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# Financial Literacy and Attitudes to Redistribution

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## Financial Literacy and Attitudes to Redistribution

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# The Paper Version 1

*[P]eople train themselves to reduce and sometimes more than fully overcome any tendency towards undervaluation. The analysis in this ... allows people to maximize the discounted value of present and future utilities partly by spending time and other resources to produce "imagination" capital that helps them better appreciate future utilities.*

**Gary Becker (1996)**

## The Paper Version 2

**“...Society needs to keep the market in its place. The domain of rights is part of the checks and balances on the market designed to preserve values that are not denominated in dollars. For the same reasons that an investor holds many different stocks and bonds in his portfolio, society diversifies its mechanisms for distribution and allocation. It won't put all of its eggs in the market's basket...”**

**“...To be sure, it will never solve the problem, for the conflict between equality and economic efficiency is inescapable. In that sense, capitalism and democracy are really a most improbable mixture. Maybe that is why they need each other-to put some rationality into equality and some humanity into efficiency...”**

**Arthur Okun (1975)**

# The economic landscape

## ❑ *Individuals are increasingly in charge of their financial well-being*

- Changes in the financial markets and the financial technology
  - ❖ Capabilities: Liquidity, financial inclusion, more opportunities
  - ❖ Challenges: Increased complexity, technological illiteracy
- Changes in the pension landscape
  - ❖ More choice and more individual accounts
  - ❖ Ageing, increasing life expectancy, and low interest rates
- Changes in the labour markets
  - ❖ 5<sup>th</sup> industrial revolution
  - ❖ Increased international mobility
- **Changes in the political sphere**
  - ❖ **Tighter government budgets**
    - Austerity, crisis, distrust
  - ❖ Political choices
    - Referendums, devolution, project selection & management

# Financial Literacy and Public Attitudes

- At the macro level, and in view of looming debt and retirement crises around the world, salient political choices – recently involving voting in referendums – are determined by attitudes towards redistribution, immigration, austerity, as well as the understanding of the working of economic partnerships and monetary and fiscal unions etc.
  - Such attitudes are likely to depend upon the understanding of the basics of macroeconomic accounts and public finance
- In a series of papers, we examine the relationship between financial literacy and public attitudes in Great Britain
  - **Attitudes to redistribution**
  - Attitudes towards political polarization
  - Attitudes towards devolution in the Scottish and the EU referendums
  - Attitudes towards immigration

# Relevant redistribution literature

- Theory: Romer (1975), Roberts (1977) and Meltzer and Richard (1983): The net benefit derived from redistribution is inversely correlated to income
  - Alesina and Angeletos (2005) and Benabou and Tirole (2006): Fairness, expected social mobility etc. matter
- Empirically, Alesina and Giuliano (2011), Alesina and La Ferrara (2005), and Fong (2001; 2006), focus their attention on **current and expected income and social status**; Andreoni and Miller, (2002); Fong et al., (2006) and Fong and Oberholzer-Gee (2011) look at the role of behavioral factors, such as **beliefs regarding the role of luck**. Gruber and Hungerman, (2007) focus their attention on the role of **altruism or religion**.

# Relevant redistribution literature

- Corneo and Grüner (2002) propose a framework to categorize the possible channels through which preferences for redistribution can be derived:
  - 1) ***homo oeconomicus effect***: individuals are driven by self-interest and their preferences are entirely shaped by their rank in the income scale; Specifically, preferences are inversely related to the gain that the individual obtain from governmental redistribution.
  - 2) ***public value effect*** states that preferences are unrelated by the level of income, preferences are then endowments, such as ethics, the individual was born with
  - 3) ***social rivalry effect***; here the focus is on the “*relative living standards of the individual*” , e.g. social composition of the area and the marital
- **Okun’s (1975)** trade-off between equity and efficiency can be explained as follows:
  - Some of the resources transferred from rich to poor “*will simply disappear in transit, so the poor will not receive all the money that is taken from the rich*” —the result of administrative costs and disincentives to work for both those who pay taxes and those who receive transfers.
  - Policymakers always face this trade off and they must decide by how much they are prepared to reduce aggregate income in order to secure a more equal income distribution.
  - **Should we anticipate the more financially-literate to evaluate this tradeoff differently?**



# Financial Literacy in a Major Survey

- **Customized version in 2014/15 including our 3 questions**
  - Online survey; 30,219 respondents in Wave 2
  - 26,870 also took Wave 1 (overall retention 88.9%)
- **Nationally representative survey**
  - Weights constructed at the regional level (i.e. Scotland, England, Wales and London are weighted separately to population values) and then adjusted to account for the oversampling of Scottish and Welsh voters
- **3 Financial Literacy questions implemented in Wave 2**
  - Playground item (also asked in Scotland and Wales)
  - Representative sub-sample
  - 5,712 respondents
- **An additional Scottish boost sample of more than 5,000 individuals in Wave 4**

# Financial literacy measurement

## Q1: Numeracy

Suppose you had £100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

- (1)  More than £102
- (2)  Exactly £102
- (3)  Less than £102
- (4)  I can not tell, not even approximately

# Financial literacy measurement

## Q2: Inflation

Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?

- (1)  More than today
- (2)  Exactly the same
- (3)  Less than today
- (4)  I can not tell, not even approximately

# Financial literacy measurement

## Q3: Risk

Which is the riskier asset to invest in?

- (1)  Shares in a single company stock
- (2)  Shares in a unit/mutual fund
- (3)  Risks are identical in both cases
- (4)  Don't know

# Financial literacy in Great Britain

## Panel A: Financial literacy measures

	<u>#Correct responses</u>	<u>#Wrong responses</u>	<u>#DK/DA responses</u>	<u>At least one "Don't know"</u>
GB sample	1.99	0.49	0.52	31.25%
Scottish sample	1.93	0.51	0.56	33.91%

## Panel B: Financial literacy: #Correct responses

	<u>All 3 correct</u>	<u>2 correct</u>	<u>1 correct</u>	<u>0 correct</u>
GB sample	40.22%	29.45%	19.55%	10.78%
Scottish sample	37.28%	31.15%	19.12%	12.45%

## Panel C: Distribution of financial-literacy responses

	<u>Correct</u>	<u>Incorrect</u>	<u>Don't know</u>	<u>Refuse</u>
GB: Compound interest	81.32%	8.88%	9.80%	3.10%
GB: Inflation	69.09%	12.48%	18.43%	3.18%
GB: Stock risk	48.68%	27.93%	23.38%	2.41%
Scotland: Compound interest	80.87%	7.96%	11.17%	2.68%
Scotland: Inflation	65.81%	14.33%	19.85%	2.81%
Scotland: Stock risk	46.57%	28.57%	24.86%	2.43%

## Panel D: International comparison (Lusardi and Mitchell, 2014)

<u>Country</u>	<u>Survey year</u>	<u>Interest rate</u>	<u>Inflation</u>	<u>Risk</u>	<u>All 3 correct</u>	<u>At least 1 "Don't know"</u>
USA	2009	64.9%	64.3%	51.8%	30.2%	42.4%
Netherlands	2010	84.8%	76.9%	51.9%	44.8%	37.6%
Germany	2009	82.4%	78.4%	61.8%	53.2%	37.0%
Japan	2010	70.5%	58.8%	39.5%	27.0%	61.5%
Australia	2012	83.1%	69.3%	54.7%	42.7%	41.3%

# Empirical Strategy

- We examine the impact of financial literacy on attitudes to redistribution
  - Using 2 proxies for attitudes to redistribution
  - Using the richest possible list of control variables
  - Using two representative samples, for Great Britain (Wave 2) and a large boost sample for Scotland (Wave 4)
  - Using 3 distinct IV exercises
    - Readership of newspapers with a personal finance section, financial education and Lewbel's method
  - Using a falsification exercise on attitudes to generic inequality
  - ... and a battery of robustness exercises

# Empirical Strategy

- We examine the mechanisms/channels via which the effect of financial literacy on attitudes to redistribution prevails
  - Wealth effect
  - Backward-looking wealth comparison
  - POUM hypothesis – Forward-looking wealth expectation
  - Corneo and Gruber's (2003) HOE, PVE, and SRE effects
  - Okun's efficiency–equity tradeoff

## Attitudes to redistribution

- Some people feel that government should make much greater efforts to make people's incomes more equal. Other people feel that government should be much less concerned about how equal people's incomes are. Where would you place yourself and the political parties on this scale?
  - 0 [Government should try to make incomes equal] – 10 [Government should be less concerned about equal incomes]
- How much do you agree or disagree with the following statements?
  - ... *where 1 [strongly disagree] – 5 [strongly agree]*
    - Government should redistribute income from the better off to those who are less well off



# Measure validity

	Great Britain		Scotland	
	$RD_1$	$RD_2$	$RD_1$	$RD_2$
(1) When someone is unemployed, it's usually through no fault of their own: - 1 ( <i>Strongly disagree</i> ) – 5 ( <i>Strongly agree</i> )	-0.20*	-0.29*	-0.23*	-0.26*
(2) Too many people these days like to rely on government handouts: - 1 ( <i>Strongly disagree</i> ) – 5 ( <i>Strongly agree</i> )	-0.26*	-0.31*	-0.34*	-0.36*
(3) Do you think it should be legal for employers to hire workers on contracts that do not give a guarantee a minimum number of paid hours per week (also known as zero-hours contracts)? - <i>It should definitely be illegal</i> - <i>It should probably be illegal or it should definitely be illegal</i>	0.24*	0.31*	0.31*	0.29*
(4) Total benefit receivership by local authority of residence	0.01	0.02	0.10*	0.08*
(5) Benefits recipient: Jobseeker's Allowance / Unemployment benefit; Income Support or family credit; Invalidity, sickness or disabled pension or benefit(s); Other state benefit.	0.11*	0.15*	0.14*	0.14*
(6) Do you think people who come to live in Britain from other EU countries get more in benefits and services than they pay in taxes? - <i>Yes</i>	-0.08*	-0.09*	-0.09*	-0.12*
(7) Thinking of people coming to live in Great Britain, when do you think they should obtain the same rights to social benefits and services as citizens already living here? - <i>After they have worked and paid taxes for at least four years</i>	-0.04*	-0.05*	-0.10*	-0.11*
(8) Do you think the difference in incomes between rich people and poor people in the UK today is larger, smaller, or about the same as it was 20 years ago? - <i>Larger</i>	0.19*	0.20*	0.29*	0.32*
(9) Would you say the difference in incomes is much larger or somewhat larger? - <i>Much larger</i>	0.13*	0.22*	0.24*	0.24*
(10) Would you say the difference in incomes is much smaller or somewhat smaller? - <i>Much smaller</i>	-0.07*	-0.02	-0.13*	-0.12*
(11) For people who think inequality is large: And do you think this is a good thing, a bad thing, or haven't you thought about it? - <i>A good thing</i>	-0.10*	-0.11*	-0.12*	-0.10*

# A long list of control variables

- **Financial literacy, and....**
  - Gender, age (7 cat.), marital status (3), household size, children in school and preschool age, education (8), race (5), country/region of birth (8), urban/rural region of residence, government office region
  - Labour market status (5), last known sector of activity (6), trade union membership (past and present)
  - Income (14), house-owner, mortgage, income shock in the last year
  - Risk-taking, political orientation (left-right), social desirability, religiousness, BIG5 personality traits
- **Instrumental variables**
  - **Readership of newspapers with personal finance section:** Daily Telegraph, Financial Times, Guardian, Independent, Times
  - **Broad financial education:** Economics or Business, Engineering, Mathematics or Natural sciences

# Summary Statistics

**Table 2**  
Attitudes towards redistribution and financial literacy in 2014 Great Britain

**PANEL A: “Government should try to make incomes more equal” (%)**

	<u>No</u> <b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<u>Yes</u> <b>10</b>
Full sample	10.39	3.73	6.67	11.7	7.59	17.5	8.07	9.92	6.7	4.17	13.56
Financial literacy: # correct responses											
– 0 –	6.59	1.86	5.07	7.42	5.97	22.18	7.38	8.16	5.25	5.76	24.37
– 1 –	7.32	3.5	4.61	9.21	6.5	20.33	5.61	8.28	8.04	4.9	21.71
– 2 –	10.11	3.24	6.92	11.83	7.83	17.58	7.56	9.84	6.82	4.53	13.73
– 3 –	12.65	4.53	7.68	13.52	8.21	15.3	9.61	11.03	6.33	3.31	7.82

**PANEL B: “Government should redistribute income from the better off to those who are less well off” (%)**

	<u>Strongly Disagree</u> <b>1</b>	<b>2</b>	<u>Neither agree nor disagree</u> <b>3</b>	<b>4</b>	<u>Strongly Agree</u> <b>5</b>
Full sample	5.02	18.68	25.01	31.57	19.72
Financial literacy: # correct responses					
– 0 –	3.55	9.08	26.67	36.01	24.7
– 1 –	4.55	13.21	25.88	31.29	25.07
– 2 –	4.13	18.54	25.36	33.11	18.86
– 3 –	6.14	23.25	24.03	29.71	16.88

**Notes:** This table shows the distribution of responses to different questions about attitudes towards redistribution in the British Election Survey 2014/5 and their break down by the number of correct responses in the financial-literacy questions. All statistics are weighted using population level weights.

