Growth inequality and redistribution

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Redistribution and Public Goods

- In 1960 8 per cent of GDP of social spending in OECD countries versus 16 per cent of public goods
- Today 16 per cent versus 17 per cent
- Virtually all the growth of government is redistribution
- In European countries an even larger fraction of public spending is redistributive

Meltzer Richard (1981) Model

- A specific redistributive scheme: linear income tax lump sum redistribution.
- Under these conditions (Romer 1975) the preferences are single peaked over the tax rate.
- A unique median voter equilibrium: does not generalize to more general redistributive schemes

Growth

- Alesina and Rodrik (1994) and Persson and Tabellini (1995) provide versions of the Meltzer Richard model in a dynamic context
- P-T: overlapping generation model: A-R use a linear growth model (AK model) with public good/infrastructure.

Alesina Rodrik (1994)

- Key result: more initial inequality measured by distance between median endowment and mean endowment leads to more redistribution and to lower growth because of the distortionary costs of taxation

1 Alesina Rodrik Model (brief sketch)

Endogenous growth model Ak model constant return to scale on capital accumulation with production infrastructure.

$y = Ak^{1-\alpha}g^{1-\alpha}l^{1-\alpha}$

$g = \tau k$

capital to be viewed in the broad sense, physical, human, etc. Perfect competition

Take first order condistio and substitute budget constraint of government

$r = \frac{\partial y}{\partial k} = \alpha A \tau^{1-\alpha} = r(\tau)$ with $r' > 0$

$$w = \frac{\partial y}{\partial l} = (1-\alpha)A\tau^{1-\alpha}k = \omega(\tau)k \text{ with } \omega' > 0$$

$$y^k = (r(\tau) - \tau)k$$

$$y^l = \omega(\tau)k$$

The on capitals has two effects: it reduces incentive to accumulated capital: (growth effect). It redistributes to labor (via g) level effect. Those who holds only capital will want to choose the tax rate which maximizes growth. Those who holds labor face a trade off between growth and level effect (redistribution today).

Key variable identifying policy preferences:

$\sigma^i = \frac{l^i}{k^i/k}$ perfect equality defined as $\sigma^i = 1$ for any i

$y^i = \omega(\tau)k\ \sigma^i + (r(\tau) - \tau)k^i$

Problem of individual i

$Max\ U = \int \log c^i e^{-\rho t} dt$

$s.t\ \frac{dk}{dt} = \omega(\tau)k\ \sigma^i + (r(\tau) - \tau)k^i - c^i$

Balanced growth path. Everything grows at the same rate with constant tax rate. Ranking of individuals in terms of labor capital ratios does not change.

Thus the higher is the tax rate the lower is the rate of growth of the economy which is. Define τ^* as the tax rate that maximizes growth. Those who own only capital wills prefer that rate. Those who own same labor with prefer a tax rate higher than that, remember the redistribution effect on the level of wages. The tax are preferred by the median voter is increasing in the proportion of labor in the median voter endowment. Result the tax rate most preferred by the median voter is increasing in σ^m and $\sigma^m > 1$.

Inequality in endowment translates into inequality in income levels.

Initial Empirical Evidence

- In cross country regressions initial inequality comes in negative after controlling for 1) initial income 2) education 3) regional dummies
- Result reasonably robust: compare Latin American and East Asia for instance

Initial Empirical Work

- North versus South America: different degree of development, role of initial inequality in land distribution (Sokoloff)

Initial Redistribution

- Model used to make the point that an initial condition of less inequality perhaps brought about by a land reform is beneficial to growth
- But the land reforms (unexpected and non distortive) is NOT modeled

Further empirical evidence

- Work by Perotti (1996) questions the mechanism from inequality to more redistribution to less growth
- Very scant evidence of more inequality leading to more redistribution

Caveats

- Very poor quality of cross country data on government programs in public investment education, progressivity of tax system
- What if different countries use different redisitributive instruments?

But more likely..

- That could be because the political system is biased toward the rich: one dollar one vote or lower participation of lower income educated classes of income
- Recent paper by Loukas Karabarbounis
- More on this later comparing US versus Europe

Democracy

- Persson and Tabellini argue that the relationship between inequality and growth should hold only in democracy
- Very weak evidence.

But…

- Redistributive pressure may be felt also in dictatorships.
- Mulligan and and Sala I Martin (2003) find very little evidence if any in fiscal policies of dictatorships and democracies.
- But democracy is not exogenous to initial inequality (Barro 1999) remember endogenous institutions lecture!
- More unequal societies are less democratic
- What direction of bias?

Imperfect Capital Markets

- Because of imperfect capital markets some fixed costs for investment in education has to be covered by current income
- Positive externality of society in investment in education: the larger the fraction of people educated the higher the productivity of the country (Romer Lucas type model)

Imperfect Capital Markets

- A certain fraction of the population is too poor to invest in education
- Up to a point redistributions make everybody better off because of the positive externality of education
- Work by Galor and Zeira, Perotti, and many others, see Benabou's survey

Results

- Inequality reduces growth
- The growth maximizing level of taxes is not zero but an intermediate level that allows “enough” poor to get educated without distorting too music the investment of the less poor

MR with imperfect capital markets

- The social planner maximizing efficiency an growth would choose an intermediate tax rate.
- The median voter would choose a higher tax rate
- The mean voter a lower tax rate
- Single peaked preferences generally a problem here, in these models.

