Exercise 1

Consider an economy that consists of an odd number of agents. The distribution of income is given in the table below:

Income category	Income	Percentage of citizens
y1	700€	14%
y2	800€	35%
y3	900€	25%
y4	1,200€	15%
y5	1,700€	7%
y6	2,200€	4%

Moreover, preferences of the citizens are described by the following equation:

$$U_i = c_i + T \tag{1}$$

Where c_i is private consumption. All citizens pay a proportional tax (τ) and receive a lump sum transfer (T). The deadweight cost of taxation related to that tax rate is given by the following equation:

$$C(\tau)n\overline{y} = \tau^2 n\overline{y} \tag{2}$$

Finally assume that the government runs a balanced budget.

Exercise 1

- I. Calculate the optimal tax rate that is preferred by citizen *i*. Discuss the main theoretical implications of the political equilibrium.
- II. Calculate the tax rate that is preferred by each category of agents.
- III. Which income categories win and which income categories loose by the policy that prevails?
- IV. If category y1 is the median voter, is the redistribution higher or lower?

Political Equi[^]m

The government budget constraint:

 $\mathbf{T} = \frac{\sum_{i=1}^{n} \tau y_i - C(\tau) n \overline{y}}{n} \iff$

 $T = \tau \overline{y} - \tau^2 \overline{y}$

Indirect utility function (IUF) : $W_i(\tau) = (1-\tau)y_i + (\tau(1-\tau))\overline{y}$ F.O.C $\frac{dW_i(\tau)}{d\tau} = 0 \iff$

 $\tau^* = \frac{\overline{y} - y_i}{2\overline{y}}$ (7) Implying that "poorer (reps. richer) individuals prefer higher (resp. lower) taxation!

Political Equi[^]m

 If all citizens have single peaked preferences, the outcome is the tax rate preferred by the median voter. (Direct or representative Democracy!)

S.O.C

$$\frac{d^2 W_i(\tau)}{dt^2} = -2\overline{y} < 0$$
 (Single Peaked Preferences!)

• The median voter applies!
$$au_m^* = \frac{\overline{y} - y_m}{2\overline{y}}$$

Meltzer and Richard (1981) predictions:

- **1. Democracies redistribute more!**
- 2. The higher the distance (the poorer the median voter) the higher the redistribution of income!

(ii) Calculate the tax rate that is preferred by each category of citizens

The optimal tax rate is given by the following relationships:

$$\boldsymbol{\tau}_{\boldsymbol{i}}^* = \frac{\overline{y} - y_i}{2\overline{y}}$$

Mean income = \sum *income* * *percentage of citizens* =990

Income category	Income	Tax rate ($ au$)
y1	700€	0.146
y2	800€	0.096
y3	900 €	0.045
y4	1,200 €	0.000
y5	1,700 €	0.000
у6	2,200 €	0.000

(iii) Which income categories win and which income categories loose by the policy that prevails?

By replacing the tax rate of the "median voter" in the government budget constraint we can find the lump-sum transfer.

Income category	Income	Percentage of
		citizens
y1	700 €	14%
y2	800 €	35%
у3	900 €	25%
y4	1,200 €	15%
y5	1,700 €	7%
y6	2,200 €	4%

(iii) Which income categories win and which income categories loose by the policy that prevails?

By replacing the tax rate of the "median voter" in the government budget constraint we can find the lump-sum transfer.

 $T = \tau \overline{y} - \tau^2 \overline{y}$ therefore T= 42.545

Income category	Income	Taxes (0. 045 * <i>income</i>)	Transfer	Net Transfers (Transfer- taxes)
y1	700 €	31.50	42.545	11.05
y2	800€	36.00	42.545	6.55
y3	900€	40.50	42.545	2.05
y4	1,200€	54.00	42.545	-11.46
y5	1,700€	76.50	42.545	-33.96
у6	2,200€	99.00	42.545	-56.46

(iv) If category y1 is the median voter the redistribution is higher or lower?

If y1 was the median voter the preferred tax rate would be 0.146:

$T = \tau \overline{y} - \tau^2 \overline{y}$ therefore **T= 123.437**

 The bottom of the distribution (y1 and y2) receive a higher net transfer, whereas all other groups have a net loss from the intervention of the government.

