The Political Economy of Public Policy

Valentino Larcinese Lecture 4: Redistribution

	1913	1938	1950	1973	1999
France	8.9	23.2	27.6	38.8	52.4
Germany	17.7	42.4	30.4	42	47.6
Netherlands	8.2	21.7	26.8	45.5	43.8
United Kingdom	13.3	28.8	34.2	41.5	39.7
Arithmetic Average	12	29	29.8	42	45.9
United States	8	19.8	21.4	31.1	30.1
Japan	14.2	30.3	19.8	22.9	38.1

 Table 1.1: Total Government Expenditure as Per Cent of GDP at Current
 Prices: Western Europe, the United States and Japan, 1913–1999.

Source: Maddison (2001) Note: The data for the Netherlands is for 1913 rather than 1910.

	(1880–1930: Welfare, unemployment, pensions, health, and housing subsidies) (1960–1980: OECD old series; 1980–1990: OECD new series)											
							OECD Old		d	OECD New		
	1880	1890	1900	1910	1920	1930	1960	1970	1980	1980	1990	1995
Australia	0	0	0	1.12	I.66	2.11	7.39	7.37	12.79	10.90	I3.57	14.84
Austria	0	0	0	0	Ó	1.20	15.88	18.90	23.27	23.43	24.54	21.39
Belgium	0.17	0.22	0.26	0.43	0.52	0.56	13.14	19.26	30.38	22.45	23.11	27.13
Canada	0	0	0	0	0.06	0.31	9.12	11.80	14.96	12.91	17.38	18.09
Denmark	0.96	I.II	1.41	1.75	2.71	3.11	12.26	19.13	27.45	26.44	26.97	30.86
Finland	0.66	0.76	0.78	0.90	0.85	2.97	8.8I	13.56	19.19	18.32	24.66	31.65
France	0.46	0.54	0.57	0.81	0.64	1.05	13.42	16.68	22.55	22.95	23.70	26.93
Germany ^a	0.50	0.53	0.59			4.82	18.10	19.53	25.66	20.42	19.85	24.92
Greece ^b	0	0	0	0	0	0.07	10.44	9.03	11.06	8.67	13.95	I4.43
Ireland						3.74	8.70	11.89	19.19	16.20	18.05	18.30

 TABLE 1.2. Social Transfers in OECD Countries, 1880–1995, as Percentages of Gross Domestic Product

 at Current Prices

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Italy Japan Netherlands New Zealand Norway Portugal Spain Sweden Switzerland U.K. U.S. Median	0 0.05 0.29 0.17 1.07 0 0 0.72 0.86 0.29 0.29	0 0.11 0.30 0.39 0.95 0 0 0.85 0.85 0.83 0.45 0.39	0 0.17 0.39 1.09 1.24 0 0 0.85 1.00 0.55 0.55	0 0.18 0.39 1.35 1.18 0 0.02 1.03 1.38 0.56 0.69	0 0.18 0.99 1.84 1.09 0 0.04 1.14 1.39 0.70 0.78	0.08 0.21 1.03 2.43 2.39 0 0.07 2.59 1.17 2.24 0.56 1.66	I3.10 4.05 II.70 I0.37 7.85 I0.83 4.92 I0.21 7.26 I0.41	16.94 5.72 22.45 9.22 16.13 16.76 8.49 13.20 10.38 14.84	21.24 11.94 28.34 15.22 20.99 25.94 14.33 16.42 15.03	17.10 10.48 26.94 16.22 18.50 10.10 12.97 29.78 16.94 11.43	21.34 11.57 27.59 22.12 26.44 12.62 17.01 32.18 18.05 11.68	23.71 12.24 25.70 18.64 27.55 15.23 19.01 33.01 18.87 22.52 13.67
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Sources: Lindert (1994), OECD (1985), OECD Social Expenditure Database 1980–1996 (CD Rom). For a similar chronology, with different Note: a similar chronology with different Note: a similar chronology.

Note: $o = \text{known to be zero; blank} = \text{not yet a sovereign state; ...} = \text{known to be positive, but number unavailable. Boldface = leaders. These exceeded the median-country share by 0.5 prior to 1930 or by 2.0 after 1960.⁴ Germany = West Germany only for 1960–1990.$

^b "1995" is actually 1993.

Growing Public

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FIGURE 1.1. Social Transfers as a Share of GDP, 1880-1995.

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Figure 1.3: Size of government (in real terms) in high-income OECD countries and the others

Source: World Development Indicators 2005

Notes: Size of government (in real terms) is measured as the percentage of general government final consumption expenditure in constant local currency unit over GDP in constant local currency unit. The simple average for each group of countries is calculated. High-income OECD countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany (the unified Germany before 1990), Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, and United States. The data for year 2003 is excluded as eight out of the 23 high-income OECD countries are missing. For the sake of comparability to Figure 2a, country-years for which the data on the size of government in nominal term is unavailable are dropped.



