

Class Altruism and Redistribution

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Government spending across countries

190

Brookings Papers on Economic Activity, 2:2001

Table 1. Composition of General Government Expenditure, 1999^a

Percent of GDP

Country	Total	Consumption		Subsidies	Transfers and other social benefits ^b	Gross investment
		Goods and services	Wages and salaries			
United States	35.1	5.1	9.2	0.3	10.7	3.4
European Union ^c	47.9	8.4	12.0	1.5	18.1	2.8
France	51.0	10.0	13.7	1.3	20.1	3.0
Germany	47.4	10.7	8.3	1.7	20.5	1.8
Sweden	60.2	10.3	16.7	2.0	21.1	2.5
United Kingdom	38.3	11.0	7.4	0.6	15.7	1.0

Source: Authors' calculations based on data from OECD Economic Outlook database, no. 68, 2000 (see appendix B for details).

a. Details may not sum to totals because of excluded categories.

b. Includes social security.

c. Simple average for fourteen EU countries (excludes Luxembourg).

Why taxes? why do people care about public good financing and redistribution? Two components: egoistic and altruistic.

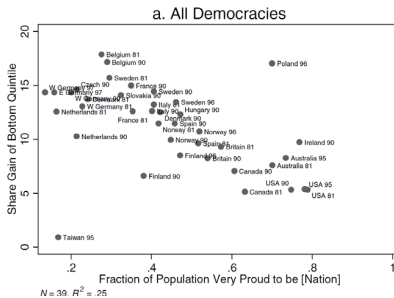
- The egoistic component has been widely studied. In a democracy, egoism tends to align the after tax median income with the average incomes/wealth. But it cannot explain the wide differences in taxes across countries.
- The altruistic motive is much less explored. Its modeling is less consensual and leave many options open.

There are large differences in tax levels across countries. As cost of taxation is similar across countries, in democracies heterogeneity comes from differences in public approval and political process. The stylized regularities favoring low tax rate and less redistribution are:

- Deviations from pure one man one vote democracy, dictatorship, lobbies, etc.
- Ethnic/racial/income fractionalisation
- Strong national pride
- ...

A puzzling regularity

FIGURE 5. Redistribution and National Identity: WVS Data



Social identity theory, pride and altruism

- Social identity is related to the "person's sense of self" and leads individuals to sympathize with other individuals belonging to some group (Tajfel and Turner, 1979, Akerlof and Kranton, 2000).
- Self identification also often correlates with pride .
- Self-identification can take a variety of forms, in particular socio-economic class.
- Self-identification leads individuals to prioritize their altruism on some sub-populations rather than others.

In this paper we explore whether differences in the patterns of altruism can explain the observed variations in tax rates.

The Model

- Income is heterogeneous via three groups; 1) poor, 2) middle income, 3) rich.
- Average income is above median income and the median income is in group 2.
- The only public policy is a non-negative tax rate, the proceed of which are redistributed lump sum to all citizens.
- Voter have egoistic and altruistic preferences as well as an ideological motive.

- The political system determines a non-negative tax rate, $0 \leq \tau \leq 1$.
- It is costly to raise taxes. We assume $C : [0, 1] \rightarrow \mathbb{R}_+$ where $C(0) = 0$, $C'(\cdot) > 0$, $C''(\cdot) > 0$, $C'(0) = 0$ and $C'(1) = 1$.
- Let the lump sum transfer be T :

$$T = \frac{1}{n} \left(\sum_{i=1}^n \tau y^i - C(\tau) n \bar{y} \right) = (\tau - C(\tau)) \bar{y} \quad (1)$$

Altruism and social classes

- A given society is subdivided in social classes, according to the patterns of (self) identification by the individuals.
- Individuals are altruistic to individuals in the same social class. We assume the following utility function for a voter in income group g and class c

$$U^g(Y^g) = x^g + B_g \left[\bar{x}_c - E_g \sum_{k \in C} \frac{|x^k - \bar{x}_c|}{n_c} \right]$$

where x^g is the after tax income, that is $x^g = (1 - \tau) y^g + (\tau - C(\tau)) \bar{y}$ and y^g is the pre-tax income of a voter in group g .