# Regressions: Great Britain [Wave 2]

<b>Panel A:</b> Dependent variable - $RD_1$ : “Government should try to make incomes more equal”						
	(1)	(2)	(3)	(4)	(5)	(6)
Financial literacy: #Correct responses	-0.537*** [0.058]	-0.449*** [0.059]	-0.440*** [0.059]	-0.402*** [0.060]	-0.661*** [0.154]	-0.617*** [0.137]
<b>% Financial-literacy effect</b>	<b>-10.4%</b>	<b>-8.7%</b>	<b>-8.6%</b>	<b>-7.8%</b>	<b>-12.9%</b>	<b>-12.0%</b>
Linear prediction	5.147	5.134	5.134	5.134	5.134	5.134
#Observations	5,066	4,895	4,895	4,895	4,895	4,895
$R^2$	0.029	0.231	0.220	0.224	0.225	0.225
<b>Panel B:</b> Dependent variable - $RD_2$ : “Government should redistribute income from the better off to those who are less well off”						
	(7)	(8)	(9)	(10)	(11)	(12)
Financial literacy: #Correct responses	-0.151*** [0.020]	-0.116*** [0.022]	-0.117*** [0.022]	-0.105*** [0.022]	-0.274*** [0.057]	-0.194*** [0.054]
<b>% Financial-literacy effect</b>	<b>-4.4%</b>	<b>-3.4%</b>	<b>-3.4%</b>	<b>-3.1%</b>	<b>-8.0%</b>	<b>-5.7%</b>
Linear prediction	3.428	3.425	3.425	3.425	3.425	3.425
#Observations	5,297	5,101	5,101	5,101	5,101	5,101
$R^2$	0.017	0.244	0.233	0.236	0.239	0.237
<b>Control variables for both Panels A and B:</b>						
Individual characteristics	-	+	+	+	+	+
Education (dummy variables)	-	+	-	-	-	-
Age (dummy variables)	-	+	-	-	-	-
Personal income (dummy variables)	-	+	-	-	-	-
Years of education	-	-	+	+	+	+
Log(Age)	-	-	+	+	+	+
Log(Personal income)	-	-	+	+	+	+
Log(Personal income)^2 and ^3	-	-	-	+	+	+
Log(Household income)	-	-	-	+	+	+
Log(Household income)^2	-	-	-	+	+	+
Log(Personal income)*Log(Household income)	-	-	-	+	+	+
Financial literacy*Years of education	-	-	-	-	+	-
Fin. literacy*Log(Personal income)*Years of education*Log(Age)	-	-	-	-	-	+

# Regressions: Scotland [Wave 4]

**Panel A:** Dependent variable -  $RD_1$ : “Government should try to make incomes more equal”

	(1)	(2)	(3)
Financial literacy: #Correct responses	-0.283*** [0.061]	-0.246*** [0.062]	-0.369** [0.157]
<b>% Financial-literacy effect</b>	<b>-4.5%</b>	<b>-3.9%</b>	<b>-5.9%</b>
<i>Linear prediction</i>	6.239	6.239	6.239
<i>#Observations</i>	4,989	4,989	4,989
<i>R<sup>2</sup></i>	0.251	0.249	0.249

**Panel B:**

Dep. variable -  $RD_2$ : “Government should redistribute income from the better off to those who are less well off”

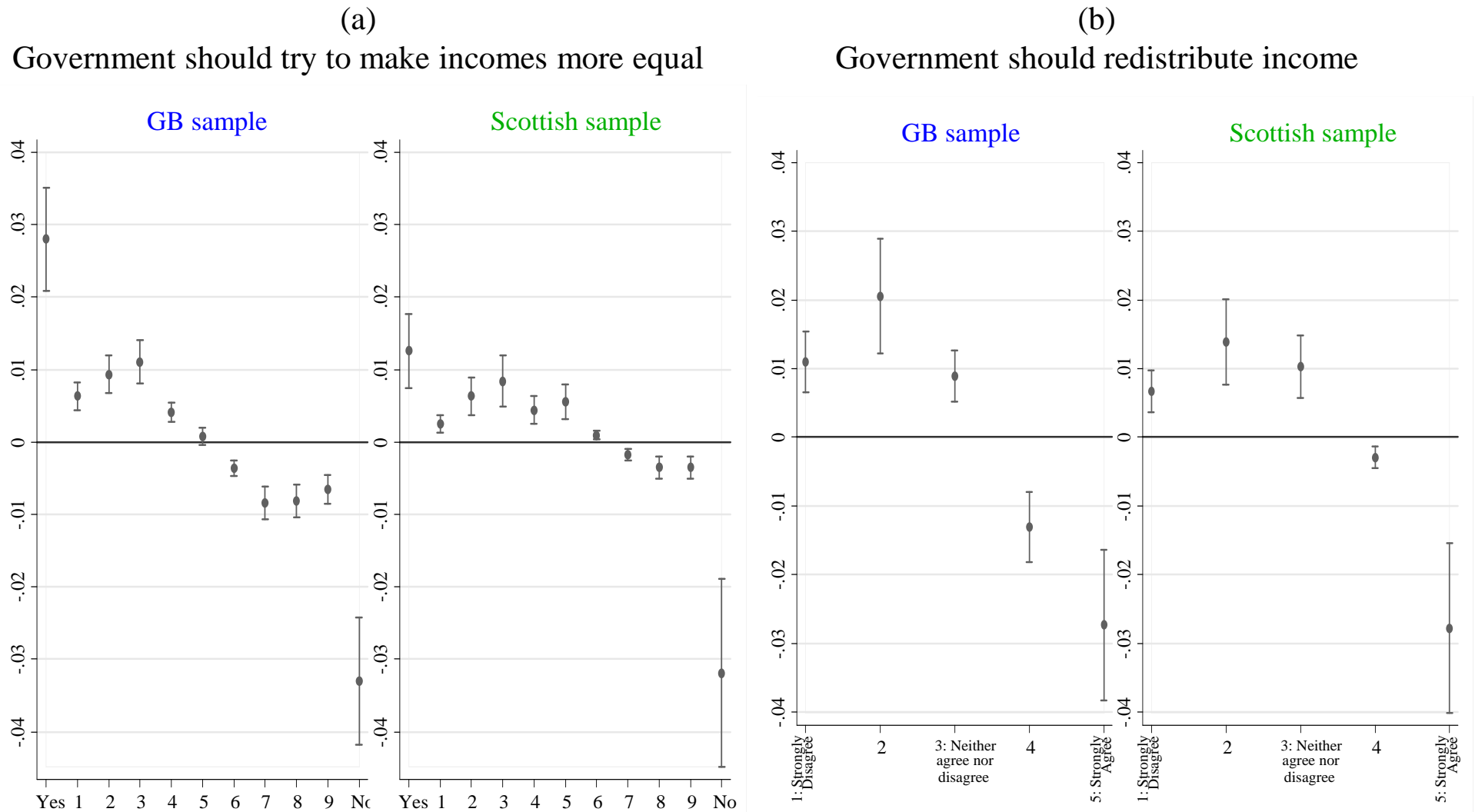
	(4)	(5)	(6)
Financial literacy: #Correct responses	-0.088*** [0.021]	-0.069*** [0.021]	-0.155*** [0.058]
<b>% Financial-literacy effect</b>	<b>-2.4%</b>	<b>-1.9%</b>	<b>-4.2%</b>
<i>Linear prediction</i>	3.719	3.719	3.709
<i>#Observations</i>	4,986	4,986	4,986
<i>R<sup>2</sup></i>	0.236	0.237	0.236

Individual characteristics	+	+	+
Education (dummy variables)	+	-	-
Age (dummy variables)	+	-	-
Personal income (dummy variables)	+	-	-
Years of education	-	+	+
Log(Age)	-	+	+
Log(Personal income)	-	+	+
Log(Personal income) <sup>2</sup> and <sup>3</sup>	-	+	+
Log(Household income)	-	+	+
Log(Household income) <sup>2</sup>	-	+	+
Log(Personal income)*Log(Household income)	-	+	+
Financial literacy*Log(Personal income)*Years of education*Log(Age)	-	-	+

# Marginal Effects

**Figure 2**

Average marginal effects of financial literacy on attitudes towards redistribution from ordered probit regressions



# Effect Magnitudes

<b>Panel A: Dependent variable – RD<sub>1</sub>: “Government should try to make incomes more equal”</b>											
	<i>No – 0</i>	<i>- 1 -</i>	<i>- 2 -</i>	<i>- 3 -</i>	<i>- 4 -</i>	<i>- 5 -</i>	<i>- 6 -</i>	<i>- 7 -</i>	<i>- 8 -</i>	<i>- 9 -</i>	<i>Yes – 10</i>
<u>GB sample [Wave 2]</u>											
Fin. literacy AME	0.027***	0.006***	0.009***	0.011***	0.004***	0.001	-0.003***	-0.008***	-0.008***	-0.006***	-0.032***
	[0.004]	[0.001]	[0.001]	[0.002]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.004]
<b>% Fin. literacy effect</b>	<b>25.8%</b>	<b>17.2%</b>	<b>13.9%</b>	<b>9.3%</b>	<b>5.2%</b>	<b>0.4%</b>	<b>-4.4%</b>	<b>-8.1%</b>	<b>-12.0%</b>	<b>-15.1%</b>	<b>-24.0%</b>
<i>Predicted probability</i>	0.106	0.036	0.066	0.116	0.076	0.176	0.079	0.101	0.066	0.042	0.135
<i>#Observations</i>	4,895	4,895	4,895	4,895	4,895	4,895	4,895	4,895	4,895	4,895	4,895
<u>Scottish sample [Wave 4]</u>											
Fin. literacy AME	0.013***	0.002***	0.006***	0.008***	0.004***	0.005***	0.001***	-0.002***	-0.003***	-0.003***	-0.031***
	[0.002]	[0.000]	[0.001]	[0.001]	[0.001]	[0.001]	[0.000]	[0.000]	[0.001]	[0.001]	[0.005]
<b>% Fin. literacy effect</b>	<b>19.0%</b>	<b>14.0%</b>	<b>12.0%</b>	<b>9.0%</b>	<b>6.5%</b>	<b>3.7%</b>	<b>0.8%</b>	<b>-1.6%</b>	<b>-4.1%</b>	<b>-6.1%</b>	<b>-12.6%</b>
<i>Predicted probability</i>	0.068	0.018	0.051	0.088	0.063	0.136	0.084	0.111	0.083	0.055	0.244
<i>#Observations</i>	4,989	4,989	4,989	4,989	4,989	4,989	4,989	4,989	4,989	4,989	4,989
<b>Panel B: Dependent variable – RD<sub>2</sub>: “Government should redistribute income from the better off to those who are less well off”</b>											
	<i>1 – Strongly Disagree</i>	<i>- 2 -</i>	<i>3 – Neither agree nor disagree</i>	<i>- 4 -</i>	<i>5 – Strongly Agree</i>						
<u>GB sample [Wave 2]</u>											
Fin. literacy AME	0.011***		0.020***		0.009***						
	[0.002]		[0.004]		[0.002]						
<b>% Fin. literacy effect</b>	<b>21.0%</b>		<b>11.0%</b>		<b>3.6%</b>						
<i>Predicted probability</i>	0.052		0.184		0.244						
<i>#Observations</i>	5,101		5,101		5,101						
<u>Scottish sample [Wave 4]</u>											
Fin. literacy AME	0.007***		0.014***		0.010***						
	[0.002]		[0.003]		[0.002]						
<b>% Fin. literacy effect</b>	<b>17.2%</b>		<b>10.3%</b>		<b>5.0%</b>						
<i>Predicted probability</i>	0.038		0.133		0.203						
<i>#Observations</i>	4,986		4,986		4,986						

# Robustness: Falsification

**Panel A:** Financial literacy and attitudes to equality rights - *Please say whether you think these have gone too far [5] or have not gone nearly far enough in Britain [1]*

<u>Dep. Variable:</u>	<u>GB sample</u>			<u>Scottish sample</u>		
	<i>Gays and lesbians</i>	<i>Women</i>	<i>Ethnic minorities</i>	<i>Gays and lesbians</i>	<i>Women</i>	<i>Ethnic minorities</i>
<i>Attempts to give equal opportunities to:</i>						
<u>Financial literacy:</u>	(1)	(2)	(3)	(4)	(5)	(6)
#Correct responses	0.001	-0.023	-0.027	-0.010	0.025	-0.031
	[0.022]	[0.018]	[0.021]	[0.022]	[0.019]	[0.021]
<i>Linear prediction</i>	3.142	2.735	3.392	2.992	2.561	3.207
<i>#Observations</i>	5,007	5,104	4,988	4,872	4,974	4,857
$R^2$	0.216	0.140	0.213	0.245	0.143	0.208



# Robustness: Counterfactuals

**Panel B:** Financial illiteracy and attitudes to redistribution: # Incorrect and #DK/DA responses

<i>Dependent Variable:</i>	<u>GB sample</u>				<u>Scottish sample</u>			
	<i>RD</i> <sub>1</sub>		<i>RD</i> <sub>2</sub>		<i>RD</i> <sub>1</sub>		<i>RD</i> <sub>2</sub>	
<u>Financial illiteracy:</u>	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
#Wrong responses	0.241*** [0.084]	-	0.101*** [0.029]	-	0.214*** [0.082]	-	0.109*** [0.029]	-
#DK/DA responses	-	0.440*** [0.071]	-	0.075*** [0.026]	-	0.208*** [0.077]	-	0.036 [0.024]
<i>% Fin.-illiteracy effect</i>	4.7%	8.6%	2.9%	2.2%	3.4%	3.3%	2.9%	1.0%
<i>Linear prediction</i>	5.134	5.134	3.425	3.425	6.239	6.239	3.719	3.719
<i>#Observations</i>	4,895	4,895	5,101	5,101	4,989	4,989	4,986	4,986
<i>R</i> <sup>2</sup>	0.218	0.225	0.239	0.238	0.246	0.247	0.235	0.232

# Robustness: Components

**Panel C: Financial literacy components and attitudes to redistribution**

<i>Dependent Variable:</i>	<u>GB sample</u>				<u>Scottish sample</u>			
	<i>RD<sub>1</sub></i>		<i>RD<sub>2</sub></i>		<i>RD<sub>1</sub></i>		<i>RD<sub>2</sub></i>	
<u>Financial literacy:</u>	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
Interest: Correct	-0.363** [0.169]	-	-0.196*** [0.056]	-	-0.076 [0.171]	-	-0.023 [0.060]	-
Inflation: Correct	-0.529*** [0.137]	-	-0.03 [0.048]	-	-0.225* [0.134]	-	-0.118** [0.049]	-
Risk: Correct	-0.435*** [0.114]	-	-0.112*** [0.041]	-	-0.478*** [0.113]	-	-0.105** [0.041]	-
Interest: Wrong	-	0.317 [0.213]	-	0.176** [0.071]	-	0.005 [0.222]	-	0.019 [0.083]
Inflation: Wrong	-	0.342 [0.250]	-	0.265*** [0.080]	-	0.212 [0.249]	-	0.088 [0.082]
Risk: Wrong	-	0.462** [0.182]	-	0.064 [0.064]	-	0.322* [0.166]	-	0.191*** [0.060]
Interest: DK/DA	-	0.541*** [0.185]	-	-0.012 [0.063]	-	0.062 [0.184]	-	0.023 [0.063]
Inflation: DK/DA	-	0.343*** [0.131]	-	0.131*** [0.047]	-	0.440*** [0.130]	-	0.103** [0.048]
Risk: DK/DA	-	0.608*** [0.148]	-	0.080 [0.053]	-	0.555*** [0.147]	-	0.118** [0.050]
<i>Linear prediction</i>	5.134	5.134	3.413	3.413	6.239	6.239	3.718	3.718
<i>No. of Observations</i>	4,895	4,895	5,292	5,292	4,989	4,989	4,986	4,986
<i>R<sup>2</sup></i>	0.231	0.232	0.242	0.243	0.252	0.253	0.234	0.235