Detour

- Redistribution especially effective if it takes the form of subsides to education, but:
- Teacher’s unions
- Absenteeism of teachers
- City bias
- Excessive support for public universities attended by the rich

Political instability

- More inequality, more political instability, (coup d’ etat, threats of government overthrow) more uncertainty about property tights, less investment (domestic and foreign, lower growth)
- Fair amount of support for that
- Alesina and Perotti (1996)

Mobility and redistribution

- Meltzer Richards model is static
- Growth application do not allow for social mobility and changes in the rankings of endowments

Mobility

- If redistributive policies are long lasting future income prospects and future position in the income ladder matter in determining current preferences, not only current income.
- Prospect of upward mobility should make someone relatively poor today less favorable to redistribution.

Learning

- Piketty 1996 learning about social mobility form past personal experience and experience of friends

Alesina and La Ferrara (2005)

- Test of the effects of mobility on preferences for redistribution
- Preferences for redistribution measured from General Social Survey question

Question

- “the government should reduce inequality by taxing the rich to give to the poor”
- Scale from 1-7 how much you agree with the statement
- Can use all 7 or condense in two groups for ease of interpretation

Mobility

- Personal mobility: from GSS education relative to father, job relative to that of father
- From PSID measure of actual mobility of different decile of the population
- Transition matrix for 2 or 5 years periods

Altruism, Risk aversion

- Using questions from GSS
- NO good question of risk aversion (big problem for GSS!)

Table 1
Transition matrix for US $(t, t+1)$, average 1972–1992

Deciles	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
1st	61.78	22.74	8.42	3.70	1.50	0.95	0.48	0.18	0.11	0.13
2nd	20.70	43.42	20.03	7.98	4.16	1.79	0.87	0.59	0.29	0.17
3rd	8.08	18.36	39.54	18.53	8.05	3.66	1.79	1.12	0.55	0.30
4th	4.16	6.53	18.14	36.50	19.44	8.00	3.79	1.94	1.00	0.50
5th	2.21	3.71	7.09	18.55	35.44	18.78	8.08	3.83	1.62	0.69
6th	1.47	2.15	3.16	7.07	18.98	35.12	20.51	7.79	2.72	1.03
7th	0.91	1.31	2.20	3.74	7.18	19.52	36.41	20.02	6.77	1.94
8th	0.57	0.64	1.14	1.94	3.73	7.15	19.72	41.51	19.60	4.01
9th	0.34	0.28	0.57	1.03	1.50	2.95	5.96	19.43	51.24	16.70
10th	0.29	0.32	0.47	0.50	0.83	0.94	2.04	4.11	16.30	74.20

Table 4
Individual determinants of preference for redistribution

Dependent variables	REDISTR ordered probit					REDISTR01 probit	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Age	−0.003**	−0.002**	−0.002**	−0.004**	−0.006	−0.002**	−0.0005
	(0.001)	(0.001)	(0.001)	(0.001)	(0.004)	(0.001)	(0.002)
Married	0.020	0.025	0.019	0.003	−0.015	0.004	−0.014
	(0.020)	(0.020)	(0.030)	(0.023)	(0.066)	(0.018)	(0.058)
Female	0.130**	0.137**	0.142**	0.130**	0.094	0.090**	0.076
	(0.027)	(0.028)	(0.028)	(0.030)	(0.078)	(0.014)	(0.056)
Black	0.439**	0.451**	0.445**	0.400**	0.317**	0.195**	0.162*
	(0.056)	(0.059)	(0.058)	(0.056)	(0.112)	(0.028)	(0.083)
Educ.<12	0.291**	0.288**	0.257**	0.331**	0.177**	0.158**	0.036
	(0.023)	(0.023)	(0.057)	(0.028)	(0.090)	(0.025)	(0.106)
Educ.>16	−0.186**	−0.192**	−0.179**	−0.220**	−0.215**	−0.088**	0.007
	(0.029)	(0.028)	(0.032)	(0.032)	(0.097)	(0.023)	(0.075)
Children	−0.005	−0.006	0.012	−0.008	−0.020	−0.001	−0.003
	(0.021)	(0.021)	(0.029)	(0.021)	(0.069)	(0.017)	(0.055)
ln(real income)	−0.159**	−0.158**	−0.153**	−0.158**	−0.174**	−0.083**	−0.059*
	(0.012)	(0.012)	(0.017)	(0.013)	(0.045)	(0.013)	0.033
Self-employed	−0.179**	−0.180**	−0.113**	−0.184**	−0.112	−0.117**	−0.134
	(0.033)	(0.033)	(0.032)	(0.041)	(0.111)	(0.025)	(0.085)
Unemployed last 5 years	0.140**	0.139**	0.117**	0.156**	0.073	0.092**	0.043
	(0.022)	(0.023)	(0.030)	(0.025)	(0.108)	(0.017)	(0.054)
Protestant		−0.088*					
		(0.050)					
Catholic		−0.010					
		(0.047)					
Jewish		−0.099					
		(0.076)					
Other religion		0.224**					
		(0.079)					
Help others			0.149**				
			(0.050)				
Job prestige> father's				−0.047**	−0.061	−0.005	0.043
				(0.021)	(0.073)	(0.016)	(0.055)
Educ.—father's				0.018**	0.028**	0.006**	0.009
				(0.002)	(0.010)	(0.002)	(0.008)
Expect better life					−0.245**		−0.105**
			35		(0.056)		(0.051)
No. obs.	11352	11339	6217	8396	980	4360	502
$R^2_{M\&Z}$	0.11	0.11	0.10	0.10	0.14	0.18	0.18
R^2_{Count}	0.25	0.25	0.24	0.23	0.25	0.66	0.66