- The utility function described above gives rise to an indirect (or ex-post) utility of voters in group g associated to the tax rate τ that is noted $V^g(\tau)$. It is given by

$$V^g(Y^g | \tau) = (1 - \tau) y^g + B_g (1 - \tau) \bar{y}_c - B_g E_g (1 - \tau) \sum_{k \in C} \frac{|y^k - \bar{y}_c|}{n_c} + (1 + B_g) (\tau - C(\tau)) \bar{y} \quad (2)$$

- We assume that an individual j in group g has the following preferences over the tax rate and ideology

$$\tilde{V}^{gj}(\tau, m) = V^g(\tau) + \tilde{\sigma}_m^{gj} \quad (3)$$

- Ideology avoids uni-dimensionality, which is implausible and restrictive.
- Ideology create sufficient uncertainty in the society to model the democratic process by probabilistic voting.
- The median voter theorem fails and all parts of the society affect the democratic process and our model allows for this.

- The voting behavior of individual j can be represented by the following equation

$$\Pi^{gj}(\tau_L, \tau_R) = \left\{ \begin{array}{ll} 1 & \text{if } V^g(\tau_L) - V^g(\tau_R) > \tilde{\sigma}^{gj} \\ 1/2 & \text{if } V^g(\tau_L) - V^g(\tau_R) = \tilde{\sigma}^{gj} \\ 0 & \text{if } V^g(\tau_L) - V^g(\tau_R) < \tilde{\sigma}^{gj} \end{array} \right\} \quad (4)$$

- Parties chose policy platforms to solve the following pair of maximization problems,

$$\begin{array}{l} \text{Party } L : \underset{\tau_L}{\text{Max}} [\pi_L(\tau_L, \tau_R)] \\ \text{Party } R : \underset{\tau_R}{\text{Max}} [(1 - \pi_L(\tau_L, \tau_R))] \end{array} \quad (5)$$

The equilibrium is given by

$$\frac{d\pi_L}{d\tau_L} = \sum_j \delta^j f^j (V^j(\tau_L^*) - V^j(\tau_R^*)) \frac{dV^j(\tau_L^*)}{d\tau_L} = 0.$$

or simply

$$\frac{d\pi_L}{d\tau_L} = \sum_j \delta^j f^j (0) \frac{\partial V^j(\tau^*)}{\partial \tau} = 0. \quad (6)$$

With within-class altruism

$$\begin{aligned} & \delta^h f^h (0) \left[(1 + B_h) (-y^h + (1 - C'(\tau^*)) \bar{y}) \right] + \\ & \sum_{j \in d, w} \delta^j f^j (0) \left[-y^j - B_m \bar{y}_m + (1 + B_m) (1 - C'(\tau^*)) \bar{y} \right] + \\ & \sum_{j \in d, w} \delta^j f^j (0) \left[B_m E_m \sum_{k \in m} |y^k - \bar{y}_m| / n_m \right] = 0. \end{aligned} \quad (7)$$

We find that three factors are important for a low tax rate:

- Large universal altruism of the majority
- Large altruism of the rich minority class toward rich individuals
- Fragmentation of the poorest leading to low altruism for individuals with very low income.

Is there any evidence of this in the data to explain the low tax rate in the US compared to Europe?

Result 1: Consider a society with a majority and an elite class, the majority being composed of lower- and middle-income individuals. Then

- 1 The greater is the within-class altruism among the elite, B_e , the lower is the tax rate τ^* .
- 2 The greater is the within-class altruism among the majority, B_m , the greater is the tax rate τ^* (for sufficiently small marginal costs of taxation)

Result 2: Everything else equal, the equilibrium tax rate is an increasing function of the weight E_c placed by a social class c on within-class inequality aversion.

Result 3 Suppose that individuals have other-regarding preferences toward individuals of all income levels and there is no specific inequality aversion. Then, the greater is the universal altruism of the voters, B_j , $j = w, d, e$, the lower is the equilibrium tax rate, τ^* .

Result 4 The equilibrium tax rate is reduced when the altruism of middle-income individuals (and possibly higher-income individuals) toward lower-income individuals is reduced, as compared to the altruism toward the middle-income group.