Economic Theory

What is the relationship between economic inequality and fiscal redistribution according to Meltzer and Richard (1981)?

$$\tau_M^* = \frac{\overline{y} - y_M}{2\overline{y}} \qquad \qquad T_M^* = \frac{(\overline{y} - y_M)^2}{4\overline{y}}$$

So, based on Meltzer and Richard (1981) we expect economies characterized by larger differences between median and average income (i.e. higher income inequality) to be also characterized by:

- (i) Higher taxation
- (ii) Higher Transfers (%GDP)

ISO code	Middle Class	Gini_Market	Tax (% GDP)	Social transfers (% of GDP)
AUS	-	0.47	28.15	18.58
AUT	-	0.49	26.92	30.38
BEL	-	0.48	29.05	29.49
CAN	16.72	0.44	-	-
CZE	17.75	0.46	18.44	22.06
DNK	17.93	0.41	45.92	33.58
EST	16.65	0.47	-	20.62
FIN	17.35	0.48	29.60	30.53
FRA	17.03	0.49	26.62	32.85
DEU	16.84	0.49	22.04	28.39
GRC	17.10	0.51	20.77	26.25
IRL	16.67	0.54	25.10	23.16
ΙΤΑ	16.88	0.50	28.16	28.76
JPN	17.32	0.48	17.34	22.88
NLD	17.36	0.42	22.75	26.08
NZL	-	0.45	32.63	21.73
NOR	17.90	0.42	33.11	25.49
POL	16.33	0.49	21.44	25.07
PRT	-	0.52	22.58	26.48
SVK	17.66	0.43	17.05	20.91
SVN	18.23	0.44	22.96	26.23
ESP	17.33	0.47	21.91	23.46
SWE	17.79	0.44	41.89	32.35
GBR	16.25	0.51	28.01	26.04
USA	15.70	0.49	19.11	19.17

Sources: World Development Indicators and OECD.stats Period: 2005-2012





Benabou and Ok (2001)

- Benabou and Ok (2001) have focused on the role of social mobility and have modelled the "prospect of upward mobility" (POUM) hypothesis.
- Social Mobility: Today's poor may be wealthy tomorrow and, vice versa
- Poor individuals that expect to be rich tomorrow, might prefer lower redistribution today.
- Basic assumptions:
 - Individuals live in two periods
 - Redistribution is determined in the beginning of the first period.

Benabou and Ok (2001)

- Agents' income are exogenously determined and differ.
- We denoted with y_{i1} and y_{i2} the income in the first and second period, respectively.
- Individuals pay a Proportional income tax (τ) in both periods.
- Taxes are redistributed through two equal lump-sum transfers: T₁ = T₂

Benabou and Ok (2001)

Agents: i has utility $U_i = c_{i1} + T_1 + c_{i2} + T_2$ (1)

where c_i is consumption

• Given that $T_1 = T_2$ equation (1) becomes:

$$U_i = c_{i1} + c_{i2} + 2T$$
 (1b)

Budget constraint: $c_{1i} = (1 - \tau)y_{1i}$, $c_{2i} = (1 - \tau)E(y_{2i})$

Where $E(y_{2i})$ is the expected income in period 2.

• We assume that it is costly to raise taxes

$$C(\tau) = \frac{\tau^2}{2}\overline{y}$$

- (i) Costs of administering taxes, (ii) Distortions in the investment and labor supply.
- The government runs a balanced budget constraint in both periods:

Period 1:
$$T_1 = \frac{1}{n} \sum_{i=1}^n \tau y_{i1} - C(\tau)$$

$$T_1 = \tau \overline{y} - \frac{\tau^2}{2} \overline{y}$$
 (2a)

• The same holds for period 2:

Period 2:
$$T_2 = \frac{1}{n} \sum_{i=1}^n \tau y_{i2} - C(\tau)$$

$$T_2 = \tau \overline{y} - \frac{\tau^2}{2} \overline{y}$$
 (2b)

Adding 2(a) and 2(b) we get intertemporal budget constraint of the government as follows:

$$T_1 + T_2 = 2\tau \overline{y} - \tau^2 \overline{y} \qquad (2c)$$

• Given that $T_1 = T_2$ equation (2c) becomes:

$$2T = 2\tau \overline{y} - \tau^2 \overline{y} \qquad (2d)$$

• Replacing the budget constraints and intertemporal government budget constraint in (1b) we get the IUF:

$$W_{i}(\tau) = (1 - \tau)[y_{i1} + E(y_{i2})] + 2\tau \overline{y} - \tau^{2} \overline{y}$$
(3)

- The W(τ) is a concave function with respect to τ (SOC<0). All individuals have a bliss point.
- The preffered policy for individual i can be found if we take the FOC ($\frac{dW_i(\tau)}{d\tau} = 0$):

$$-[y_{i1} + E(y_{i2})]_i + 2\overline{y} - 2\tau\overline{y} = 0 \Leftrightarrow \quad \tau = 1 - \frac{[y_{i1} + E(y_{i2})]}{2\overline{y}}$$