Figure 1.5: Size of Government (in real terms) between democracies and autocracies

Source: World Development Indicators 2005 and POLITY IV

Notes: Size of government is measured as the percentage of general government final consumption expenditure in constant local currency unit over GDP in constant local currency unit. The simple average for each group of countries is calculated. A country in a given year is classified as a democracy if variable POLITY2 in the POLITY IV dataset is greater than zero and as an autocracy if POLITY2 is zero or negative. Note that a country that is a democracy in some year can be an autocracy in another year. For the sake of comparability to Figure 3a, country-years for which the data on the size of government in nominal term is unavailable are dropped.

THIS LECTURE

- Applications of the Downsian model to explain redistributive policy and the size of governments.
- By redistribution we mean explicitly redistributive programmes
- We focus on redistribution from rich to poor

Overview

- A simple model of public choice over redistribution
- Distribution and redistribution
- The size of the public sector
- Evidence

A SIMPLE MODEL

Ingredients:

- Two group of players: the Rich (R) and the Poor (P); P's income is zero
- #P > #R
- Payoff function of a generic agent R is $V_R(k;t) = (1-t)F(k) c(k)$
- Payoff function of a generic agent P is $V_P(t; k) = tF(k)$

where:

 $t \in T \equiv [0, 1]$ is the tax rate;

F(k) is the production function with $F'(k) \ge 0$, $F''(k) \le 0$

 $k \in \Re_+$ is agent R's investment;

TAX BASE ELASTICITY AND REDISTRIBUTION

Result (slavery of the rich) $F(k) = \overline{k} \Rightarrow t = 1$, i.e. "slavery of the rich" (Foley, 1967).

Let's now allow the rich to react to taxation (Roberts, 1977). Consider the following **specifications**:

$$F(k) = k \tag{4}$$

$$c(k) = \frac{1}{2}k^2\tag{5}$$

Result: The unique equilibrium of the game is given by

$$k^* = 1 - t^* \tag{6}$$

$$t^* = \frac{1}{2} \tag{7}$$

INEQUALITY AND REDISTRIBUTION

Consider now the following specifications:

$$F(k) = k + \gamma \tag{8}$$

$$c(k) = \frac{1}{2}k^2\tag{9}$$

where γ is a productivity parameter.

The unique equilibrium of the game is given by

$$k^* = 1 - t^* \tag{10}$$

$$t^* = \frac{1+\gamma}{2} \tag{11}$$

Note: P's initial endowment is zero. R's initial endowment is γ . Thus, the ex ante difference between R and P is $\gamma \Rightarrow$ can see γ as an inequality index.

Result Inequality increases redistribution.

Saint Paul & Verdier show that increased inequality can lead to social exclusion rather than more redistribution

Crucial elements:

- 1) Elasticity of investment to the tax rate
- 2) Inequality between rich and poor

How can the Rich react in practice?

1) Labour supply (Roberts, 1977; Meltzer-Richard, 1981).

2) Investment and growth (Bertola, 1993; Alesina-Rodrick, 1994; Persson and Tabellini, 1994)

3) Migration (Hindriks, 2001).



Fig. 1: Voters' preferred tax rate t as a function of their income (m=median income; μ =mean income)



Figure 2: the Laffer curve

THE SIZE OF GOVERNMENT: MELTZER & RICHARD

- de Tocqueville: the size of the government, measured by tax revenue and expenditure, depends essentially on the spread of the franchise and the distribution of wealth.
- M & R: "extension of the franchise to include more voters below mean income increase votes for redistribution and, thus, increase this measure of the size of government (...); changes in the voting rule that spread the franchise up or down the productivity distribution change the decisive voter and raise or lower the tax rate. Our hypothesis implies that changing the position of the decisive voter in the distribution of productivity changes the size of government "
- Provides a rationalization of the so-called Wagner's law.

Distribution and Redistribution

(typical density function)



EVIDENCE

• Persson-Tabellini and Alesina-Rodrick consider the theoretical relationships:

 $inequality \Rightarrow redistribution \Rightarrow economic \ performance$ (1)

Then they estimate the reduced form

more inequality
$$\Rightarrow$$
 less growth (2)

- They find that inequality is harmful for growth and deduce that this evidence support relationship 1.
- Actually, the relationship between inequality and redistribution is left as a black box.

- Perotti estimates a **structural form.** He tests separately the two implications of equation (1)
- **Result 1:** The rate of investment decreases when government transfers, and therefore distortionary taxes, increase;
- **Result 2:** Government transfers increase with the distance between the average and the median incomes.
 - Estimation results are opposite to what predicted by the theory.