Result 5: Suppose that individuals have other-regarding preferences toward individuals of all income levels. Let

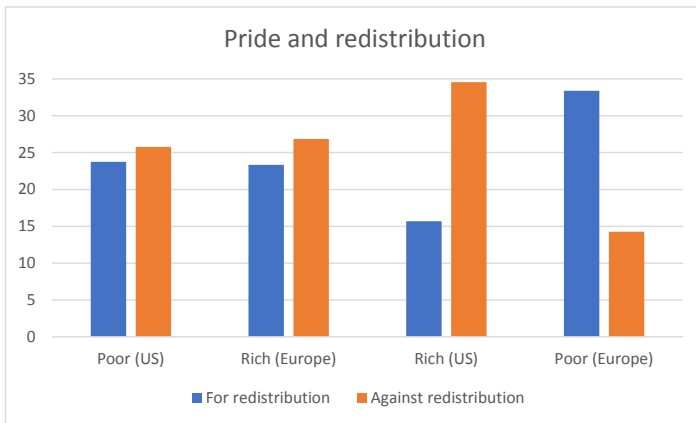
$$\bar{E} = [C'(\tau^*) \bar{y}] / \sum_{k=1}^n |y^k - \bar{y}| / n.$$

- ① For given $B_j > 0$, the greater the weight E_j placed by an income group j on universal inequality aversion, the higher is the equilibrium tax rate, τ^* .
- ② Let \bar{E} be as stated, then
 - ① For given E_j , $0 \leq E_j < \bar{E}$, the greater the universal altruism of the voters, B_j , the lower the equilibrium tax rate, τ^* .
 - ② For given E_j , $E_j \geq \bar{E}$, the greater the universal altruism of the voters, B_j , the greater is the equilibrium tax rate τ^* (if $E_j > \bar{E}$, then the effect is strict).

There is no specific data on altruism stratified, by income classes across countries. However, we identify a novel stylized fact:
Among individuals that self-report as very proud we consider

- The frequency of poor voters favoring redistribution vs those favoring no redistribution
- The frequency of rich voters favoring redistribution vs those favoring no redistribution

Proud voters: Redistribution vs Income



Behavior of Proud voters accross countries

Among proud individuals...

- For the US poor, the two frequencies are similar.
- For the US rich, the frequency of voters against redistribution is much higher.
- For the European poor, the frequency of voters for redistribution is much higher.
- For the European rich, the two frequencies are similar.

This regularity is not observed among less/not proud individuals.

Patterns of altruism

We use the responses on pride and redistribution as evidence of the patterns of altruism.

- In the US
 - the poor are universally altruistic.
 - the rich are significantly altruistic toward the rich.
- In Europe
 - the medium/poor are highly altruistic for the medium/poor.
 - the rich are universally altruistic.

This agrees with the absence of regularity among less/not proud individuals and the large overall pride of the US. In addition it also agrees with the idea that the very poor in the US are not included in the identity group of the majority.

Conclusion

The theoretical model and the survey data show that differences in the pattern of altruism induced by differences in self-identification, may explain part of the variation in tax rates across countries:

- The within-class (or parochial) self-identification and altruism of the rich Americans and middle income and poor Europeans
- The universal altruism of rich Europeans and middle income Americans
- The fragmentation of the poorest leading to low altruism from a majority of individuals toward individuals with very low income.

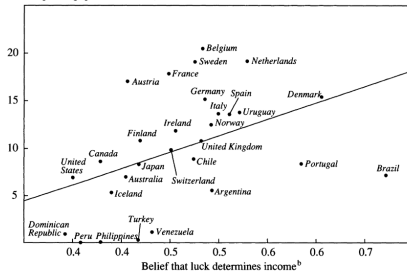
These features are in line with popular explanations of the divide in tax rates, as

- Strong unions and class identification among the European working class
- The segregation of the US poor and the view that it is their fault and strong ethnic diversity.

Redistribution and beliefs

Figure 6. Relationship between Social Spending and Belief That Luck Determines Income

Social spending (percent of GDP)^a



Source: Authors' calculations based on data from the World Values Survey.

a. Average for 1960-98.

b. Mean value for country, measured as an index from 1 to 10, with 10 indicating strongest belief. Data for 1981-97.

Pride and Income

US				Europe			
	Poor majority	Rich elite		Poor majority	Rich elite		
Proud of nationality	34.4%	24.7%	59.1%	22.35%	15.05%	37.4%	
Less proud	24.2%	16.7%	40.9%	38.9%	23.7%	62.6%	
	58.6%	41.4%		61.25%	38.75%		

Redistribution vs Income * Pride

