

Where do voter preferences come from? Why is it that poor voters, who are typically in the majority, do not always vote in large redistributive programs?

An aspiration based explanation (Benabou and Ok (2001))

Prospect of Upward Mobility (POUM)
hypothesis

- Parents today, knowing their current income express preferences over redistribution from or towards their children.
- Redistribution takes the form of a linear tax rate.
- If y is the parent's income, the child's income is $f(y)$. f is increasing
- The initial distribution of wealth is F .
- Then a parent would prefer high taxes, if and only if

$$f(y) < \int f(y)dF$$

- The person with the current mean income, μ , prefers low taxes as long as

$$f(\mu) = f\left(\int y dF\right) > \int f(y) dF$$

By Jensen's inequality, this is true whenever f is concave. This proves:

- **Claim 1:** As long as f is strictly concave, the person who is indifferent between high and low taxes, is poorer than the mean
- Denote by y_f this (indifferent) person for any function f .
- Then if g is less concave than f then

$$f(y_f) = \int f(y) dF = \int h(g(y)) dF$$

where h is a concave function.

- Therefore

$$f(y_f) < h\left(\int g(y) dF\right) = h(g(y_g)) = f(y_g).$$

This implies $y_f < y_g$. Which gives us:

- **Claim 2:** The more concave the function, the poorer is the marginal voter.
- This immediately tells us that if the same concave transition is applied several times (i.e. the target period is further in the future), the effective transition is more concave and therefore the poorer is the marginal voter.

- **Claim 3:** Longer horizons lead to poorer marginal voters.
- With stochastic transitions, the same result holds as long as we focus on the expected transition function.
- We can therefore have situations where the median voter is much poorer than the mean but there is still no redistribution. According to their calculations in 1969 and in 1979, 64% of the population was below the mean but almost half could be against redistribution with a 14-21 year horizon.

A Learning based explanation (Piketty (1995))

- Piketty (1995) makes a much more radical break with the traditional literature. He starts with the premise that everyone in the economy has the same innate social preference. They all want to choose the tax rate τ to maximize a static Rawlsian social maximand: $\int_{\mathbf{L}} U(c(i))di$, where \mathbf{L} is the set of the worst off people in the economy.
- People live for one period. They are asked about their preferred tax rate after that period's incomes have been realized. The rate applies to the next period. Therefore the social maximand is defined over the outcomes for the poor in the next period ("tomorrow's children").

- There are two income levels in this economy y_0 and y_1 , $y_1 > y_0$. The probability that someone ends up with income y_1 depends on his parent's income and his own effort:

$$\Pr\{y_t = y_1 | e, y_{t-1} = y_0\} = \pi_0 + \theta e,$$

$$\Pr\{y_t = y_1 | e, y_{t-1} = y_1\} = \pi_1 + \theta e, \pi_1 > \pi_0 >$$
 Let H_t denote the share of the richer people at time t .
- Utility is linear-quadratic:

$$U(y, e) = E[c] - \frac{1}{2}e^2.$$
 There is no saving so $c = y(1 - \tau) + \tau Y$, where τ is the tax rate and Y is the average income. This immediately implies that e is chosen to maximize

$$eE[\theta](y_1 - y_0)(1 - \tau) - \frac{1}{2}e^2 + \text{a constant},$$
 which implies that

$$e = E[\theta](1 - \tau)(y_1 - y_0) \equiv e(E(\theta), \tau).$$
 Taxes have a disincentive effect while higher estimates of θ make people work harder.
- The setting we are interested in is one where no one knows the true values of π_1, π_0 and θ (which are π_1^*, π_0^* and θ^*). Instead people have beliefs about them: Denote these by $\mu_{it}(\pi_1, \pi_0, \theta)$.

- People in this economy do not all have the same beliefs. However it is convenient to assume that they simply assume that other people have the same beliefs as they do, though in fact there are differences in beliefs. We will return to this issue later. Given these assumptions the choice of the optimal tax rate maximizes

$$\begin{aligned}
& E_{\mu_{it}}[(1 - \tau)y_0 + (1 - \tau) \cdot \\
& (\pi_0 + \theta e(E_{\mu_{it}}[\theta], \tau))(y_1 - y_0) \\
& + \tau[y_0 + (\pi_0 + \theta e(E_{\mu_{it}}[\theta], \tau))(y_1 - y_0) + \\
& (\pi_1 - \pi_0)(y_1 - y_0)H]] - \frac{1}{2} e(E_{\mu_{it}}[\theta])^2 \\
& = y_0 + (\pi_0 + E_{\mu_{it}}[\theta] e(E_{\mu_{it}}[\theta], \tau))(y_1 - y_0) \\
& + \tau(E_{\mu_{it}}[\pi_1] - E_{\mu_{it}}[\pi_0])(y_1 - y_0)H - \\
& \frac{1}{2} e(E_{\mu_{it}}[\theta])^2
\end{aligned}$$

which tells us that the optimal tax will be

$$\frac{(E_{\mu_{it}}[\pi_1 - \pi_0])H}{(y_1 - y_0)(E_{\mu_{it}}[\theta])^2} .$$

As one might have expected, the presence of larger numbers of rich people favors higher

taxes, as does increasing the role of background and lowering the role of effort.