# Robustness: IVs

Instrument(s):	GB sample					Scottish sample				
	P.F. section	FinEdu	P.F. section FinEdu	Het.-based instruments With IVs	Het.-based instruments Without IVs	P.F. section	FinEdu	P.F. section FinEdu	Het.-based instruments With IVs	Het.-based instruments Without IVs
Panel A: Dependent variable – RD <sub>1</sub> : “Government should try to make incomes more equal”										
Financial literacy: #Correct responses	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	-0.898*	-1.222*	-1.036***	-0.586***	-0.575***	-1.030*	-2.053***	-1.503***	-0.231**	-0.185*
	[0.480]	[0.668]	[0.402]	[0.096]	[0.097]	[0.580]	[0.691]	[0.442]	[0.108]	[0.110]
<b>% Financial-literacy effect</b>	<b>-17.5%</b>	<b>-23.8%</b>	<b>-20.2%</b>	<b>-11.4%</b>	<b>-11.2%</b>	<b>-16.5%</b>	<b>-32.9%</b>	<b>-24.1%</b>	<b>-3.7%</b>	<b>-3.0%</b>
Linear prediction	5.13	5.13	5.13	5.13	5.13	6.24	6.24	6.24	6.24	6.24
# Observations	4,895	4,895	4,895	4,895	4,895	4,989	4,989	4,989	4,989	4,989
R <sup>2</sup>	0.215	0.184	0.203	0.229	0.229	0.205	-0.009	0.128	0.251	0.25
F-statistic	12.56	12.18	12.45	13.23	13.23	16.34	12.5	14.8	17.82	17.82
F-Test of excluded instruments	37.87***	21.07***	28.58***	25.73***	31.46***	34.45***	26.32***	29.91***	21.80***	21.17***
(a) Kleibergen-Paap rk LM statistic $\chi^2$	35.11***	20.85***	51.79***	430.55***	453.20***	34.14***	25.69***	55.93***	445.54***	411.99***
(c) Anderson-Rubin Wald test: F	3.46**	3.56**	3.33**	2.17***	1.87***	3.38*	11.19***	7.32***	1.61***	1.42**
(c) Stock-Wright LM S-statistic: $\chi^2$	3.93**	4.04**	7.53**	123.60***	114.52***	3.79*	12.38***	16.22***	102.85**	91.23
(d) Hansen J statistic $\chi^2$	0.000	0.000	0.163	79.859	101.82***	0.000	0.000	1.332	87.613	77.720
Panel B: Dependent variable – RD <sub>2</sub> : “Government should redistribute income from the better off to those who are less well off”										
Financial literacy: #Correct responses	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
	-0.432**	-0.467	-0.445***	-0.075**	-0.064*	-0.283	-0.642***	-0.484***	-0.084**	-0.068*
	[0.178]	[0.302]	[0.161]	[0.037]	[0.037]	[0.214]	[0.211]	[0.146]	[0.036]	[0.036]
<b>% Financial-literacy effect</b>	<b>-12.7%</b>	<b>-13.7%</b>	<b>-13.1%</b>	<b>-2.2%</b>	<b>-1.9%</b>	<b>-7.6%</b>	<b>-17.3%</b>	<b>-13.0%</b>	<b>-2.3%</b>	<b>-1.8%</b>
Linear prediction	3.41	3.41	3.41	3.41	3.41	3.72	3.72	3.72	3.72	3.72
# Observations	5,292	5,292	5,292	5,292	5,292	4,986	4,986	4,986	4,986	4,986
R <sup>2</sup>	0.172	0.157	0.167	0.238	0.237	0.211	0.037	0.134	0.236	0.236
F-statistic	13.7	13.36	13.63	15.67	15.67	14.65	11.8	13.19	15.54	15.52
F-test of excluded instruments	49.62***	19.07***	34.59***	32.85***	37.87***	32.15***	36.52***	32.92***	23.27***	21.89***
(a) Kleibergen-Paap rk LM statistic $\chi^2$	46.43***	19.04***	63.47***	482.10***	35.11***	30.84***	34.54***	59.41***	442.39***	403.07***
(c) Anderson-Rubin Wald test: F	6.33**	2.61	4.31**	1.96***	3.46*	1.78	11.07***	6.62***	1.36**	1.14
(c) Stock-Wright LM S-statistic: $\chi^2$	7.29***	3.06*	9.93***	123.69***	3.93**	1.97	11.56***	13.81***	99.69**	84.25
(d) Hansen J statistic $\chi^2$	0.000	0.000	0.011	109.40***	0.000	0.000	0.000	1.357	83.322	70.697

# Robustness: Longitudinal models and differences

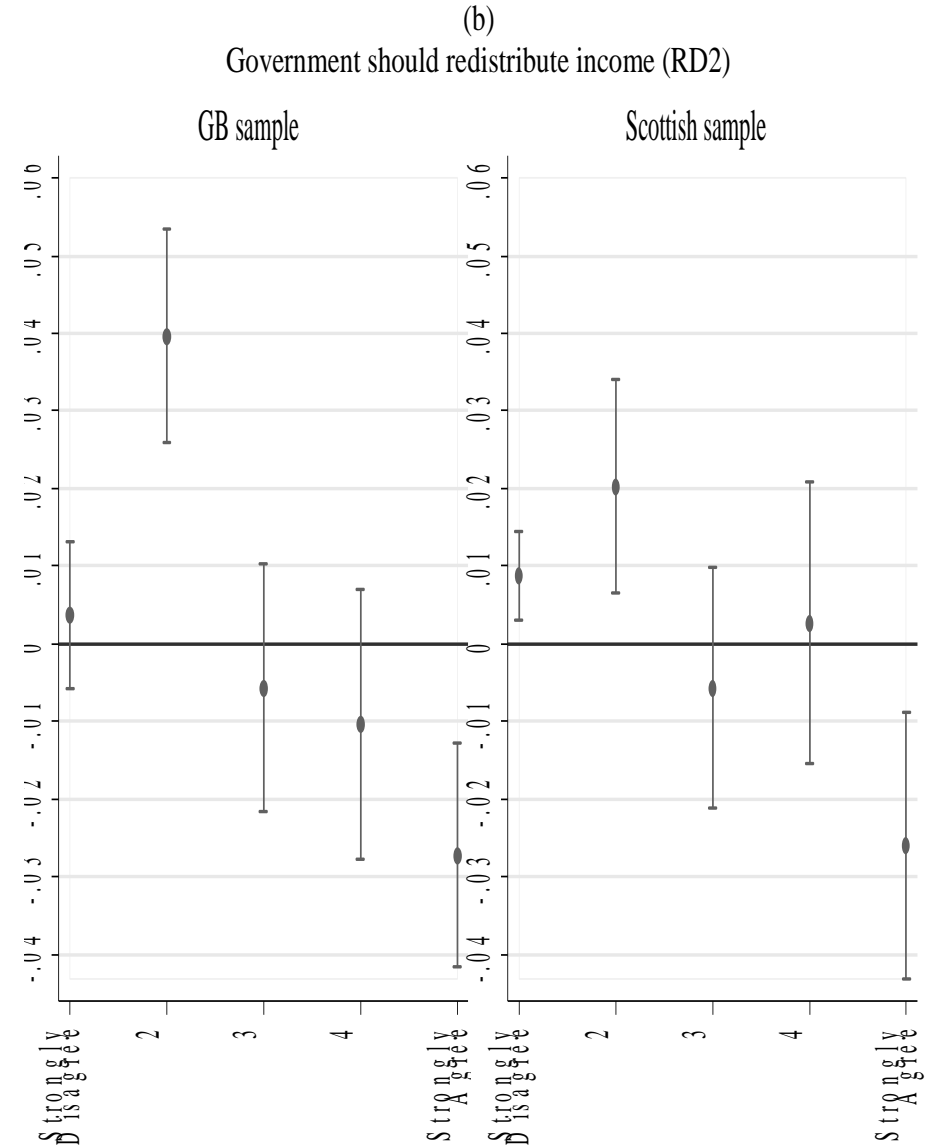
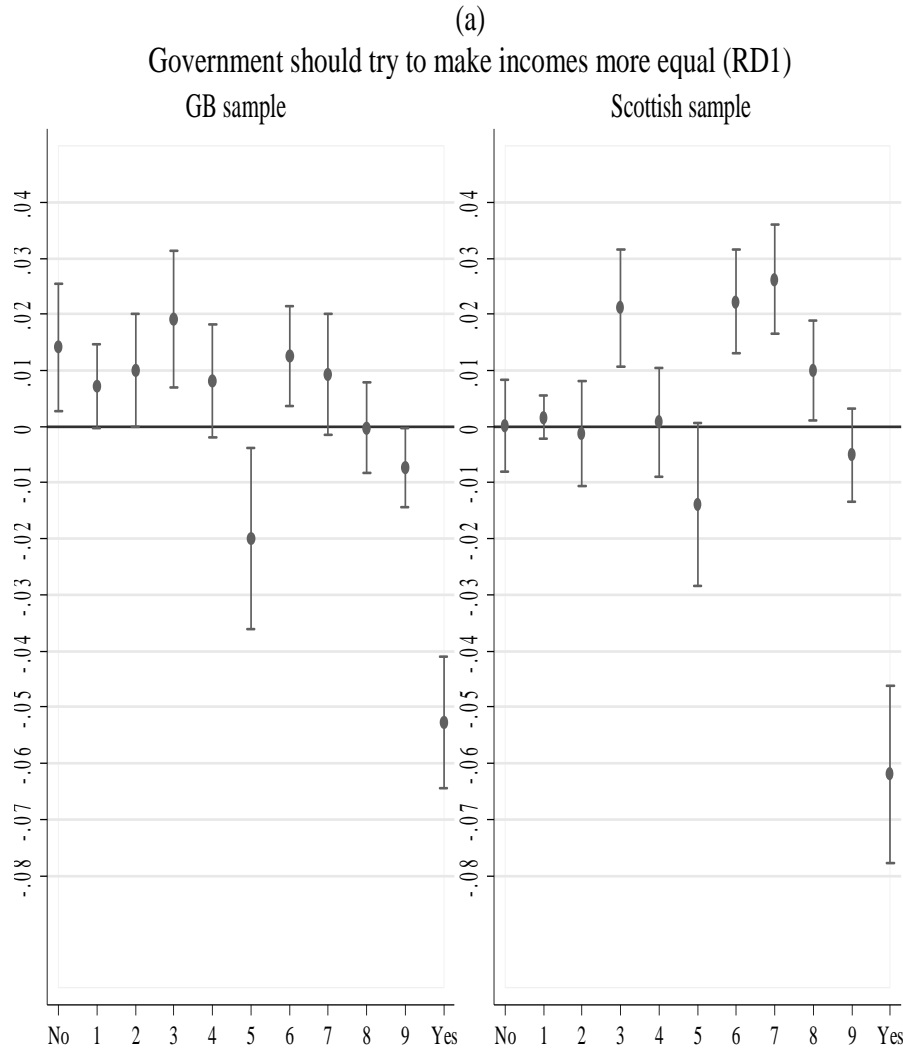
**Table 9**  
Longitudinal models of attitudes to redistribution

	Random effects		Weighted Least		$WLS_{\Delta[\text{wave } 2\text{-}7]}$	
	$GLS_{[\text{Waves } 1\text{-}7]}$ $RD_1$	$RD_2$	$Squares_{[\text{Waves } 1\text{-}7]}$ $RD_1$	$RD_2$	$RD_1$	$RD_2$
<b><i>GB sample</i></b>	(1)	(2)	(3)	(4)	(5)	(6)
Financial literacy: # correct responses	-0.422*** [0.034]	-0.391*** [0.043]	-0.099*** [0.012]	-0.090*** [0.015]	-0.373*** [0.063]	-0.048* [0.025]
<i>% Financial-literacy effect</i>	-8.0%	-7.3%	-3.0%	-2.7%	-979.0%	-32.4%
<i>Linear prediction</i>	5.288	5.350	3.343	3.335	-0.038	0.148
<i>#Observations</i>	23,042	23,042	14,073	14,073	4,895	5,101
<i>[Overall] R<sup>2</sup></i>	0.294	0.283	0.275	0.244	0.086	0.057
<b><i>Scottish sample</i></b>	(7)	(8)	(9)	(10)	(11)	(12)
Financial literacy: # correct responses	-0.336*** [0.034]	-0.322*** [0.045]	-0.063*** [0.012]	-0.070*** [0.016]	-0.188*** [0.061]	-0.034 [0.021]
<i>% Financial-literacy effect</i>	-5.6%	-5.2%	-1.7%	-1.9%	-25.9%	-11.8%
<i>Linear prediction</i>	5.984	6.167	3.601	3.611	0.727	0.288
<i>#Observations</i>	23,852	23,852	14,055	14,055	4,989	4,986
<i>[Overall] R<sup>2</sup></i>	0.276	0.265	0.256	0.232	0.098	0.063

**Notes:** The longitudinal information on  $RD_1$  is for waves 1, 2, 3, 4, 6 and 7. The information on  $RD_2$  stems from waves 1, 6 and 7. The remaining specification is identical to column 2 of Table 4 and the comments there apply. Robust standard errors in brackets. The models in columns 2 and 4 also have the standard errors clustered at the individual level. Asterisks denote the following levels of significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

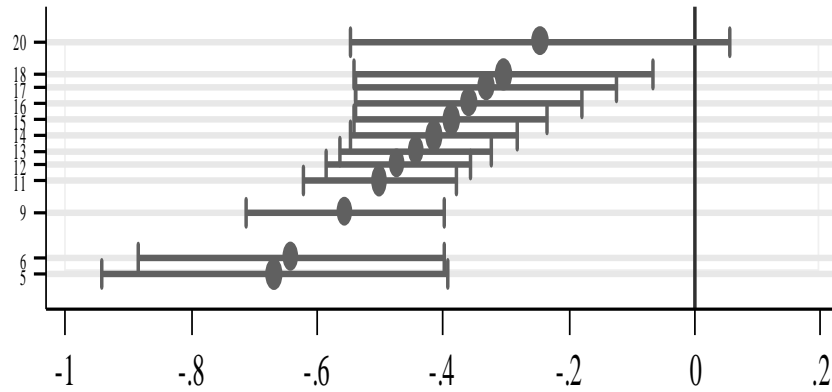
# Robustness: Generalized Ordered Probit