Standard errors corrected for heteroskedasticity and clustering of the residuals at the MSA level.
$R^2_{M\&Z}$ is McKelvey and Zavoina's R^2; R^2_{Count} is the proportion of correct predictions.
All regressions include YEAR and STATE fixed effects.
* Denotes significance at the 10% level.
** At the 5% level.

Table 6
Preferences for redistribution and future income prospects

Dependent variables	REDISTR ordered probit				REDISTR01 probit			
	Transition matrix				Transition matrix			
	By state		By year		By state		By year	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Age	−0.004**	−0.004**	−0.004**	−0.004**	−0.001**	−0.001*	−0.001**	−0.001*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.0006)	(0.0006)
Married	0.018	0.011	0.018	0.013	0.006	0.002	0.006	0.003
	(0.025)	(0.025)	(0.025)	(0.025)	(0.019)	(0.019)	(0.019)	(0.019)
Female	0.116**	0.116**	0.116**	0.117**	0.081**	0.082**	0.081**	0.082**
	(0.031)	(0.031)	(0.031)	(0.031)	(0.017)	(0.016)	(0.017)	(0.016)
Black	0.398**	0.400**	0.398**	0.400**	0.190**	0.192**	0.190**	0.191**
	(0.057)	(0.058)	(0.057)	(0.058)	(0.030)	(0.030)	(0.030)	(0.030)
Educ.<12	0.310**	0.317**	0.311**	0.316**	0.144**	0.146**	0.144**	0.146**
	(0.031)	(0.031)	(0.031)	(0.031)	(0.026)	(0.026)	(0.026)	(0.026)
Educ.>16	−0.223**	−0.211**	−0.223**	−0.214**	−0.099**	−0.095**	−0.099**	−0.094**
	(0.030)	(0.030)	(0.030)	(0.030)	(0.024)	(0.024)	(0.024)	(0.024)
Children	−0.007	−0.008	−0.007	−0.009	0.004	0.004	0.004	0.003
	(0.022)	(0.022)	(0.022)	(0.021)	(0.018)	(0.018)	(0.018)	(0.018)
ln(real income)	−0.089**	−0.050**	−0.095**	−0.464	−0.044**	−0.029	−0.046**	−0.015
	(0.024)	(0.024)	(0.025)	(0.032)	(0.021)	(0.024)	(0.021)	(0.025)
Self-employed	−0.201**	−0.191**	−0.201**	−0.191**	−0.119**	−0.114**	−0.119**	−0.115**
	(0.042)	(0.041)	(0.042)	(0.041)	(0.028)	(0.028)	(0.028)	(0.028)
Unemployed last 5 years	0.153**	0.154**	0.153**	0.155*8	0.090**	0.091**	0.090**	0.091**
	(0.026)	(0.027)	(0.026)	(0.026)	(0.017)	(0.018)	(0.018)	(0.017)
Prestige>father's	−0.044*	−0.046**	−0.044*	−0.047**	0.001	−0.000	−0.001	−0.001
	(0.023)	(0.023)	(0.023)	(0.022)	(0.017)	(0.017)	(0.017)0	(0.017)
Education—father's	0.018**	0.018**	0.018**	0.018**	0.006**	0.006**	0.006**	0.006**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
Prob(7–10 decile)	−0.219**		−0.192**		−0.108**		−0.098**	
	(0.023)		(0.058)		(0.045)		(0.042)	
Expected [a] income		−0.004**		−0.004**		−0.002**		−0.002**
		(0.001)		(0.001)		(0.001)		(0.001)
No. obs.	7537	7537	7537	7537	3885	3885	3885	3885
$R^2_{M\&Z}$	0.11	0.11	0.11	0.11	0.18	0.18	0.18	0.18
R^2_{Count}	0.23	0.24	0.24	0.24	0.66	0.66	0.66	0.66

See notes to Table 4.

[a] Coefficient and standard error multiplied by 10^3 in columns 2, 4, 6 and 8.