- If $y_{i1} + E(y_{i2}) = 2\overline{y}$ then the ideal tax rate for citizen i is zero ($\tau = 0$)
- If $y_{i1} + E(y_{i2}) < 2\overline{y}$ then the ideal tax rate for citizen i is positive ($\tau > 0$)
- The interesting element of this theoretical model is that the expectation for the income in period 2 affects the preference for redistribution in period 1.
- A poor individual in period 1 (low y_{i1}) that expects a high increase in his income (high $E(y_{i2})$), so that $y_{i1} + E(y_{i2}) > 2\overline{y}$ prefers no redistribution ($\tau = 0$).

Empirical Literature: Alesina and La Ferrara (2005)

- Over the last years many researchers have attempted to explain what are the determinants of the demand for redistribution.
- Of course, income is one factor (e.g., Meltzer and Richard (1981))
- Future income prospects might be another factor (e.g., Benabou and Ok (2001)).
- Alesina and La Ferrara (2005) focus on the role of future income prospects and provide considerable evidence that the Americans do take them into account when evaluating redistribution.

Empirical Literature: Alesina and La Ferrara (2005)

- Alesina and La Ferrara (2005) use data from two main sources:
 - The General Social Survey (GSS), which since 1974 has interviewed about 1500 individuals every year from a nationally representative sample.
 - The second data source is the PSID. This very well known study contains longitudinal data on a representative sample of US individuals from 1968 onwards.
- The final sample covers the years 1978–1991, which are the ones for which we can match the **PSID** and **GSS**.

Empirical Literature: Alesina and La Ferrara (2005)

• Alesina and La Ferrara (2005) estimate the following equation:

$$Y_{ist}^{d*} = X_{ist}\beta + M_{ist}\gamma + F_{st}^d\delta + S\lambda + T\xi + \varepsilon_{ist}$$

 Y_{ist}^{d*} : captures the preferences of individuals for redistribution

X_{ist}: is a vector of individual characteristics such as age, education, etc.,

 M_{ist} : is a vector of dummies capturing the individual's past history of mobility and her subjective assessment of own future mobility

 F_{st}^d : an index of future income prospects for someone in the d_{th} decile at time t in state s.

Sλ: State Dummies, Tξ: Time Dummies and ε_{ist}: the error term

Y^{*d**}*ist*: preferences of individuals for redistribution

- The dependent variable is derived from the GSS, which asks whether the government should reduce income differences between the rich and the poor, perhaps by raising the taxes of wealthy families or by giving income assistance to the poor.
- Main dependent variable: The respondent could choose on a 1–7 scale from 1=No to 7=Yes.
- Alternatively, the authors transformed this variable into a binary variable coding as 1 the individuals who had a score 5-7, and 0 for those who had a score 1-3.

Y^{*d**}*ist*: preferences of individuals for redistribution

Table 3 Attitudes toward redistribution

Should governm	should government reduce income difference between rich and poor?											
	1 No	2	3	4	5	6	7 Yes	Dummy REDISTR01				
Full sample	0.13	0.07	0.12	0.20	0.17	0.11	0.20	0.59				
By year												
1978	0.12	0.08	0.11	0.21	0.17	0.11	0.19	0.61				
1980	0.16	0.07	0.13	0.20	0.17	0.09	0.17	0.55				
1983	0.15	0.08	0.11	0.18	0.16	0.11	0.20	0.58				
1984	0.12	0.08	0.13	0.17	0.15	0.12	0.21	0.60				
1986	0.12	0.06	0.11	0.21	0.17	0.09	0.23	0.62				
1987	0.12	0.06	0.12	0.21	0.17	0.09	0.23	0.62				
1988	0.12	0.08	0.12	0.20	0.18	0.10	0.20	0.60				
1989	0.11	0.07	0.11	0.20	0.20	0.13	0.18	0.63				
1990	0.11	0.06	0.09	0.22	0.18	0.12	0.21	0.66				
1991	0.09	0.08	0.12	0.20	0.17	0.13	0.20	0.63				
1993	0.12	0.08	0.12	0.18	0.19	0.12	0.18	0.60				
1994	0.15	0.08	0.15	0.21	0.16	0.09	0.15	0.51				
By region					100000000	01.075627070	372724-77A					
West	0.16	0.09	0.13	0.18	0.17	0.10	0.16	0.53				
Midwest	0.11	0.07	0.13	0.20	0.19	0.11	0.20	0.62				
North-West	0.11	0.07	0.12	0.20	0.18	0.10	0.21	0.62				
South	0.14	0.07	0.11	0.21	0.15	0.10	0.20	0.59				