## *Non-parallel-line assumption*

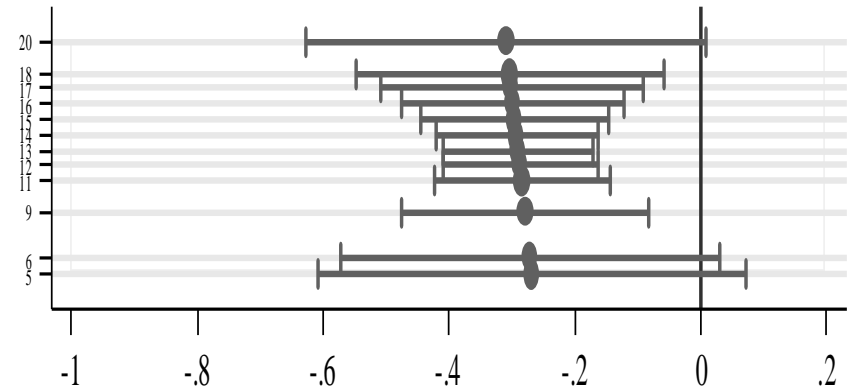


# Robustness: AMEs by education

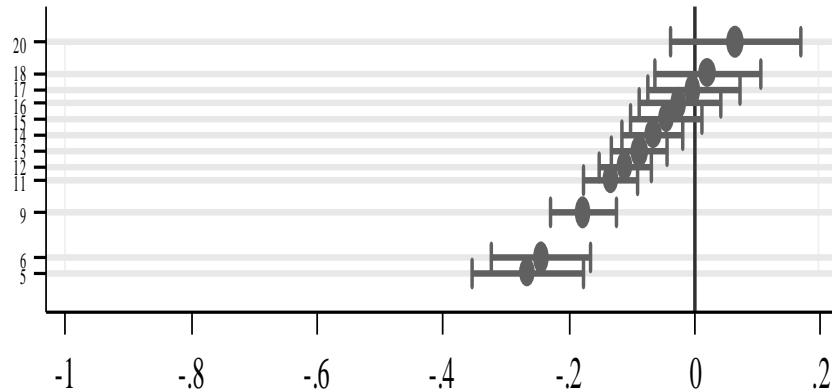
RD1 - GB sample



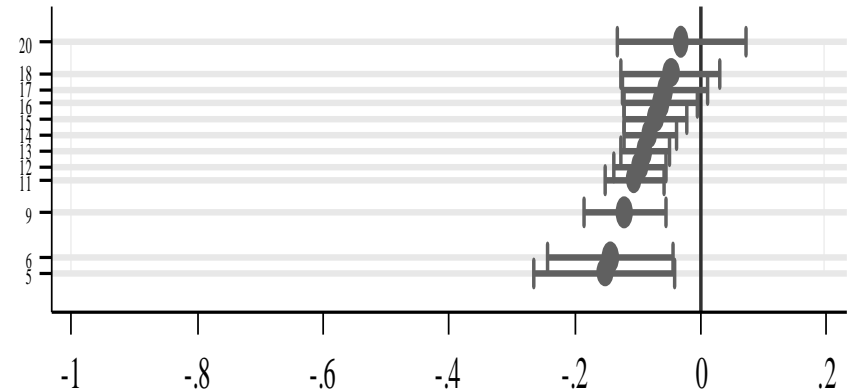
RD1 - Scottish sample



RD2 - GB sample

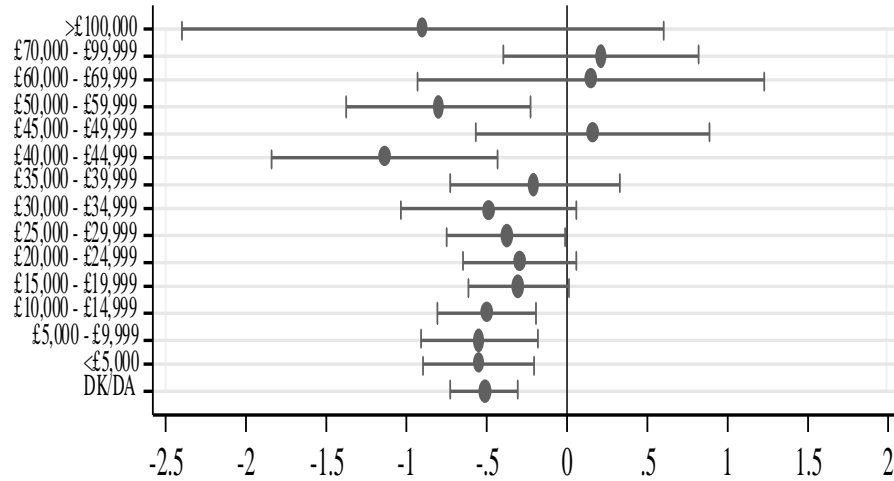


RD2 - Scottish sample

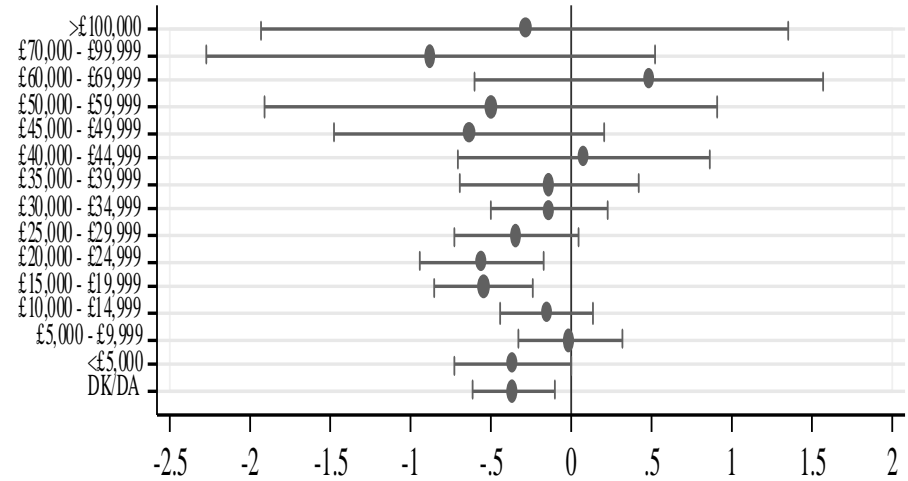


# Robustness: AMEs by income

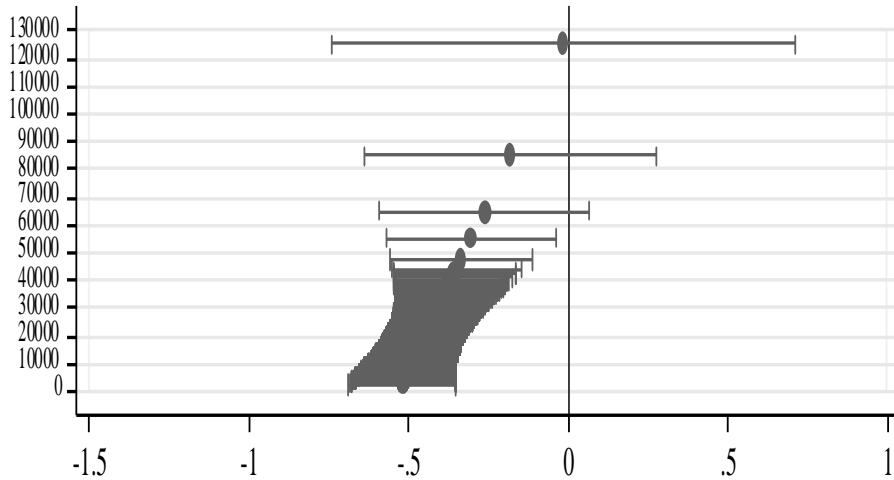
RD1 - GB sample



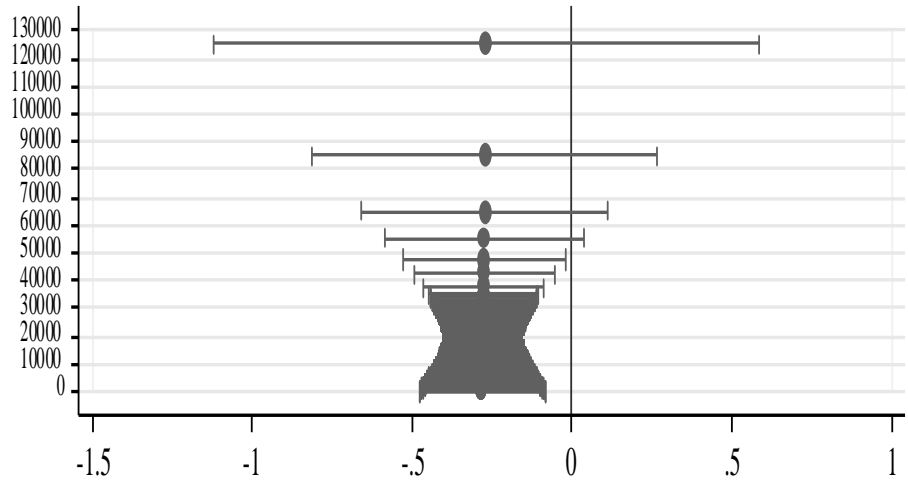
RD1 - Scottish sample



RD1 - GB sample

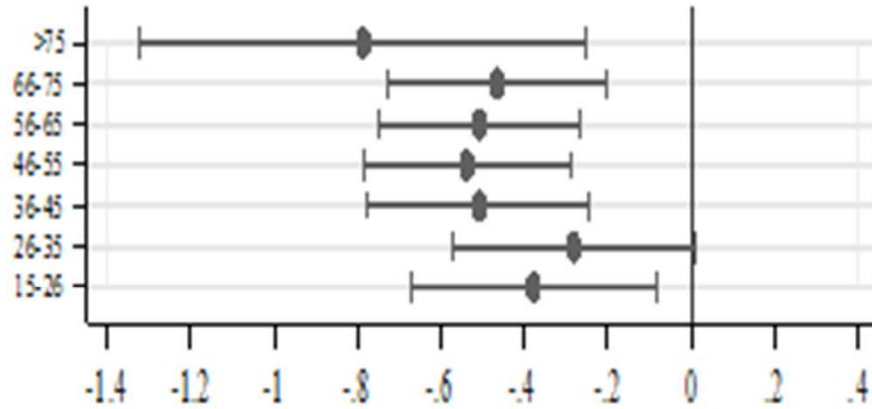


RD1 - Scottish sample

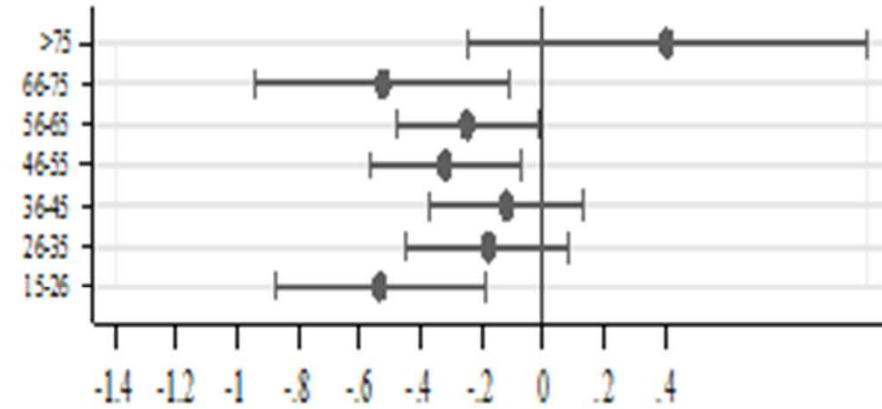


# Robustness: AMEs by age

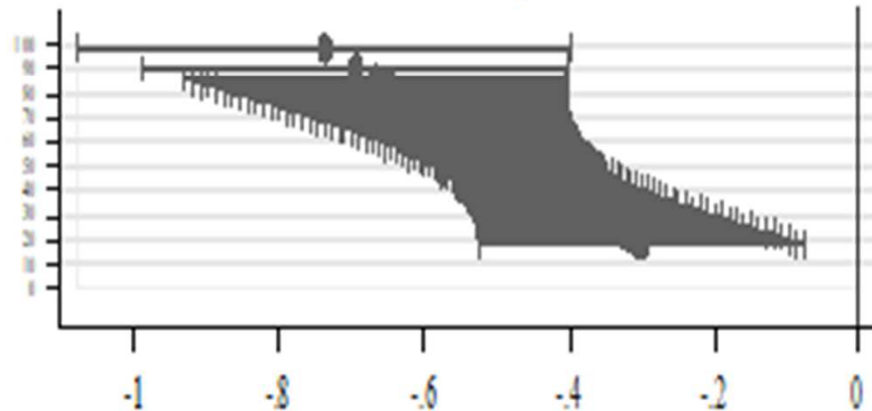
RD1 - GB sample



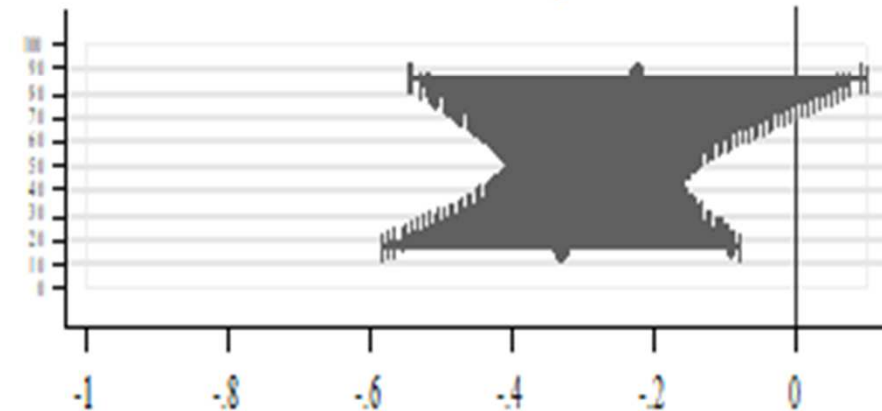
RD1 - Scottish sample



RD1 - GB sample

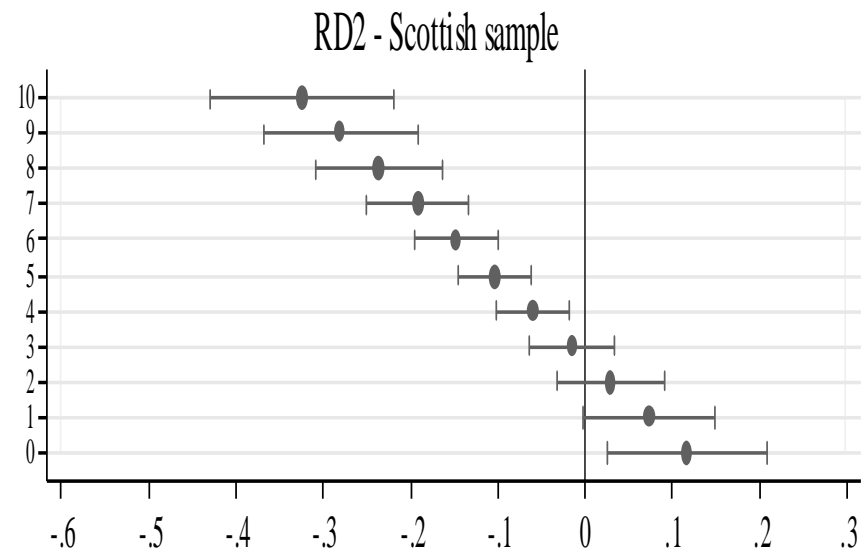
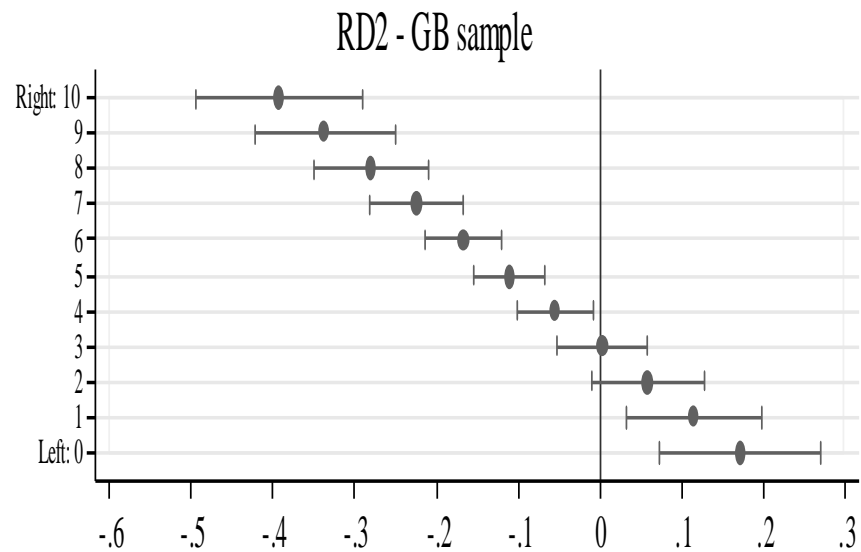
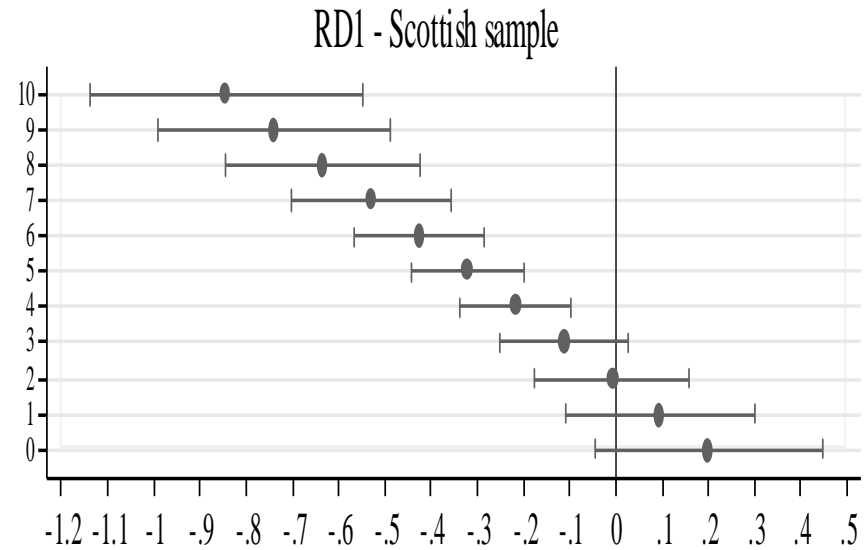
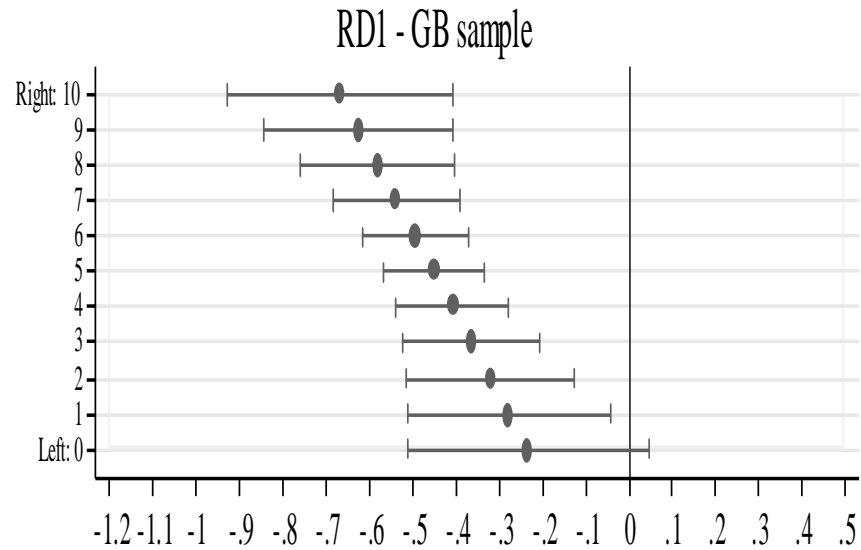


RD1 - Scottish sample



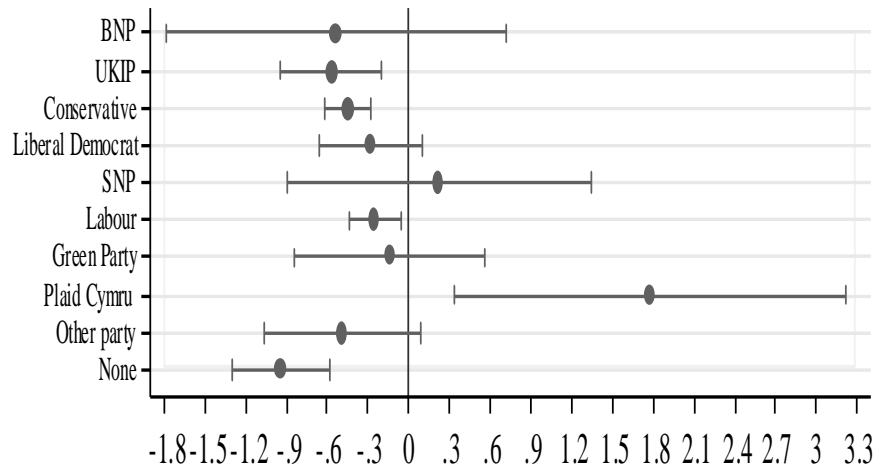


# Robustness: AMEs by political orientation

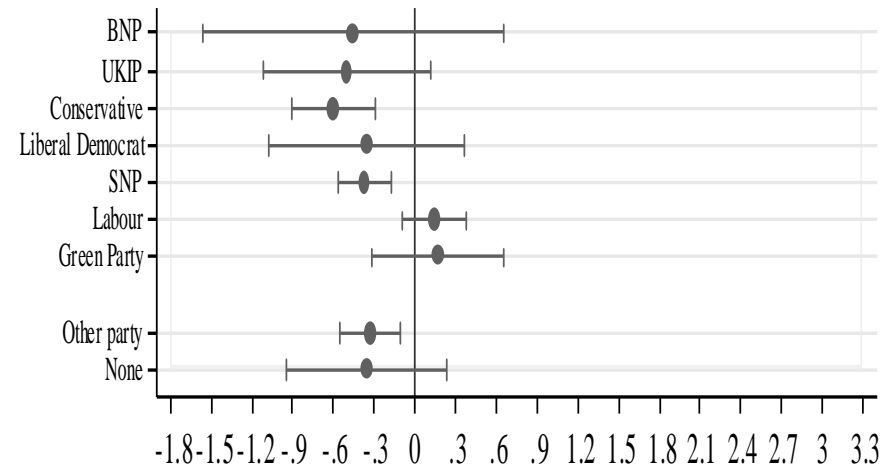


# Robustness: AMEs by party voting

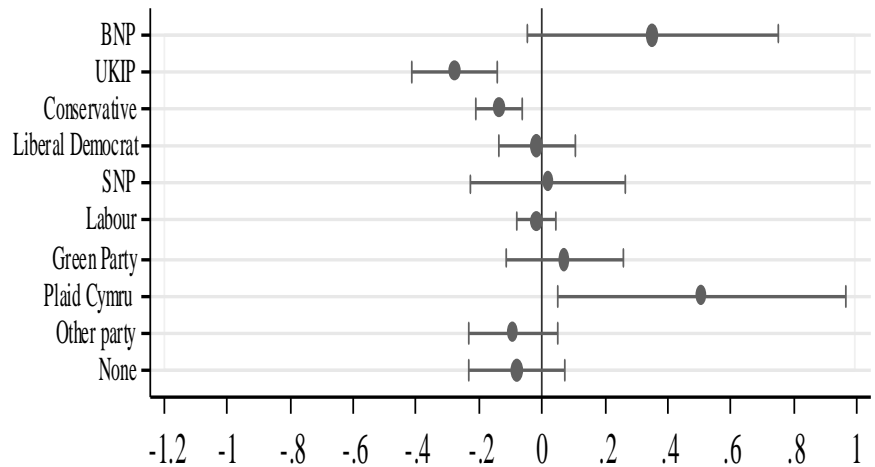
RD1 - GB sample



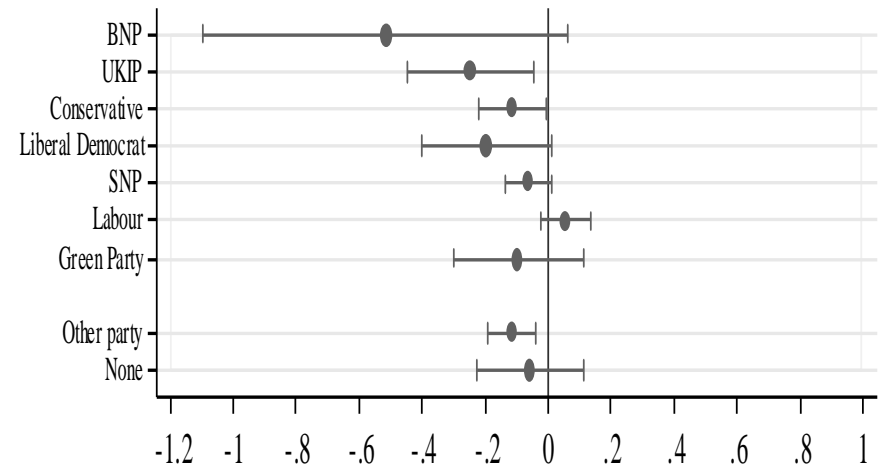
RD1 - Scottish sample



RD2 - GB sample



RD2 - Scottish sample



# Great! But, why?

- Wealth effect:
  - Generation of a wealth proxy based on regionally deflated home value per capita > £52,000 (> £49,000 in Scotland) and earning interest from savings and/or investments
- Backward-looking wealth comparison
  - Being rich/poor at age 14 (private school or businessman parent), and being rich/poor today (above wealth proxy)
- POUM hypothesis – Forward-looking wealth expectation
  - Being rich/poor today (above wealth proxy) and expecting to be rich/poor in 12 months (likelihood that there will be times when you don't have enough money to cover your day to day living costs [1–5])

# Mechanisms 1: Wealth?

	<u>GB sample</u>			<u>Scottish sample</u>		
<b>Panel A: RD<sub>1</sub>: “Government should try to make incomes more equal”</b>	(1)	(2)	(3)	(4)	(5)	(6)
Fin. literacy: #Correct responses	-	-0.445***	-0.439***	-	-0.287***	-0.261***
		[0.059]	[0.062]		[0.061]	[0.064]
Wealth proxy	-0.390***	-0.264*	-0.078	-0.340**	-0.259*	0.535
	[0.150]	[0.148]	[0.552]	[0.153]	[0.150]	[0.426]
Fin. literacy*Wealth proxy	-	-	-0.074	-	-	-0.329**
			[0.198]			[0.163]
Male	0.030	0.153	0.153	0.213*	0.296***	0.295***