Dependent variable	INV (1)	INV (2)	TRANSF (3)	INV (4)	SPI (5)
Constant	0.27 (0.02)	12.06 (4.64)	- 5.41 (-1.52)	10.83 (4.20)	22.36 (2.04)
PRIM	0.13 (0.18)	0.07 (1.64)		0.11 (3.22)	-0.16 (-1.61)
ID	1.33 (2.09)		0.39 (1.19)		-0.61 (-2.04)
IMP	8.87 (2.09)				
IMP * ID	- 0.49 (- 1.79)				
PPPIDE	-13.85 (-2.11)	- 9.96 (- 3.79)		-11.18 (-3.81)	
REVCOUP	-15.80 (-2.21)	-3.86 (-1.06)			
TRANSF		0.34 (1.83)			
GDP			0.30 (0.58)		-1.72 (-1.49)
4GE			1.26 (3.57)		
D * DEM			0.25		
'NV			× 7		0.68 (1.13)
SPI				-0.32 (-1.99)	(
S.E.E.	4.70	5.13	4.78	5.46	10.67
к~ No. obs.	0.24 26	0.53 52	0.46 52	0.44 70	0.21 70

Table 1^a

^a OLS (column (1)) and 2SLS (all other columns). *t*-statistics in parenteses.

function smoothly, i.e. when the variable *IMP* has values of 3 and 4 (Results CM1 and CM3). In addition, as capital markets become less imperfect (i.e., as the variable *IMP* increases), the rate of investment increases for a given distribution of income $(\beta_2 + \beta_3 ID)$ is positive for the range of values of the variable *ID* in the sample). This too is in accord with the theory (Result CM2). The relevant coefficients are borderline significant or significant. Notice that *REVCOUP* and *PPPIDE* have te expected sign and are significant.

Turning now to the second class of models, Eqs. (2) and (3) below capture their economic and political components respectively:

Lindert:

- "electoral variables (...) seem to show that voter turnout and insecurity of the chief esecutive do raise government spending (...)".
- "wider inequality in pre-fisc incomes significantly reduces total government spending as a share of GDP (...). The anti-spending effect of inequality is spread across all (...) spending categories except unemployment compensation, which tends to be the smallest of these spending categories. Even more importantly, the anti-spending effect of greater income inequality casts doubt on theories predicting that greater inequality would raise taxes on the rich and propertied".

We can conclude that the standard "Downsian" theory of redistribution is not well supported by data analysis.

Possible reasons and alternative research paths

- 1) Lobbying
- 2) Multi-dimensional policy space
- 3) Turnout
- 4) Information

TURNOUT

- Turnout varies widely across countries and elections
- Empirical research shows that the likelihood of voting increases with income and wealth (as well as with other characteristics)
- office-seeking parties should therefore not target the median of the income distribution but the expected median voter
- \Rightarrow Redistribution will be inferior to what predicted by the Downsian model \Rightarrow an increase in inequality does not unambigously lead to more redistribution



Fig. 4: The weighted median voter

Table 1. The impact of inequality (Gini) and turnout on social spending

	(1)	(2)	(3)
Gini index	0.011*	0.013**	-0.006
	(1.91)	(2.19)	(0.52)
Turnout		0.007***	0.014**
		(2.98)	(2.61)
Democracy indicator	0.009	-0.006	0.012
(PolityIV)	(0.44)	(0.27)	(0.21)
Real DGP per capita	-0.153*	-0.094	-0.195
(in logarithm)	(1.64)	(0.99)	(0.44)
Percentage aged above 65	0.058***	0.059***	0.167*
5 5	(2.96)	(2.99)	(2.01)
Percentage aged 15-64	0.024*	0.018	0.011
	(1.76)	(1.30)	(0.23)
Trade Openness	-0.000	-0.000	-0.011*
	(0.49)	(0.39)	(1.71)
Observations	603	600	600
Number of countries	41	41	41
R-squared (within)	0.8279	0.8292	0.8373

Dependent Variable: Social security and welfare spending as a percentage of GDP

All regressions include a constant and a lagged dependent variable. See note 19 for further details. Columns (1) and (2) report GLS random effect estimates, column (3) reports OLS fixed effect estimates. Absolute value of z-statistics in parentheses. Standard errors are robust, clustered by country. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 2. The impact of inequality (median/mean income) and turnout on social spending

a percentage of GDP			
	(1)	(2)	(3)
Median/Mean Income	-0.310	-0.382	0.547
	(0.67)	(0.83)	(0.87)
Turnout		0.007***	0.014**
		(2.73)	(2.50)
Democracy indicator	0.015	-0.010	-0.033
(PolityIV)	(0.62)	(0.37)	(0.52)
Real DGP per capita	-0.090	-0.032	0.036
(in logarithm)	(1.00)	(0.34)	(0.08)
Percentage aged above 65	0.037**	0.037**	0.219**
	(2.01)	(2.03)	(2.47)
Percentage aged 15-64	0.021	0.021	0.064
	(1.43)	(1.44)	(1.02)
Trade Openness	-0.000	-0.000	-0.013*
-	(0.06)	(0.38)	(1.70)
Ohaanstiana		450	450
Observations	454	452	452
Number of countries	36	36	36
R-squared (within)	0.803	0.8046	0.8130

Dependent Variable: Social security and welfare spending as a percentage of GDP

All regressions include a constant and a lagged dependent variable. See note 19 for further details. Columns 1 and 2 report GLS random effect estimates, column (3) reports OLS fixed effect estimates. Absolute value of z statistics in parentheses. Standard errors are robust, clustered by country. * significant at 10%; ** significant at 5%; *** significant at 1%.