M_{ist}: past history of mobility and subjective assessment of own future mobility

- Two alternative measures to capture **past history** of mobility:
 - Job prestige> father: dummy equal to 1 if the respondent has a higher occupational prestige score than his father's.
 Educ-Father: the difference between the years of education of the respondent and those of the father.
- Subjective assessment: <u>The way things are in America,</u> people like me and my family have a good chance of improving our standard of living—do you agree or disagree?
 - The authors construct the dummy variable expect better life, which equals to 1 if the respondent strongly agrees or agrees and zero otherwise.

F_{st}^d :an index of future income prospects for someone in the d_{th} decile at time t in state s.

The figures in each cell represent transition probabilities, that is
 p_{ij} in row i and column j is the probability that an individual
 whose family income is in the ith decile in year t will move to
 the jth decile in year (t+1).

Table 1						
Transition matrix	for	US	(<i>t</i> ,	<i>t</i> +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

 F_{st}^d :an index of future income prospects for someone in the d_{th} decile at time t in state s.

• From the above transition matrix two objective measures of future income are constructed:

$$EXPINC_{d,(t-1)} = \sum_{i=j}^{10} pd_j \bar{y}_{j,t}.$$

• This expression represents the income that an individual who is in decile d at time t-1 can expect to have time t.

$$Prob(J-10 \text{ decile})_d = \sum_{j=1}^{10} p_{di}$$

 This expression is the probability that an individual whose current income is in decile d will move to deciles greater or equal to J in the future. The authors set J=7

Dependent	REDISTR of	REDISTR01 probit					
variables	[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)
In(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	0.140**	0.139**	0.117**	0.156**	0.073	0.092**	0.043
last 5 years	(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>			52 SS. 2	-0.047**	-0.061	-0.005	0.043
father's				(0.021)	(0.073)	(0.016)	(0.055)
Educfather's				0.018**	0.028**	0.006**	0.009
				(0.002)	(0,010)	(0.002)	(0.008)
Expect					-0.245**		-0.105*
better life			35		(0.056)		(0.051)
No. obs.	11352	11339	6217	8.396	980	4360	502
RMARZ	0.11	0.11	0.10	0.10	0.14	0.18	0.18
Recount	0.25	0.25	0.24	0.23	0.25	0.66	0.66

Table 4 Individual determinants of preference for redistribution

Standard errors corrected for heteroskedasticity and clustering of the residuals at the MSA level.

Table 6 Preferences for redistribution and future income prospects

Dependent	REDISTR	ordered pro	bit		REDISTR01 probit Transition matrix			
variables	Transition	matrix						
	By state		By year	By year		52	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
Contraction of the	(0.022)	(0.022)	(0.022)	(0.021)	(0.018)	(0.018)	(0.018)	(0.018)
In(real income)	-0.089**	-0.050**	-0.095**	-0.464	-0.044**	-0.029	-0.046**	-0.015
No. Contraction of the second s	(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**
Sen improjet	(0.042)	(0.041)	(0.042)	(0.041)	(0.028)	(0.028)	(0.028)	(0.028)
Unemployed	0.153**	0.154**	0.153**	0.155*8	0.090**	0.091**	0.090**	0.091**
last 5 years	(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-	0.018**	0.018**	0.018**	0.018**	0.006**	0.006**	0.006**	0.006**
father's	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
Prob(7-10	-0.219**	la construction	-0.192**	200000000	-0.108**		-0.098**	Strate 82
decile)	(0.023)		(0.058)		(0.045)		(0.042)	
Expected a	A	-0.004**	121 85	-0.004 **	10 (d)	-0.002**	141	-0.002**
income		(0.001)		(0.001)		(0.001)		(0.001)
No. obs.	7537	7537	7537	7537	3885	3885	3885	3885
RM&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

People have different views about poverty (luck or effort?)

Beliefs about poverty		
	United States	European Union
«Believe that the poor are trapped in poverty»	29%	60%
«Believe that luck determines the income»	30%	54%
«Believe that the poor are lazy»	60%	26%

Source: World Values Survey

Different views about poverty affect fiscal redistribution



Percentage who believe that luck determines income

Empirical Evidence: Giuliano & Spilimbergo (2014), Growing up in a Recession

- Differences in preferences for redistribution can explain why government intervention differs in Europe and the U.S.
- How these preferences are formed and how and why they change over time?
- Do individuals differ in their desire for government intervention depending on the macroeconomic history they experienced when young?
- According to the *impressionable years hypothesis*, core attitudes, beliefs, and values crystallise during a period of great mental plasticity in early adulthood (the so-called impressionable years).
- What is the role of people's belief about the relative importance of luck versus effort as a driver of success.