	[0.109]	[0.109]	[0.109]	[0.112]	[0.113]	[0.113]
Trade union member	0.250*	0.259*	0.260*	0.630*	0.642*	0.643*
	[0.149]	[0.149]	[0.149]	[0.363]	[0.362]	[0.361]
Experienced income shock in last year	0.472***	0.446***	0.446***	1.171***	1.145***	1.146***
	[0.161]	[0.161]	[0.160]	[0.173]	[0.172]	[0.172]
Political orientation: 0 (left)-10 (Right)	-0.495***	-0.493***	-0.493***	-0.547***	-0.547***	-0.547***
	[0.026]	[0.025]	[0.025]	[0.026]	[0.026]	[0.026]
Businessman father	-0.455**	-0.397**	-0.399**	-0.299	-0.273	-0.28
	[0.194]	[0.189]	[0.189]	[0.203]	[0.201]	[0.200]
Private school	-0.138	-0.187	-0.185	-0.316**	-0.303*	-0.316**
	[0.125]	[0.124]	[0.124]	[0.161]	[0.160]	[0.160]
	-	-0.445	-0.439	-	-0.287	-0.261
%Financial literacy effect	-	-8.7%	-8.6%	-	-4.6%	-4.2%
Linear prediction	5.1341	5.1341	5.1341	6.2387	6.2387	6.2387
No. of Observations	4,895	4,895	4,895	4,989	4,989	4,989

# Mechanisms 2: Lifetime wealth evolution?

	RD <sub>1</sub>				RD <sub>2</sub>			
	GB sample		Scottish sample		GB sample		Scottish sample	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fin. Literacy: #Correct responses	-0.445***	-0.416***	-0.118***	-0.109***	-0.283***	-0.257***	-0.088***	-0.089***
	[0.059]	[0.067]	[0.022]	[0.024]	[0.061]	[0.066]	[0.020]	[0.022]
Poor <sup>-1</sup> - Poor <sup>0</sup>	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}
Poor <sup>-1</sup> - Rich <sup>0</sup>	-0.312*	-0.236	-0.114**	0.068	-0.23	0.346	-0.085	-0.095
	[0.164]	[0.642]	[0.056]	[0.155]	[0.161]	[0.476]	[0.058]	[0.163]
Rich <sup>-1</sup> - Poor <sup>0</sup>	-0.024	0.29	-0.034	0.097	-0.458	-0.423	-0.123	-0.13
	[0.228]	[0.373]	[0.099]	[0.172]	[0.293]	[0.537]	[0.113]	[0.191]
Rich <sup>-1</sup> - Rich <sup>0</sup>	-0.062	0.838	-0.164	-1.201**	-0.852**	1.011	-0.236*	-0.366
	[0.311]	[0.867]	[0.141]	[0.483]	[0.394]	[0.970]	[0.136]	[0.352]
Fin. Literacy*Poor <sup>-1</sup> - Poor <sup>0</sup>	-	{Ref.}	-	{Ref.}	-	{Ref.}	-	{Ref.}
Fin. Literacy*Poor <sup>-1</sup> - Rich <sup>0</sup>	-	-0.037	-	-0.076	-	-0.241	-	0.004
		[0.230]		[0.061]		[0.180]		[0.065]
Fin. Literacy*Rich <sup>-1</sup> - Poor <sup>0</sup>	-	-0.166	-	-0.069	-	-0.007	-	0.003
		[0.145]		[0.064]		[0.203]		[0.071]
Fin. Literacy*Rich <sup>-1</sup> - Rich <sup>0</sup>	-	-0.365	-	0.385**	-	-0.746**	-	0.052
		[0.322]		[0.171]		[0.364]		[0.126]
<i>%Financial-literacy effect</i>	-8.7%	-8.1%	-3.4%	-3.2%	-4.5%	-4.1%	-2.4%	-2.4%
<i>Linear prediction</i>	5.1341	5.1341	3.4249	3.4249	6.2387	6.2387	3.7191	3.7191
<i>No. of Observations</i>	4,895	4,895	5,101	5,101	4,989	4,989	4,986	4,986

