match 3 Match 4 Match 5 Match 6 Match 7 Match 8 Match 9 Match 10 Match 11
Normal Match
Switch to Full View
Round Values Tax Proposals Tax Rate Investment Taxes Collected Earnings
1 [5 5 5 10 10] [97% 45% 50% 1% 10%] 45%


You are Player 4.
You chose to invest 10.00, and are therefore your earnings are
After-tax Income Cost of Investment Tax Rebate Earnings
55.00 50.00 16.20 21.20
Player 1 Player 2 Player 3 Player 4 Player 5
Value 5 5 5 10 10
Investment 1.00 10.00 1.00 10.00 2.00
Your History
Match 1 Match 2 Match 3 Match 4 Match 5 Match 6 Match 7 Match 8 Match 9 Match 10 Match 11
Normal Match
Switch to Full View
Round Values Tax Proposals Tax Rate Investment Taxes Collected Earnings
1 [5 5 5 10 10] [97% 45% 50% 1% 10%] 45% [1.00 10.00 1.00 10.00 2.00] 81.00 21.20

5 Additional Analysis

5.1 Labor Supply Decisions

The next two tables, replicate analysis discussed in the main text of the paper using different regression specifications. In particular, Table 1 presents estimates of the normalized labor supply functions for each period of the game separately using the data from all 10 repetitions of the game in each treatment. Table 2 pools both periods of the game together, focuses on the last 5 games and clusters standard errors at the individual (rather than at the group) level.

Table 1: Estimated Normalized Labor Supply in Each Period (all 10 matches)

	NM treatment		M1 treatment	
	const (se)	slope (se)	const (se)	slope (se)
Poor (period 1)	0.98 (0.02)	-0.73 (0.06)	1.02 (0.02)	-0.79 (0.06)
Poor (period 2)	0.99 (0.01)	-0.78 (0.04)	0.99 (0.02)	-0.71 (0.05)
Rich (period 1)	0.99 (0.04)	-0.77 (0.07)	1.01 (0.03)	-0.84 (006)
Rich (period 2)	0.96 (0.04)	-0.71 (0.06)	1.01 (0.02)	-0.82 (0.06)
	M2 treatment		M3 treatment	
	const (se)	slope (se)	const (se)	slope (se)
Poor (period 1)	1.00 (0.03)	-0.65 (0.08)	0.97 (0.02)	-0.68 (0.07)
Poor (period 2)	0.99 (0.03)	-0.60** (0.09)	0.99 (0.02)	-0.72 (0.06)
Rich (period 1)	1.03 (0.03)	-0.90 (0.06)	0.99 (0.01)	-0.75 (0.03)
Rich (period 2)	0.94** (0.03)	-0.72 (0.09)	0.92** (0.02)	-0.67 (0.07)

Notes: Random effects TOBIT regressions of normalized labor supply decisions regressed on implemented tax rates and a constant, using data from each of the periods separately. Robust standard errors are clustered at the group level and reported in the parenthesis. Normalized labor supply is labor supply divided by productivity. ** indicates that theoretically predicted value of a coefficient falls outside of 95% confidence interval of estimated coefficients.

5.2 Proposed Taxes

Figure 1 depicts cumulative distribution functions of tax rates proposed by poor and rich agents in the experienced matches in each treatment separately. Few patterns are apparent from these figures and statistical analysis. First, poor subjects propose higher tax rates than rich subjects in every single treatment. Regression analysis, in which we regress proposed taxes on a dummy variable that indicates rich subject while clustering standard errors by individuals confirms this result at the standard 5% significance level. Second, poor subjects propose lower tax rates when taxes are persistent as in M2 and M3 treatments compared with treatments in which taxes can be adjusted in every period of the game as in NM and M1 treatments. This can be seen from left panel of Figure 1