Empirical Evidence: Giuliano & Spilimbergo (2014)

• Data on individual and political beliefs over the period 1972-2010 are obtained from the GSS.

Dependent Variables (LHS): Preferences for Redistribution (three variables)

Political Behavior (three variables)

 Explanatory variable (RHS): Macroeconomic shock (i.e. regional recession defined as per capita GDP growth < -3.4%) when the person was 16 years old that affected him/her during 18-25 years of age (impressionable years hypothesis)

Empirical Evidence: Giuliano & Spilimbergo (2014), Preferences for redistribution

[Help poor]: "Some people think that the government in Washington should do everything to improve the standard of living of all poor Americans (they are at point 5 on this card). Other people think it is not the government's responsibility, and that each person should take care of himself (they are at point 1). Where are you placing yourself in this scale?"

[Assist poor]: "We are faced with many problems in this country, none of which can be solved easily or inexpensively. I am going to name some of these problems, and for each one I would like you to tell me whether you think we are spending too much money on it, too little money or about the right amount." A list of items follows, including "assistance to the poor". The variable is coded so that a higher number indicates too little assistance to the poor.

[Work-luck]: "Some people say that people get ahead by their own hard work; others say that lucky breaks or help from other people are more important. Which do you think is most important?" The answer can take a value from 1 to 3: hard work is most important (1), hard work and luck are equally important (2), luck is most important (3).

Empirical Evidence: Giuliano & Spilimbergo (2014), Political Behaviour

[**Political Ideology**]: "We hear a lot of talk these days about liberals and conservatives. I am going to show you a seven-point scale on which the political views that people might hold are arranged from extremely liberal to extremely conservative. Where would you place yourself in this scale?" The question is coded so that a higher number corresponds to extremely liberal.

[**Party Affiliation**]: "Generally speaking, do you usually think of yourself as a Republican, Democrat, Independent, or what?" The answer could take a value from 6 to 0: strong Democrat (6), not very strong Democrat (5), Independent, close to Democrat (4), Independent (3), Independent, close to Republican (2), not very Strong Republican (1), strong Republican (0). People who answered "Other party, refused to say" or "Don't know." are dropped from the analysis.

[Voting Democrat]: The third political measure, voting Democrat, is based on whether the respondent voted for a Democratic presidential candidate in the most recent election.

Empirical Evidence: Giuliano & Spilimbergo (2014), Empirical specification

 $Beliefs_{irt} = \alpha_o + \alpha_1 macro shock_{r16,imp.years} + \alpha_2 X_i + \beta_{\alpha} + \delta_r + \eta_t + \gamma r_{16} + \gamma r_{16} * age + \varepsilon_{irt}$

Beliefs_{irt} indicates one the 6 questions described above

*macro shock*_{r16,imp.years} is a dummy that takes the value 1 if the individual experienced a recession in his region of residence during the impressionable years (18-25) after a recession at 16, and 0 otherwise

 X_i is a vector of individual characteristics, including gender and race, as well as measures of income, education, marital status, and labour market status.

 $\boldsymbol{\beta}_{\alpha}$ is age dummies and $\boldsymbol{\eta}_{t}$ is time fixed effects

 δ_r is the region where the person is living, and γr_{16} is the region where the person was living at 16

 $\gamma r_{16} * age$ is interactions of region-at-16 dummies with age

Empirical Evidence: Giuliano & Spilimbergo (2014)

	GSS: baseline specification									
	(1) Help poor	(2) Assistance poor	(3) Work- luck	(4) Party affiliation	(5) Political views	(6) Voting democrat				
Economic shock	0.033**	0.021**	0.017**	0.177***	0.133***	0.043***				
Years of education	(0.016) -0.051***	(0.010) -0.017^{***}	(0.008) 0.006***	(0.029) -0.033***	(0.022) 0.020***	(0.009) 0.001				
Married	(0.006) -0.139^{***}	(0.002) -0.036^{***}	(0.002) -0.059***	(0.008) -0.220^{***}	(0.007) -0.264***	(0.002) -0.058^{***}				
Female	(0.016) 0.164***	(0.009) 0.060***	(0.008) -0.075***	(0.036) 0.178***	(0.014) 0.088***	(0.008) 0.037***				
Black	(0.017) 0.635***	(0.011) 0.276***	(0.012) 0.107***	(0.035) 1.468***	(0.019) 0.296***	(0.008) 0.449***				
Unemployed	(0.036) 0.118*** (0.036)	(0.012) 0.066^{***}	(0.010) 0.058***	(0.064) 0.113***	(0.021) 0.100^{**} (0.045)	(0.016) 0.050***				
Income fixed effects	Yes	Yes	Yes	Yes	Yes	Yes				
Age fixed effects	Yes	Yes	Yes	Yes	Yes	Yes				
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes				
Region interview f.e.	Yes	Yes	Yes	Yes	Yes	Yes				
Region at 16 f.e.	Yes	Yes	Yes	Yes	Yes	Yes				
(Region at 16)*age	Yes	Yes	Yes	Yes	Yes	Yes				
Observations	24,287	15,416	30,694	43,443	38,525	27,267				