# Mechanisms 3: POUM

	RD <sub>1</sub>				RD <sub>2</sub>			
	GB sample		Scottish sample		GB sample		Scottish sample	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fin. literacy: #Correct responses	-0.431***	-0.455***	-0.270***	-0.261***	-0.110***	-0.120***	-0.085***	-0.076***
	[0.059]	[0.065]	[0.061]	[0.066]	[0.022]	[0.023]	[0.021]	[0.022]
Wealth proxy	-0.187	-0.194	-0.207	-0.201	-0.068	-0.071	-0.078	-0.073
	[0.148]	[0.148]	[0.150]	[0.151]	[0.053]	[0.053]	[0.053]	[0.053]
Future wealth proxy	-0.396***	-0.695*	-0.360***	-0.244	-0.250***	-0.374***	-0.086*	0.024
	[0.122]	[0.356]	[0.122]	[0.380]	[0.048]	[0.145]	[0.046]	[0.134]
Fin. literacy*Future wealth	-	0.130	-	-0.052	-	0.054	-	-0.049
		[0.137]		[0.147]		[0.056]		[0.053]
Male	0.156	0.157	0.293***	0.293***	0.218***	0.219***	0.235***	0.236***
	[0.109]	[0.109]	[0.113]	[0.113]	[0.044]	[0.044]	[0.040]	[0.040]
Trade-union member	0.243*	0.244*	0.655*	0.656*	0.115*	0.115*	0.196	0.197
	[0.148]	[0.148]	[0.360]	[0.361]	[0.062]	[0.062]	[0.128]	[0.128]
Experienced income shock	0.411**	0.412**	1.129***	1.129***	0.329***	0.329***	0.415***	0.415***
	[0.161]	[0.161]	[0.173]	[0.173]	[0.064]	[0.064]	[0.060]	[0.060]
Risk-taker: 1 (Low) - 4 (High)	-0.092	-0.094	-0.097	-0.096	-0.014	-0.015	-0.046	-0.046
	[0.086]	[0.086]	[0.089]	[0.089]	[0.034]	[0.034]	[0.032]	[0.032]
Political orientation: 0 (L)-10 (R)	-0.487***	-0.487***	-0.541***	-0.541***	-0.183***	-0.183***	-0.208***	-0.208***
	[0.025]	[0.025]	[0.026]	[0.026]	[0.009]	[0.009]	[0.009]	[0.009]
Businessman father	-0.379**	-0.377**	-0.292	-0.293	-0.176**	-0.177**	-0.022	-0.023
	[0.189]	[0.189]	[0.200]	[0.200]	[0.080]	[0.079]	[0.079]	[0.080]
Private school	-0.184	-0.186	-0.305*	-0.304*	0.065	0.065	-0.123**	-0.123**
	[0.124]	[0.124]	[0.160]	[0.160]	[0.052]	[0.052]	[0.058]	[0.058]
<i>%Financial-literacy effect</i>	-8.4%	-8.9%	-4.3%	-4.2%	-3.2%	-3.5%	-2.3%	-2.0%
<i>Linear prediction</i>	5.1341	5.1341	6.2387	6.2387	3.4249	3.4249	3.7191	3.7191
<i>No. of Observations</i>	4,895	4,895	4,989	4,989	5,101	5,101	4,986	4,986

# Mechanisms 3: POUM

	RD <sub>1</sub>				RD <sub>2</sub>			
	GB sample		Scottish sample		GB sample		Scottish sample	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fin. literacy: #Correct responses	-0.431***	-0.439***	-0.270***	-0.248***	-0.110***	-0.121***	-0.085***	-0.079***
	[0.059]	[0.067]	[0.061]	[0.069]	[0.022]	[0.024]	[0.021]	[0.023]
Poor <sup>0</sup> - Poor <sup>1</sup>	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}
Poor <sup>0</sup> - Rich <sup>1</sup>	-0.368***	-0.551	-0.285**	-0.265	-0.251***	-0.399**	-0.049	0.082
	[0.137]	[0.377]	[0.135]	[0.407]	[0.055]	[0.162]	[0.051]	[0.143]
Rich <sup>0</sup> - Poor <sup>1</sup>	-0.122	0.738	-0.009	0.621	-0.07	-0.087	0.027	0.048
	[0.191]	[0.599]	[0.192]	[0.480]	[0.068]	[0.188]	[0.067]	[0.170]
Rich <sup>0</sup> - Rich <sup>1</sup>	-0.638***	-1.508	-0.768***	-0.197	-0.316***	-0.323	-0.266***	-0.712***
	[0.202]	[0.956]	[0.208]	[0.930]	[0.071]	[0.273]	[0.077]	[0.264]
Fin. Literacy*Poor <sup>0</sup> - Poor <sup>1</sup>	-	{Ref.}	-	{Ref.}	-	{Ref.}	-	{Ref.}
Fin. Literacy*Poor <sup>0</sup> - Rich <sup>1</sup>	-	0.081	-	-0.013	-	0.067	-	-0.059
		[0.149]		[0.161]		[0.064]		[0.057]
Fin. Literacy*Rich <sup>0</sup> - Poor <sup>1</sup>	-	-0.343	-	-0.28	-	0.009	-	-0.011
		[0.220]		[0.197]		[0.074]		[0.071]
Fin. Literacy*Rich <sup>0</sup> - Rich <sup>1</sup>	-	0.337	-	-0.222	-	0.006	-	0.164*
		[0.339]		[0.331]		[0.100]		[0.099]
<i>%Financial-literacy effect</i>	-8.4%	-8.6%	-4.3%	-4.0%	-3.2%	-3.5%	-2.3%	-2.1%
<i>Linear prediction</i>	5.1341	5.1341	6.2387	6.2387	3.4249	3.4249	3.7191	3.7191
<i>No. of Observations</i>	4,895	4,895	4,989	4,989	5,101	5,101	4,986	4,986

## Great! But, why?

- Corneo and Grüner (2002): HOE, PVE, and SRE effect
  - HOE: Generation of a proxy of the individual's net pecuniary gain from governmental redistribution. The support in favour of e.g. the more redistributive policies can be inversely related to an individual's position in the income scale. Then, the HOE is obtained as the difference of the logarithm of personal income minus the logarithm of median income in the parliamentary constituency
  - PVE: Data on individual beliefs about success factors or data on the mobility experience of individuals [1–5]: (i) When someone is unemployed, it's usually through no fault of their own; and (ii) In business, bonuses are a fair way to reward hard work
  - SRE: Individuals form political attitudes based the consideration that governmental redistribution affects the quality of their social environment



# Mechanisms 4: HOE, PVE, SRE

	GB sample				Scottish sample		
<b>Panel A: RD<sub>1</sub></b>	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Fin. literacy: #Correct	-	-0.416***	-0.415***	-0.416***	-0.415***	-0.280***	-0.278***
		[0.059]	[0.059]	[0.059]	[0.059]	[0.059]	[0.059]
HOE	-0.273***	-0.247***	-0.354**	-0.246***	-0.345**	-0.099	-0.107
	[0.069]	[0.068]	[0.142]	[0.068]	[0.143]	[0.142]	[0.142]
Fin. Literacy*HOE	-	-	0.050	-	0.046	-0.006	-0.002
			[0.054]		[0.054]	[0.057]	[0.057]
PVE	-0.518***	-0.506***	-0.550***	-0.506***	-0.554***	-0.226*	-0.228*
	[0.064]	[0.063]	[0.150]	[0.063]	[0.150]	[0.133]	[0.133]
Fin. Literacy*PVE	-	-	0.021	-	0.022	-0.230***	-0.230***
			[0.060]		[0.060]	[0.055]	[0.055]
SRE	-0.220***	-0.214***	0.032	-	-	-0.258*	-
	[0.052]	[0.051]	[0.145]			[0.156]	
Fin. Literacy*SRE	-	-	-0.114**	-	-	0.036	-
			[0.058]			[0.063]	
DVD	-	-	-	-0.130**	-0.046	-	-0.019
				[0.054]	[0.154]		[0.164]
Fin. Literacy*DVD	-	-	-	-	-0.039	-	-0.059
					[0.061]		[0.068]
UVD	-	-	-	0.126**	-0.086	-	0.304*
				[0.058]	[0.170]		[0.156]
Fin. Literacy*UVD	-	-	-	-	0.098	-	-0.103*
					[0.067]		[0.061]
Wealthy	-0.400***	-0.284*	-0.283*	-0.284*	-0.281*	-0.319**	-0.310**
	[0.149]	[0.146]	[0.146]	[0.146]	[0.146]	[0.147]	[0.148]
<i>No. of Observations</i>	4,826	4,826	4,826	4,826	4,826	4,861	4,861

# Great! But, why?

- Okun's efficiency–equity tradeoff
  - Efficiency: How necessary do you think it is for the UK Government to eliminate the deficit over the next 3 years – that is close the gap between what the government spends and what it raises in taxes?
  - Efficiency–equity I: If the government does cut the deficit over the next 3 years, should it do so mainly by increasing taxes, by cutting public spending, or by a mixture of both?

## Robustness: Given the BREXIT referendum came as a shock

- Efficiency–equity II:
  - How much do you agree or disagree that the EU has...made Britain more prosperous
  - Would you say that each of these countries gets more or less than its fair share of EU spending... Britain?
- Efficiency–equity III: Do you think the following would be better, worse or about the same if the UK leaves the European Union?
  - The general economic situation in the UK
  - My personal financial situation

# Mechanisms 5: Efficiency–Equity Tradeoff

	RD <sub>1</sub>				RD <sub>2</sub>			
	GB sample		Scottish sample		GB sample		Scottish sample	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fin. literacy: #Correct responses	-0.431*** [0.060]	-0.031 [0.262]	-0.284*** [0.061]	0.010 [0.167]	-0.124*** [0.022]	0.006 [0.082]	-0.097*** [0.021]	-0.051 [0.063]
↓ Deficit: Completely unnecessary	-	{Ref.}	-	{Ref.}	-	{Ref.}	-	{Ref.}
↓ Deficit: Not necessary, but desirable	-0.265 [0.296]	0.456 [0.750]	-0.935*** [0.179]	-0.732 [0.489]	-0.229*** [0.082]	-0.030 [0.229]	-0.303*** [0.069]	-0.360** [0.171]
↓ Deficit: Important, but not necessary	-0.770*** [0.287]	-0.018 [0.702]	-1.353*** [0.175]	-0.912* [0.471]	-0.468*** [0.083]	-0.240 [0.227]	-0.462*** [0.066]	-0.333** [0.158]
↓ Deficit: Completely necessary	-0.887*** [0.303]	0.395 [0.737]	-1.443*** [0.202]	-0.055 [0.500]	-0.623*** [0.088]	-0.152 [0.226]	-0.653*** [0.075]	-0.513*** [0.170]
↓ Deficit: Don't know	0.165 [0.451]	1.067 [0.841]	-1.419*** [0.456]	-0.937 [0.676]	-0.455*** [0.131]	-0.179 [0.255]	-0.571*** [0.122]	-0.435** [0.185]
↓ Deficit: Not asked	-0.545* [0.305]	0.237 [0.730]	-0.180 [0.469]	0.626 [0.713]	-0.428*** [0.086]	-0.149 [0.226]	-0.338* [0.180]	-0.042 [0.265]
Fin. Literacy*↓ Deficit: Completely unnecessary	-	{Ref.}	-	{Ref.}	-	{Ref.}	-	{Ref.}
Fin. Literacy*↓ Deficit: Not necessary, but desirable	-	-0.342 [0.295]	-	-0.094 [0.195]	-	-0.092 [0.093]	-	0.028 [0.074]
Fin. Literacy*↓ Deficit: Important, but not necessary	-	-0.358 [0.277]	-	-0.21 [0.186]	-	-0.106 [0.090]	-	-0.061 [0.069]
Fin. Literacy*↓ Deficit: Completely necessary	-	-0.612** [0.293]	-	-0.695*** [0.202]	-	-0.224** [0.092]	-	-0.069 [0.074]
Fin. Literacy*↓ Deficit: Don't know	-	-0.460 [0.464]	-	-0.119 [0.472]	-	-0.125 [0.139]	-	-0.118 [0.121]
Fin. Literacy*↓ Deficit: Not asked	-	-0.368 [0.292]	-	-0.501 [0.378]	-	-0.129 [0.094]	-	-0.284* [0.159]
%Financial-literacy effect	-8.4%	-0.6%	-4.6%	0.2%	-3.6%	0.2%	-2.6%	-1.4%
Linear prediction	5.1341	5.1341	6.2387	6.2387	3.4249	3.4249	3.7191	3.7191
No. of Observations	4,895	4,895	4,989	4,989	5,101	5,101	4,986	4,986