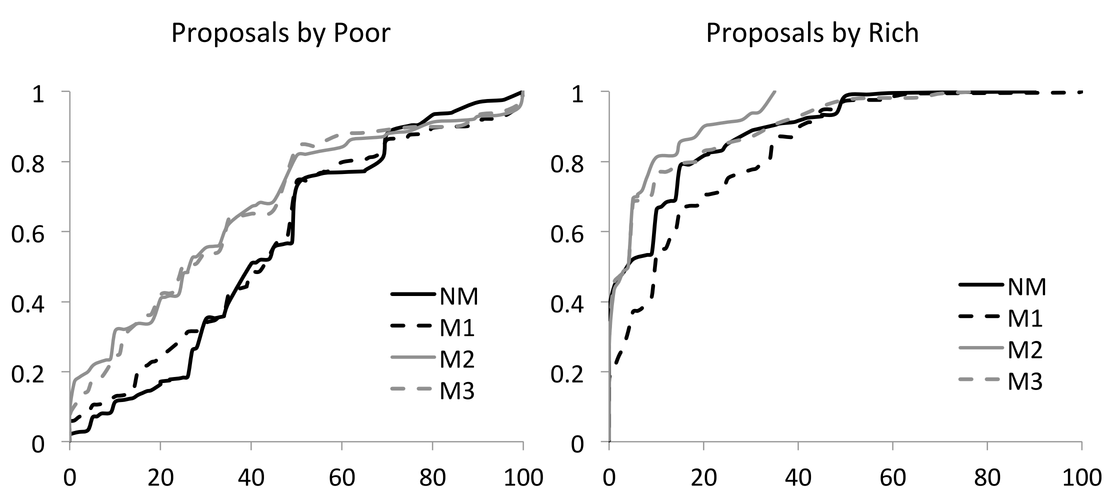
Table 2: Estimated Normalized Labor Supply in Experienced Matches

	NM treatment		M1 treatment	
	const (se)	slope (se)	const (se)	slope (se)
Poor	0.96 (0.02)	-0.73 (0.05)	0.98 (0.02)	-0.66** (0.04)
Rich	0.96 (0.03)	-0.69 (0.06)	0.98 (0.02)	-0.77 (0.05)
	M2 treatment		**M3 treatment**	
	const (se)	slope (se)	const (se)	slope (se)
Poor	1.02 (0.02)	-0.76 (0.08)	0.98 (0.02)	-0.73 (0.05)
Rich	0.96 (0.02)	-0.72 (0.08)	0.96 (0.02)	-0.76 (0.04)

Notes: Random effects TOBIT regressions of normalized labor supply decisions regressed on implemented tax rates and a constant, using data from each of the periods separately. Robust standard errors are clustered at the subject level and reported in the parenthesis. Normalized labor supply is labor supply divided by productivity. ** indicates that theoretically predicted value of a coefficient falls outside of 95% confidence interval of estimated coefficients.

as distributions of taxes in NM and M1 treatments first-order stochastically dominates distributions of taxes in M2 and M3 treatments. Regression analysis corroborates this conclusion with significant difference detected between average proposed taxes in NM and M2 treatments ($p = 0.058$) and NM versus M3 treatments ($p = 0.045$). The comparison of average taxes between M1 and M2 or M3 treatments are not statistically significant despite first-order stochastically dominance relation.

Figure 1: CDFs of Taxes Proposed by Poor and Rich in Experienced Matches

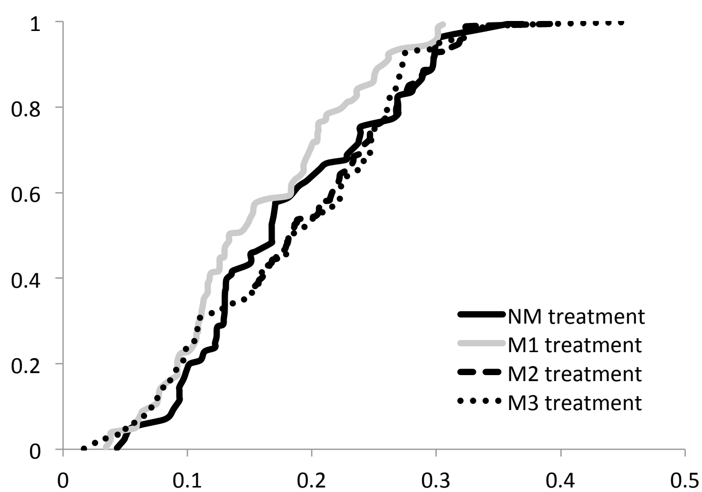


Notes: For NM and M1 treatments, we pool together data from period 1 and period 2 of the game.

5.3 Inequality

Here we consider treatment effects on inequality levels using a GINI coefficient instead of variance of long-run payoffs. Figure 3 depicts cumulative distribution functions of estimated GINI coefficients across treatments using the data from the last five matches. To compare GINI coefficients between two treatments we use regression analysis, in which we regress estimated GINI on a constant and a dummy variable that indicates one of the considered treatments, while clustering observations by groups. We conclude that there is a significant difference between two treatments if estimated coefficient on the indicator function is statistically different from zero at the standard 5% significance level and report p-value associated with it.