TABLE 1

Notes: [1] Standard errors are clustered at the region at 16 level, and estimated using the wild bootstrap method; *significant at 10%, **significant at 5%, ***significant at 1%; [2] the number of observations reported for the AES in columns 7, 8, and 9 is the average number of observations in the regressions for the measures of preferences for redistribution, political behaviour, or all of them respectively.

0.02

0.11

0.05

0.15

0.07

0.09

 R^2

Columns (1)-(3) experiencing a recession when 16 increases peoples' preferences for redistribution and believe that luck is the driving force in life.

Columns (4)-(6) experiencing a recession when <16 increases the probability to be liberal.

Political regimes and preferences for redistribution

- What is the effect of diferret regimes (pro-Market vs Communistic) on fiscal redistribution?
- Is it possible that living under a specific system leads to adaptation of preferences?
- We can compare countries with different regimes to answer this question.
- Reverse causality can be a problem:
 ➤ Theory: Regime → Preferences
 ➤ Problem: Preferences → Regime
- Alesina and Fuchs-Schuendeln (2007), study the effect of a natural experiment (re-unification of Germany) to tackle this issue.

• Natural Experiment:

- Prior to 1945 Germany was united
- From 1945 to 1990, Germany was split into two parts, Eastern Germany (Communism) and Western Germany (Free market). This split had nothing to do with Germans' desire for separation.
- > After 1990 Germany is reunified.
- The political and economic system is the same after 1990.
- How 45 years of Communism affected individuals' attitudes and beliefs and political preferences?



- Basic questions of the paper:
 - Has 45 years of Communism affected individuals' preferences towards the role of the state and redistribution form the rich to the poor?
 - If yes, why former East Germans are more likely to favor state intervention?
 - Do preferences of East Germans converge toward those of West Germans?

- Data are obtained from the German Socioeconomic Panel (GSOEP):
 - It is a longitudinal survey of private households, established in West Germany in 1984 and carried out annually.
 - The West German sample leaves contains around 11 ,400 year-person observations, while the East German sample covers around 7,000 year-person observations for 1997 and 2002.
- Panel of nearly 18,500 East and West Germans for 1997 and 2002.

• Empirical specification:

 $Y_{it} = East_{it} + Year02_{it} + East_{it} * Year02_{it} + X_{it} + \varepsilon_{it}$

- Y_{it} : preferences for redistribution or attitudes towards luck
- *East_{it}*: takes on the value of one (zero otherwise) if the respondent lived in East Germany before reunification, regardless of the current place of residence.
- *Year*02_{*it*}: takes the value of one in year 2002 and zero otherwise.
- *East_{it}* * *Year*02_{*it*}: Interaction term
- X_{it} : other important controls, like age, gender, labor force status, education annual household income.
- ε_{it} : the error term

Y_{it}: preferences for redistribution

- In 1997 and 2002, respondents were asked:
 - At present, a multitude of social services are provided not only by the state but also by private free market enterprises, organizations, associations, or private citizens. What is your opinion on this? Who should be responsible for the following areas?...."
- ... "financial security in case of unemployment," "financial security in case of illness," "financial security of families," "financial security for old age," and "financial security for persons needing care."
- The answers are given on a scale of 1 to 5, which correspond to "only the state," "mostly the state," "state and private forces," "mostly private forces," and "only private forces."
- The authors create five dummy variables which take on the value of one if the respondent answered "only the state" or "mostly the state" for the respective area, and zero otherwise.