# Mechanisms 5: Efficiency–Equity Tradeoff

	RD <sub>1</sub>				RD <sub>2</sub>			
	GB sample		Scottish sample		GB sample		Scottish sample	
<b>Panel B: Categorical efficiency-equity tradeoff</b>								
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Fin. literacy: #Correct responses	-0.423*** [0.060]	-0.221 [0.166]	-0.280*** [0.061]	-0.113 [0.120]	-0.111*** [0.022]	0.101 [0.065]	-0.094*** [0.021]	0.003 [0.041]
↓ Deficit: ↑ <i>T</i> only	–	{Ref.}	–	{Ref.}	–	{Ref.}	–	{Ref.}
↓ Deficit: ↑ <i>T</i> > ↓ <i>G</i>	-0.627*** [0.201]	-0.553 [0.533]	-0.822*** [0.155]	-1.247*** [0.451]	-0.114* [0.069]	0.428** [0.190]	-0.189*** [0.055]	-0.152 [0.157]
↓ Deficit: ↑ <i>T</i> = ↓ <i>G</i>	-1.024*** [0.197]	-0.575 [0.486]	-1.431*** [0.148]	-0.853** [0.353]	-0.468*** [0.071]	-0.081 [0.189]	-0.488*** [0.053]	-0.254** [0.116]
↓ Deficit: ↑ <i>T</i> < ↓ <i>G</i>	-1.494*** [0.231]	-0.969 [0.661]	-2.087*** [0.194]	-1.548*** [0.547]	-0.720*** [0.081]	-0.011 [0.225]	-0.757*** [0.071]	-0.322* [0.173]
↓ Deficit: ↓ <i>G</i> only	-1.141*** [0.271]	0.552 [0.748]	-1.474*** [0.239]	0.495 [0.589]	-0.578*** [0.092]	0.353 [0.216]	-0.730*** [0.095]	-0.178 [0.212]
↓ Deficit: Don't know	-0.529 [0.362]	0.737 [0.635]	-0.922*** [0.274]	-0.768 [0.473]	-0.312*** [0.108]	-0.073 [0.217]	-0.399*** [0.095]	-0.168 [0.150]
↓ Deficit: Not asked	-0.844*** [0.220]	-0.559 [0.522]	–	–	-0.378*** [0.074]	0.105 [0.189]	–	–
Fin. Literacy* ↓ Deficit: ↑ <i>T</i> only	–	{Ref.}	–	{Ref.}	–	{Ref.}	–	{Ref.}
Fin. Literacy* ↓ Deficit: ↑ <i>T</i> > ↓ <i>G</i>	–	-0.041 [0.206]	–	0.198 [0.180]	–	-0.255*** [0.077]	–	-0.017 [0.063]
Fin. Literacy* ↓ Deficit: ↑ <i>T</i> = ↓ <i>G</i>	–	-0.218 [0.189]	–	-0.290** [0.145]	–	-0.183** [0.074]	–	-0.113** [0.050]
Fin. Literacy* ↓ Deficit: ↑ <i>T</i> < ↓ <i>G</i>	–	-0.253 [0.253]	–	-0.264 [0.212]	–	-0.327*** [0.089]	–	-0.203*** [0.072]
Fin. Literacy* ↓ Deficit: ↓ <i>G</i> only	–	-0.774*** [0.293]	–	-0.993*** [0.246]	–	-0.437*** [0.092]	–	-0.276*** [0.089]
Fin. Literacy* ↓ Deficit: Don't know	–	-0.853*** [0.318]	–	0.025 [0.258]	–	-0.034 [0.113]	–	-0.126 [0.085]
Fin. Literacy* ↓ Deficit: Not asked	–	-0.133 [0.208]	–	–	–	-0.230*** [0.079]	–	–
Wealthy	-0.222 [0.148]	-0.213 [0.148]	-0.213 [0.144]	-0.200 [0.142]	-0.104** [0.051]	-0.104** [0.051]	-0.077 [0.051]	-0.073 [0.051]
Linear prediction	5.1341	5.1341	6.2387	6.2387	3.4249	3.4249	3.7191	3.7191
No. of Observations	4,895	4,895	4,989	4,989	5,101	5,101	4,986	4,986

# Mechanisms 5: Efficiency–Equity Tradeoff

	RD <sub>1</sub>				RD <sub>2</sub>			
	GB sample		Scottish sample		GB sample		Scottish sample	
<b>Panel A: Continuous efficiency-equity tradeoff</b>								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fin. literacy: #Correct responses	-0.431*** [0.068]	-0.002 [0.172]	-0.289*** [0.063]	0.356** [0.158]	-0.121*** [0.025]	0.122* [0.063]	-0.095*** [0.021]	0.114** [0.053]
Efficiency-equity tradeoff	-0.337*** [0.058]	-0.009 [0.153]	-0.501*** [0.052]	-0.012 [0.136]	-0.196*** [0.021]	-0.015 [0.049]	-0.220*** [0.019]	-0.063 [0.044]
FL*Efficiency-equity tradeoff	-	-0.152** [0.060]	-	-0.237*** [0.055]	-	-0.085*** [0.020]	-	-0.076*** [0.018]
Wealthy	-0.178 [0.152]	-0.182 [0.151]	-0.23 [0.145]	-0.21 [0.144]	-0.109** [0.053]	-0.111** [0.053]	-0.085 [0.052]	-0.079 [0.052]
Linear prediction	5.0909	5.0909	6.1982	6.1982	3.4054	3.4054	3.7132	3.7132
No. of Observations	3,956	3,956	4,794	4,794	4,066	4,066	4,777	4,777

# FQ Tradeoff – Robustness I – BREXIT I

	RD <sub>1</sub>				RD <sub>2</sub>		
	GB sample				Scotland	GB sample	Scotland
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Fin. literacy: #Correct responses	-0.147*** [0.056]	0.780*** [0.249]	-0.143** [0.056]	-0.190 [0.157]	0.686** [0.322]	0.154 [0.117]	0.532*** [0.116]
Wealth proxy	-0.345*** [0.121]	-0.331*** [0.121]	-0.347*** [0.121]	-0.327*** [0.121]	-0.431*** [0.151]	-0.115** [0.058]	-0.067 [0.065]
Efficiency	-0.180*** [0.056]	-0.189 [0.139]	–	–	0.048 [0.175]	0.09 [0.070]	0.067 [0.058]
Equity	0.256*** [0.079]	0.817*** [0.166]	–	–	0.440** [0.215]	0.073 [0.079]	0.324*** [0.074]
Fin. Literacy*Efficiency	–	0.016 [0.056]	–	–	-0.05 [0.070]	-0.064** [0.028]	-0.047* [0.026]
Fin. Literacy*Equity	–	-0.283*** [0.069]	–	–	-0.191** [0.091]	-0.01 [0.034]	-0.132*** [0.034]
Efficiency-equity (FQ) centile 1	–	–	–	{Ref.}	–	–	–
Efficiency-equity (FQ) centile 2	–	–	-0.388** [0.154]	-0.001 [0.474]	–	–	–
Efficiency-equity (FQ) centile 3	–	–	-0.576*** [0.152]	-0.895** [0.438]	–	–	–
Efficiency-equity (FQ) centile 4	–	–	-0.613*** [0.206]	-0.890* [0.520]	–	–	–
Efficiency-equity (FQ) centile 5	–	–	-0.951** [0.391]	-1.453** [0.592]	–	–	–
Fin. Literacy*FQ centile 1	–	–	–	{Ref.}	–	–	–
Fin. Literacy* FQ centile 2	–	–	–	-0.168 [0.178]	–	–	–
Fin. Literacy* FQ centile 3	–	–	–	0.156 [0.168]	–	–	–
Fin. Literacy* FQ centile 4	–	–	–	0.14 [0.207]	–	–	–
Fin. Literacy* FQ centile 5	–	–	–	0.354 [0.288]	–	–	–
Linear prediction	5.2918	5.2918	5.2918	5.2918	5.811	3.4298	3.6092
No. of Observations	3,264	3,264	3,264	3,264	3,215	3,264	3,215

# FQ Tradeoff – Robustness II – BREXIT II

	RD <sub>1</sub>				RD <sub>2</sub>		
	GB sample				Scotland	GB sample	Scotland
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Fin. literacy: #Correct responses	-0.126** [0.055]	-0.252 [0.286]	-0.113** [0.055]	-0.230* [0.129]	-0.092 [0.299]	-0.167 [0.124]	0.279*** [0.107]
Wealth proxy	-0.324*** [0.121]	-0.330*** [0.121]	-0.328*** [0.122]	-0.341*** [0.122]	-0.471*** [0.150]	-0.114** [0.057]	-0.092 [0.064]
Efficiency	-0.017 [0.069]	-0.293 [0.197]	-	-	0.159 [0.209]	-0.208** [0.083]	0.038 [0.077]
Equity	0.242** [0.104]	0.424 [0.283]	-	-	-0.374 [0.297]	0.194* [0.116]	0.146 [0.104]
Fin. Literacy*Efficiency	-	0.125 [0.077]	-	-	-0.112 [0.086]	0.105*** [0.034]	-0.053 [0.034]
Fin. Literacy*Equity	-	-0.084 [0.114]	-	-	0.102 [0.125]	-0.075 [0.048]	-0.062 [0.045]
Efficiency-equity (FQ) quartile 1	-	-	-	{Ref.}	-	-	-
Efficiency-equity (FQ) quartile 2	-	-	-0.044 [0.126]	-0.261 [0.341]	-	-	-
Efficiency-equity (FQ) quartile 3	-	-	-0.111 [0.155]	-0.794* [0.449]	-	-	-
Efficiency-equity (FQ) quartile 4	-	-	0.120 [0.344]	0.106 [0.773]	-	-	-
Fin. Literacy* FQ quartile 1	-	-	-	{Ref.}	-	-	-
Fin. Literacy* FQ quartile 2	-	-	-	0.099 [0.138]	-	-	-
Fin. Literacy* FQ quartile 3	-	-	-	0.307* [0.175]	-	-	-
Fin. Literacy* FQ quartile 4	-	-	-	0.010 [0.324]	-	-	-
Linear prediction	5.2918	5.2918	5.2918	5.2918	5.811	3.4298	3.6092
No. of Observations	3,264	3,264	3,264	3,264	3,215	3,264	3,215

# Conclusions

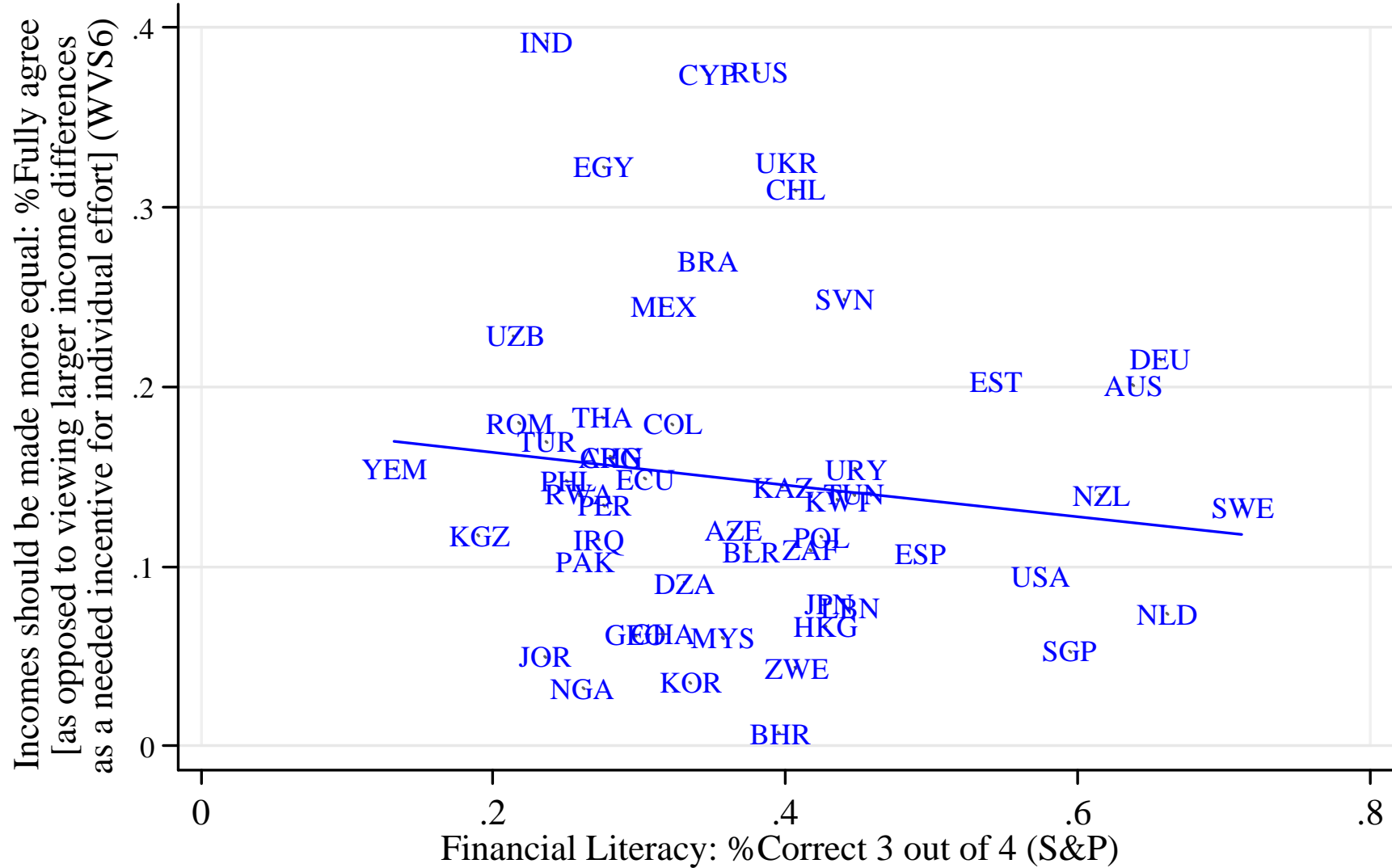
- Public dilemmas increasingly related to financial literacy and the understanding of the fundamentals of public – and often international finance!
  - Redistribution
  - **Referendums**
  - Political choices
- We find a large significant relationship between financial literacy and attitudes against redistribution and government intervention for income inequality
  - Results in the magnitude of 20-25%
- Recent evidence attributes 30-40% of income inequality in the US to differences in financial knowledge
  - We find a negative relationship between financial literacy and attitudes to redistribution
  - We find that the efficiency-equity tradeoff explains the negative relationship between financial literacy and attitudes to redistribution