Figure 2: CDFs of GINI Coefficients in Experienced Matches



Notes: For NM and M1 treatments, we pool together data from period 1 and period 2 of the game.

Similar to Hypothesis 4 described in the main text of the paper, for parameters used in our experiments, for a given level of mobility, higher tax persistence leads to higher inequality as measured by GINI coefficients. This prediction is born out in our data as the distribution of GINI coefficients observed in M1 treatment first-order stochastically dominates the one observed in M2 treatment, which differ only in the stickiness of the tax regime. Regression analysis confirms prediction this with $p = 0.025$.

The same is true for Hypothesis 5, according to which higher mobility leads to lower inequality both when taxes are persistent and when taxes are re-voted in every period. Consistent with this prediction, we observe that inequality decreases when mobility is introduced in the absence of tax persistence (NM versus M1 treatments) albeit the effect is not statistically significant ($p > 0.10$). Similarly, when taxes are persistent, distribution of GINI coefficients observed in M3 treatment first-order stochastically dominates the one in M3 treatment, which indicates that higher mobility promotes equality even when tax regime is sticky. However, this shift is not significant according to regression analysis.

5.4 Risk Attitudes

As described in the paper, we administered standard incentivized risk attitude task to all our subjects in order to see whether risk attitudes affect individual behavior in the M2 and M3 treatments. Theoretically, there should be no effect of risk attitudes in the NM and M1 treatments, in which taxes are not persistent.

Figure 3 shows that there were no systematic differences between risk attitudes of poor and rich subjects in the M2 and M3 treatments. Statistical tests confirm that with $p > 0.10$.

Figure 3: Kernel Distributions of Risky Investments by First-Period Poor and Rich Subjects in M2 and M3 Treatments.

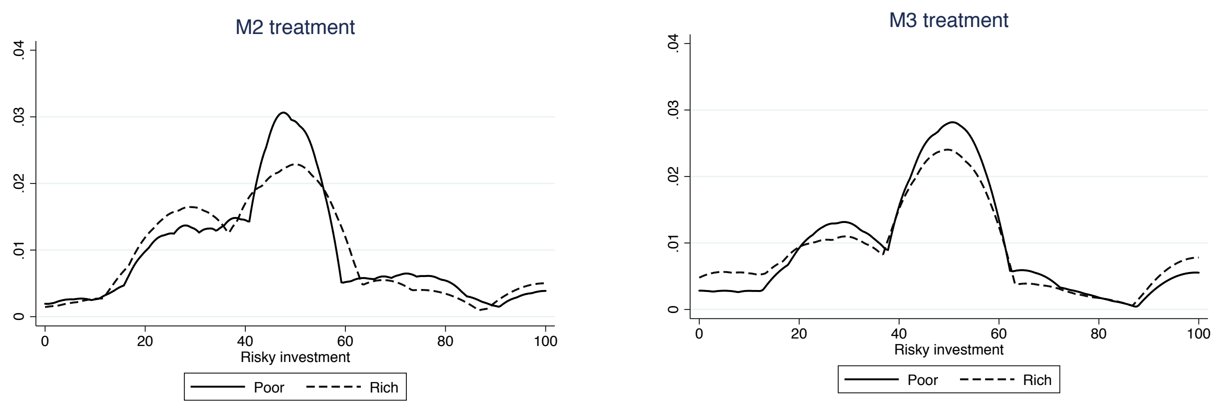
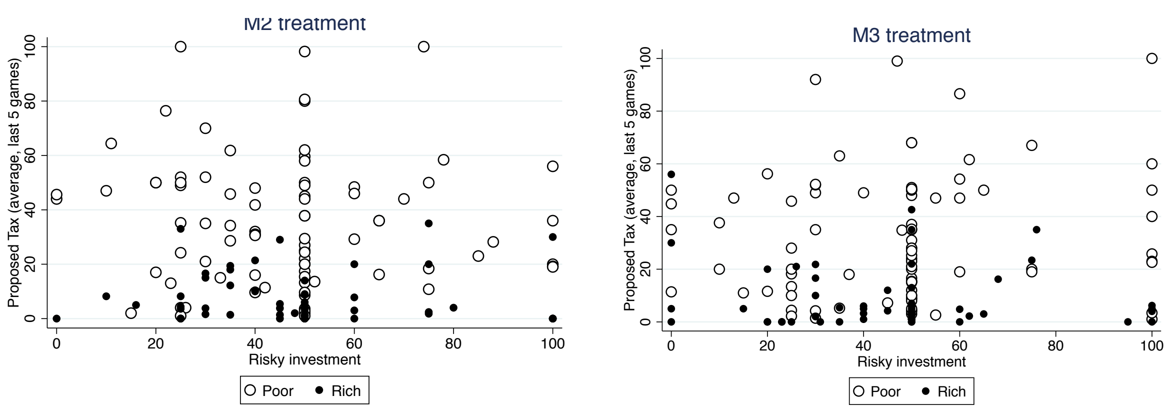