TABLE	1-BASIC	REGRESSIONS
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Dependent variable: Responsibility for financial security	when unemployed	when sick	of the family	when old	when requiring care
East	0.432***	0.434***	0.420***	0.426***	0.371***
Year02	0.064***	0.165***	-0.012 (0.024)	-0.033	0.103***
East * year02	-0.123*** (0.039)	-0.161*** (0.036)	-0.060* (0.036)	-0.143*** (0.036)	-0.176*** (0.036)
Age	-0.026*	-0.005	-0.009	-0.019	-0.003
Age squared (*103)	(0.015) 0.614** (0.296)	(0.015) 0.150 (0.289)	(0.015) 0.255 (0.292)	(0.014) 0.434 (0.286)	(0.014) -0.042 (0.286)
Age cubed (*10 ⁵)	-0.406** (0.185)	-0.095	-0.193 (0.183)	-0.279 (0.197)	0.066 (0.179)
College	-0.203***	-0.258*** (0.061)	-0.141** (0.062)	-0.277***	-0.122** (0.060)
Vocational training	-0.096* (0.057)	-0.140*** (0.054)	-0.136**	-0.163*** (0.054)	-0.087 (0.054)
Secondary schooling	-0.101* (0.059)	-0.071 (0.056)	-0.023 (0.057)	-0.103*	-0.068 (0.056)
Intermediate schooling	-0.103 (0.069)	-0.152** (0.066)	-0.147** (0.068)	-0.155** (0.065)	-0.052 (0.065)
Male	-0.083*** (0.023)	-0.072*** (0.022)	-0.003 (0.022)	-0.020 (0.022)	0.020 (0.021)
Number of children	0.034** (0.014)	0.034*** (0.012)	0.064*** (0.012)	0.038*** (0.012)	0.010 (0.012)
Number of adults	0.022*	0.043*** (0.012)	0.022**	0.037*** (0.011)	0.007 (0.012)
Married	0.069*	0.106***	0.026	0.045	0.109*** (0.036)
Divorced	0.089*	0.048	0.042	0.047	0.107**
Married but separated	0.011 (0.087)	-0.028	-0.042	0.082	0.161*
Widowed	-0.050	0.027	-0.043	-0.038	0.075
Log (household income)	-0.156***	-0.264***	-0.135***	-0.224***	-0.148***
Civil servant	-0.122** (0.057)	-0.222*** (0.059)	0.085 (0.059)	-0.060 (0.059)	-0.113** (0.055)
Self-employed	-0.317*** (0.052)	-0.403*** (0.053)	-0.332*** (0.053)	-0.450*** (0.053)	-0.306*** (0.051)
White-collar worker	-0.030 (0.033)	-0.044 (0.032)	(0.032)	-0.089***	-0.101***
Unemployed	0.161*** (0.051)	0.005 (0.047)	0.142*** (0.047)	0.005 (0.046)	-0.034 (0.046)
Retired	-0.075 (0.059)	-0.090 (0.057)	0.149*** (0.058)	0.019 (0.056)	0.011 (0.056)
Maternity	0.015	-0.051	0.119	-0.197***	-0.081 (0.075)
Nonworking	-0.027	-0.022 (0.042)	0.158***	-0.012	0.021
Training	-0.049	-0.021	-0.115*	-0.086	-0.021
Other nonworking	-0.000	-0.093*	0.062	-0.046	-0.097**
Constant	1.994*** (0.303)	1.852*** (0.293)	0.728**	1.859***	1.178*** (0.287)
Observations Log likelihood	18,489 -11,060	18,487 -12,192	18,485 	18,516 -12,250	18,514 -12,568

Notes: Probit regressions. The dependent variable is an indicator variable that takes the value one if the household responds "only the state" or "mostly the state" to the question of who should be responsible for the financial security of different groups. Omitted categories are fewer than nine years of schooling, female, single, blue-collar worker, and employed. *** Significant at, or below, 1 percent. ** Significant at, or below, 5 percent. * Significant at, or below, 10 percent.

• Empirical specification:

 $Y_{it} = East_{it} + Year02_{it} + East_{it} * Year02_{it} + Age_{it} + East_{it}$ $* Age_{it} + X_{it} + \varepsilon_{it}$

- *Age*_{*it*} : age of the respondent
- **East**_{it} * **Age**_{it}: interaction term

Dependent variable: Responsibility for financial security	when unemployed	when sick	of the family	when old	when requiring care
East	0.029	-0.034	-0.032	-0.226***	0.002
	(0.064)	(0.060)	(0.060)	(0.060)	(0.059)
Year02	0.070***	0.172***	-0.006	-0.024	0.108***
	(0.023)	(0.023)	(0.024)	(0.023)	(0.023)
East * year02	-0.139***	-0.176***	-0.074**	-0.168***	-0.189***
	(0.039)	(0.036)	(0.037)	(0.036)	(0.036)
Age	-0.000	-0.002	-0.003**	-0.003***	-0.005^{***}
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
East * age	0.009***	0.011***	0.010***	0.015***	0.008***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Observations	18,489	18,487	18,485	18,516	18,514
Log likelihood	-11,034	-12,148	-11,914	-12,165	-12,541