- When people are asked about their preferred tax rate they report this number, which is what we will call their political stance: A lower tax rate is a more right-wing person.
- To simplify life we entirely suppress the actual determination of the tax rate by voters (Piketty deals with this issue). Instead we assume that the rate is fixed at τ .
- The setting we are interested in is one where no one knows the true values of π_1, π_0 and θ (which are π_1^*, π_0^* and θ^*). Instead people have beliefs about them: Denote these by $\mu_{it}(\pi_1, \pi_0, \theta)$.
- Beliefs evolve over time as the dynasty learns from its past experience. Each generation starts with its parent's beliefs and updates it on the basis of their own realization of income (y_1 or y_0).
- For someone who started poor and became rich in the current period,

$$\begin{aligned} & \mu_{it+1}(\pi_1, \pi_0, \theta) \\ &= \mu_{it}(\pi_1, \pi_0, \theta) \cdot \\ & \quad \frac{\pi_0 + \theta e(E_{\mu_{it}}[\theta])}{\sum(\pi'_0 + \theta' E_{\mu_{it}}[e(\theta)])\mu_{it}(\pi'_1, \pi'_0, \theta')} \end{aligned}$$

- Observe that the weight given to the truth also follows the same rule,

$$\begin{aligned} & \mu_{it+1}(\pi_1^*, \pi_0^*, \theta^*) \\ &= \mu_{it}(\pi_1^*, \pi_0^*, \theta^*) \cdot \\ & \quad \frac{\pi_0^* + \theta^* e(E_{\mu_{it}}[\theta])}{\sum(\pi'_0 + \theta' E_{\mu_{it}}[e(\theta)])\mu_{it}(\pi'_1, \pi'_0, \theta')} \end{aligned}$$

and therefore

$$\begin{aligned} & \frac{\mu_{it+1}(\pi_1, \pi_0, \theta)/\mu_{it}(\pi_1, \pi_0, \theta)}{\mu_{it+1}(\pi_1^*, \pi_0^*, \theta^*)/\mu_{it}(\pi_1^*, \pi_0^*, \theta^*)} \quad \# \\ &= \frac{\pi_0 + \theta e(E_{\mu_{it}}[\theta])}{\pi_0^* + \theta^* e(E_{\mu_{it}}[\theta])} \quad \# \end{aligned}$$

- It follows from the fact that the beliefs are a Martingale (i.e. you cannot predict changes in beliefs) and the Martingale Convergence Theorem (all bounded martingales converge)

that each dynasty's beliefs must converge to a stable belief. From it is obvious that any stationary belief must satisfy for every π_0 and θ in its support

$$\frac{\pi_0 + \theta e(E_{\mu_{it}}[\theta])}{\pi_0^* + \theta^* e(E_{\mu_{it}}[\theta])} = 1$$

- Are there many such stationary beliefs? To see note first that there are a continuum of point beliefs that are just the solutions of the equation

$$\frac{\pi_0 + \theta e(\theta)}{\pi_0^* + \theta^* e(\theta)} = 1$$

There is however no reason why the beliefs should be point beliefs. Take any θ that solves the above equation and construct a distribution over the set of $(\tilde{\theta}, \tilde{\pi}_0)$ pairs such that $E_{\mu_{it}}[\tilde{\theta}] = \theta$ and

$$\frac{\tilde{\pi}_0 + \tilde{\theta} e(\theta)}{\pi_0^* + \theta^* e(\theta)} = 1$$

- An interesting property of the stationary point beliefs is that they form a downward-sloping curve in θ, π_0 space. In other words, those who believe in fate also put a lower value on

the value of hard work.

- Moreover those whose point beliefs represent high values of θ work harder and are therefore more likely to end up with y_1 in any given period.. Therefore those who have been rich in the last two periods are disproportionately those who have high θ s. These people favor low taxes. By a similar argument, those who have been in the last two periods poor are more likely to have low θ s and favor high taxes. Those who have changed status will be in between in terms of political preferences.
- Piketty shows that these results do not depend on our odd assumption about each person totally ignoring the divergence of beliefs. It is consistent with people knowing that others have different beliefs (though it is obviously in variance with the usual idea that since everyone knows the model generating the beliefs, there cannot be common knowledge of different beliefs).
- He also shows that we can allow dynasties to learn from the experience of other dynasties as long as they only observe the evolution of H

and τ (which is chosen by the median voter).