Figure 4 depicts tax rates proposed by poor and rich agents in M2 and M3 treatments plotted against risk attitudes of these subjects. A clear picture emerges from this: risk attitudes are not a good predictor of tax rates proposed by subjects.

Figure 4: Tax Rates Proposed by First-Period Poor and Rich Subjects in M2 and M3 Treatments.



5.5 Treatment differences in the last 3 matches

In this section we repeat the analysis conducted in the main manuscript while focusing on the last 3 repetitions of the game in each treatment. This exercise is meant to show that our qualitative conclusions do not change if one focuses on the different subset of the data which corresponds to the 'post-learning period'.

Table 3 depicts average implemented tax rates in each treatment as well as inequality levels in each treatment using the data from the last 3 games in each experimental session.

Table 3: Average Implemented Tax Rates and Inequality Levels in the last 3 games

	NM ($t^* = 0.47$) $(p, \mu) = (0, 0)$ mean (se)	M1 ($t^* = 0.47$) $(p, \mu) = (0, 0.6)$ mean (se)	M2 ($t^* = 0.38$) $(p, \mu) = (1, 0.6)$ mean (se)	M3 ($t^* = 0.30$) $(p, \mu) = (1, 1)$ mean (se)
Average Tax Rates				
Period 1	0.37 (0.05)	0.32 (0.04)		
Period 2	0.35 (0.05)	0.30 (0.03)		
Periods 1&2 pooled	0.36 (0.05)	0.31 (0.03)	0.21 (0.03)	0.16 (0.03)
Inequality Levels	360.10 (89.13)	287.78 (60.98)	464.81 (54.37)	429.20 (50.11)

Notes: t^* depicts the theoretically predicted equilibrium tax rate in each treatment. For M2 and M3 treatments, tax rates in two periods are the same by design. We list those in the line that corresponds to Periods 1&2 pooled data. Robust standard errors are in parentheses, clustered by group. Inequality levels are measured by the variance of agents' total income, which consists of agents' utilities in both periods of the game including after-tax income, costs of labor and tax rebates.

Hypothesis 1 states that when taxes are not persistent, prospects of income mobility should have no effect on equilibrium tax rates. To evaluate this hypothesis, we compare implemented tax rates in NM and M1 treatments. Statistical analysis reveals that this hypothesis is borne out in our data when using the implemented tax rates in the last 3 games in each session ($p = 0.404$).

Hypothesis 2 states that for a fixed mobility, higher tax persistence should lead to lower equilibrium tax rates. To evaluate this hypothesis, we compare implemented tax rates in M1 and M2 treatments. This hypothesis is also borne out in our data in the last 3 games ($p = 0.036$).

Hypothesis 3 asserts that for a fixed and positive level of tax persistence p, an increase in mobility parameter μ should lead to lower equilibrium tax rates. To evaluate this hypothesis, we compare implemented tax rates in M2 and M3 treatments. While there is no statistical difference between average implemented tax rates in M2 and M3 treatments in the last 3 games ($p = 0.167$), we find that median implemented tax rate in M3 is significantly lower than median implemented tax rate in M2 ($p = 0.057$).

Hypothesis 4 states that for a fixed mobility level μ, an increase in the persistence of taxes leads to higher inequality. Comparison between inequality levels in M1 and M2 treatments confirms this prediction using the data from the last 3 games ($p = 0.034$).

Finally, Hypothesis 5 predicts that higher mobility should lead to lower inequality both when taxes are persistent and when taxes are re-voted in every period. Both for the case of non-persistent taxes and for the case of persistent taxes, our data indicates that inequality levels are lower when mobility is higher, consistent with theoretical hypothesis. However, the effect is quite small in magnitude and not statistically significant at the standard significance level ($p = 0.503$ for the comparison between NM and M1 treatments and $p = 0.630$ for the comparison between M2 and M3 treatments).