TABLE 2—REGRESSIONS WITH AGE INTERACTED WITH EAST

Notes: Probit regressions. The dependent variable is an indicator variable that takes the value one if the household responds "only the state" or "mostly the state" to the question of who should be responsible for the financial security of different groups. Included as controls are number of children and number of adults in household, logarithm of household income, and dummies for education, sex, marital status, employment status, and occupation.

*** Significant at, or below, 1 percent.

** Significant at, or below, 5 percent.

* Significant at, or below, 10 percent.



Notes: This figure indicates by how many percentage points an East German of a certain birth cohort group is more likely to favor state intervention than a West German of the same birth cohort group (assuming all other characteristics are the same). A household is defined as favoring state intervention if the head responds "only the state" or "mostly the state" to the question of who should be responsible for the financial security of different groups.

- It seems that 45 years of Communism affected individuals' preferences towards redistribution.
- Moreover, older East Germans who have lived longer under communism have an even stronger preference for state intervention.
- Why do former Germans favor state intervention?
- Empirical specification:

 $Y_{it} = East_{it} + Age_{it} + East_{it} * Age_{it} + X_{it} + \varepsilon_{it}$

• *Y_{it}*: driving forces of success in life

Y_{it} : driving forces of success in life

- "The following statements express varying attitudes toward life and the future. Please state whether you totally agree, agree slightly, disagree slightly, or totally disagree,"
- The dummy variable "social conditions" takes on the value one if the respondent agreed totally or slightly with the statement "The possibilities in my life are determined by the social conditions."

Dependent variable: Social conditions define possibilities	Basic regression	Regression including age * east interaction
East	0.292***	-0.186**
Age * east	(0.052)	0.011*** (0.002)
Age	0.008 (0.022)	0.002
Age squared (*10 ³)	-0.028	
Age cubed (*10 ⁵)	-0.005 (0.285)	
College	-0.097	-0.116 (0.093)
Vocational training	-0.073 (0.089)	-0.077
Secondary schooling	-0.030 (0.091)	-0.024 (0.089)
Intermediate schooling	-0.033 (0.104)	-0.038 (0.103)
Male	-0.145*** (0.031)	-0.145*** (0.031)
Number of children	0.018 (0.017)	0.022
Number of adults	0.047*** (0.015)	0.048*** (0.015)
Married	-0.035 (0.051)	-0.039
Divorced	0.037 (0.072)	0.036
Married but separated	0.009	0.014
Widowed	0.127	0.128
Log (household income)	-0.140*** (0.037)	-0.135***
Civil servant	-0.181**	-0.178**
Self-employed	-0.266*** (0.070)	-0.267*** (0.069)
White-collar worker	-0.027 (0.044)	-0.032 (0.044)
Unemployed	0.159** (0.068)	0.152** (0.068)
Retired	-0.121 (0.086)	-0.126*
Maternity	0.028	0.018
Nonworking	0.064 (0.059)	0.051
Training	0.049	0.049
Other nonworking	-0.161** (0.071)	-0.169** (0.070)
Constant	1.201***	1.390***
Observations Log likelihood	8,580	8,580

TABLE 9—REGRESSIONS WITH SOCIAL CON	IDITIONS AS THE DEPENDENT VARIABLE
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Note: Probit regressions. The dependent variable is an indicator variable that takes the value of one if the household "totally agrees" or "agrees slightly" with the statement "The possibilities in my life are determined by the social conditions." Omitted categories are fewer than nine years of schooling, female, single, blue-collar worker, and employed. *** Significant at, or below, 1 percent. ** Significant at, or below, 5 percent. * Significant at, or below, 10 percent.

Readings

(*) Alesina, A., La Ferrara, E., (2005). Preferences for redistribution in the land of opportunities, *Journal of Public Economics 89, 897-931*.

(*) Alesina, A., Fuchs-Schuendeln, N., (2007). Good-Bye Lenin (or Not?). The Effect of Communism on People's Preferences. *American Economic Review 97, 1507-1528.*

Benabou, R., Ok, E., (2001). Mobility as progressivity: ranking income processes according to equality of opportunity, NBER Working Paper 8431.

(*) Giuliano, P., Spilimbergo, A., (2014). Growing up in a Recession. Review of Economic Studies 81, 787-817.