# Some critical remarks

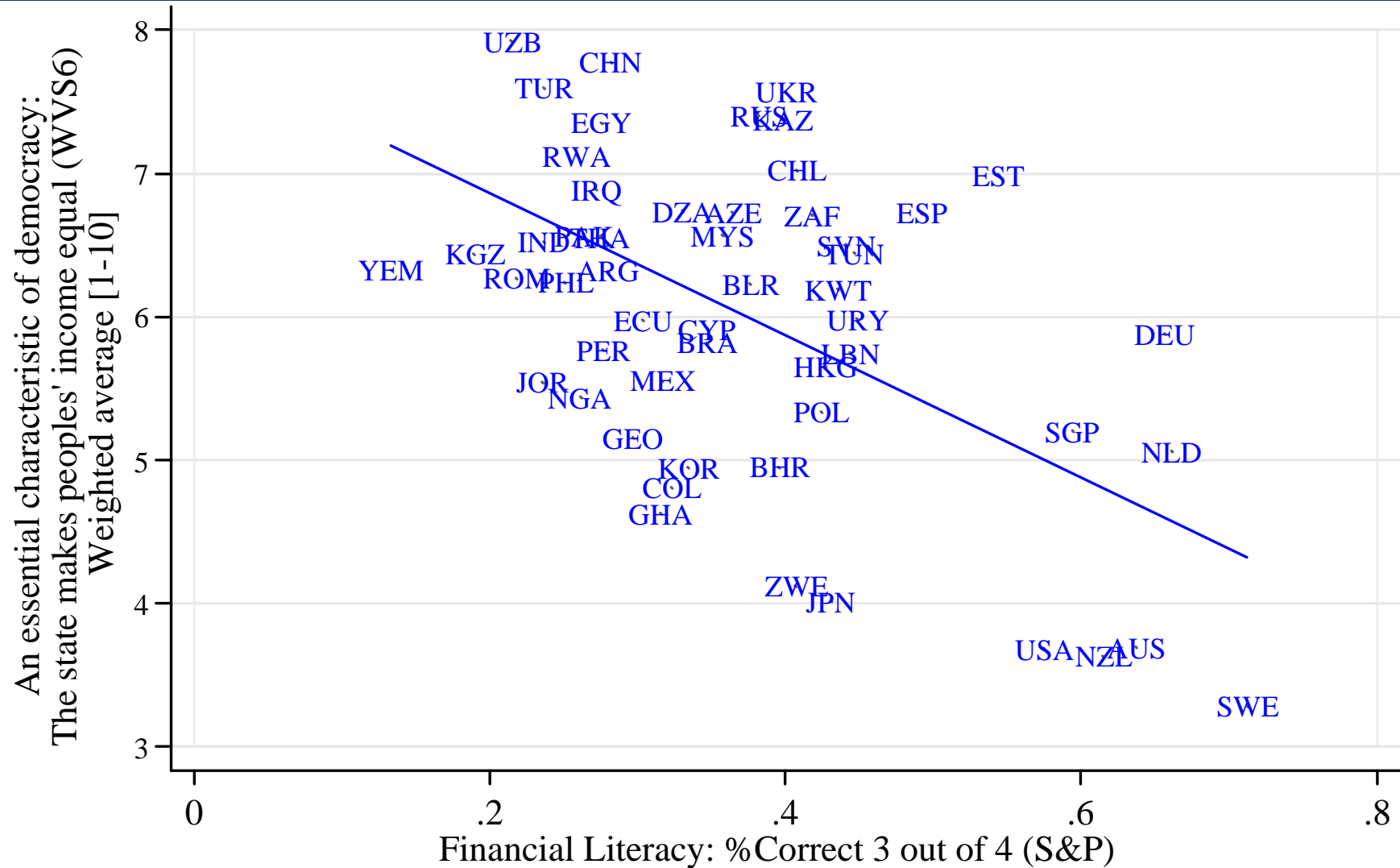
- We contribute to the literature on public economics, by presenting one additional main channel to those proposed in the literature on the formation of public attitudes, namely financial literacy
- We contribute to the literature on education economics
  - Our findings may potentially be taken into account when designing policy interventions, by including elements on economics of inequality with the objective to provide a broader view on the subject.
    - The efficiency-equity tradeoff is a component worth emphasizing upon
  - Alan and Ertac (2017) suggest educational interventions based on the PVE, i.e. believing in effort versus luck.
    - We find interventions based on affective channels are difficult to implement; In contrast, financial literacy is a cognitive process
- Finally, from a socioeconomics perspective, efforts to improve financial literacy can be seen as conducive to the processes of social constructivism and open democracy.

# Global Figure RD<sub>1</sub>: WDS<sub>6</sub>, S&P, WDI



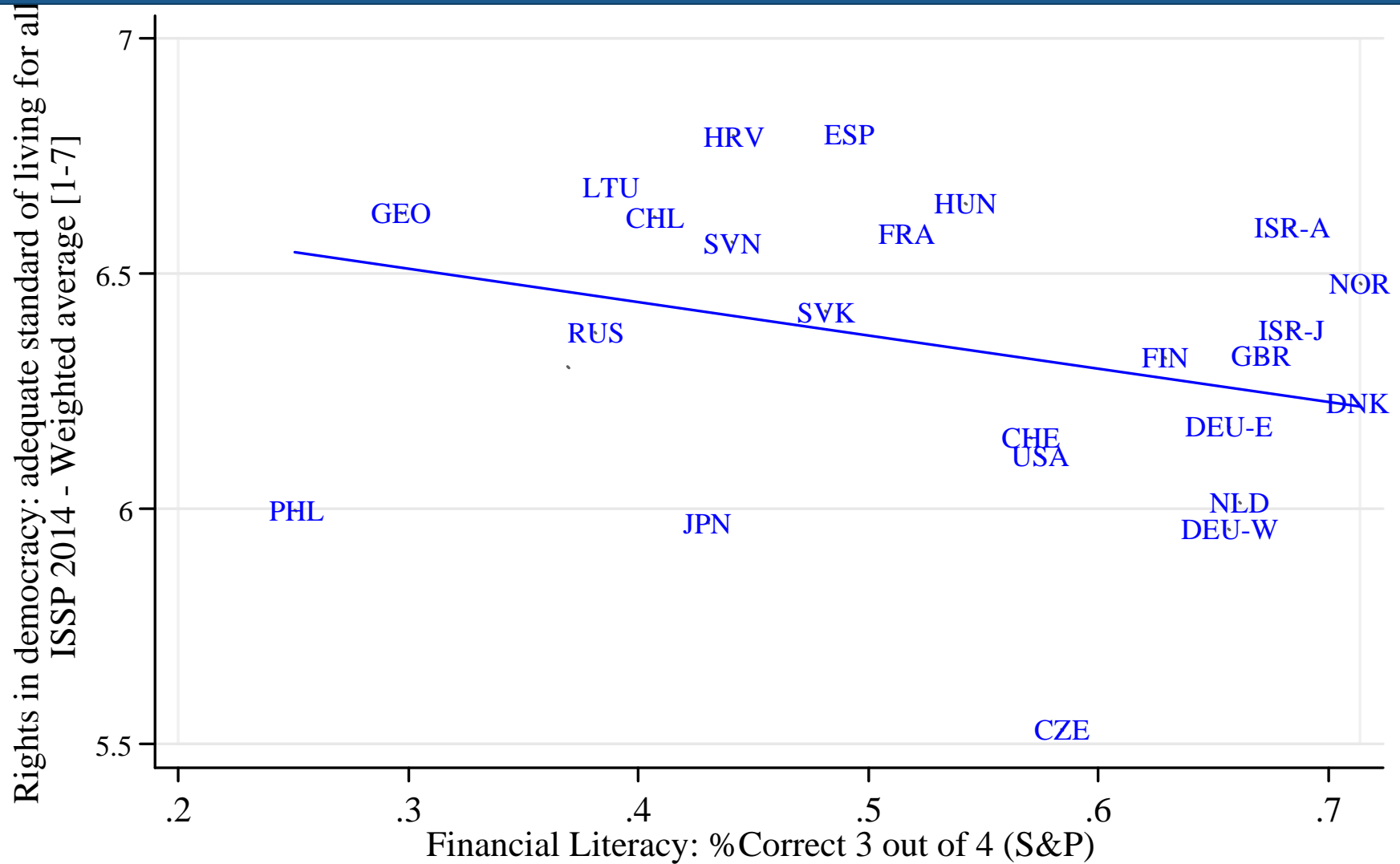
Figures are weighted by GDP per capita (PPP current international \$ - WDI)

# Global Figure RD<sub>2</sub>: WDS<sub>6</sub>, S&P, WDI



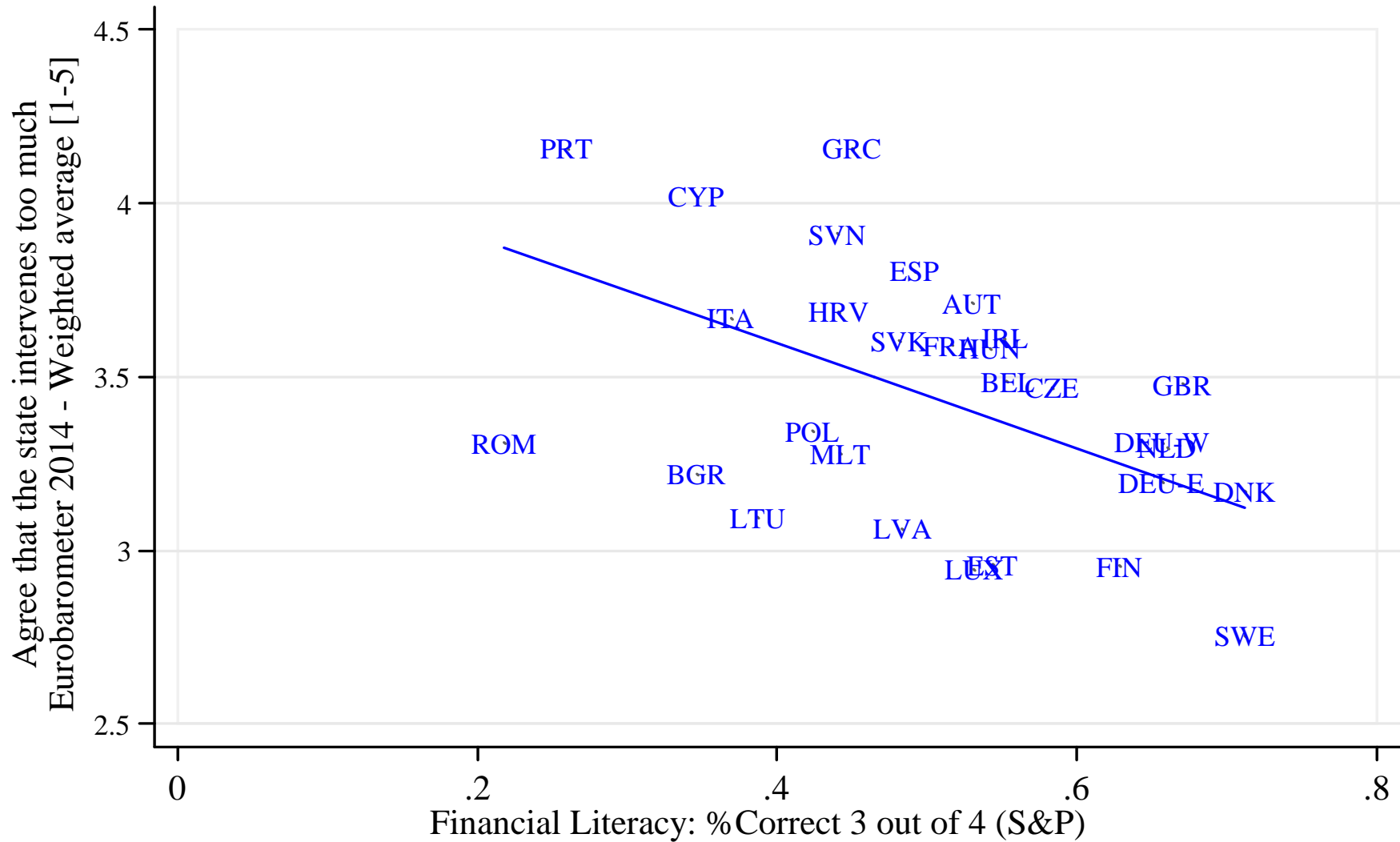
Figures are weighted by GDP per capita (PPP current international \$ - WDI)

# Global Figure: ISSP<sub>2014</sub>, S&P, WDI



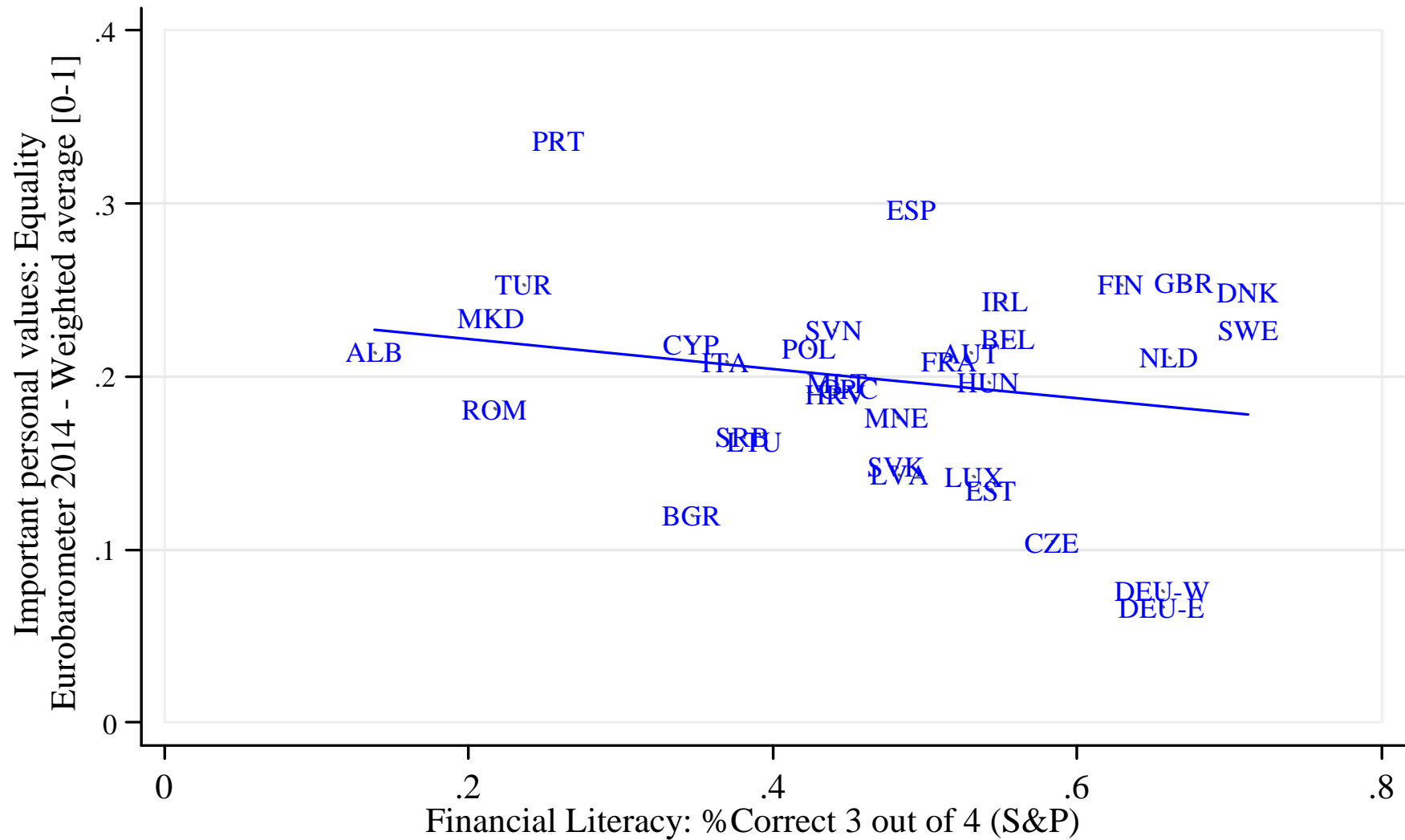
Figures are weighted by GDP per capita (PPP current international \$ - WDI)

# Global Figure: Eurobarometer<sub>2014</sub>, S&P, WDI



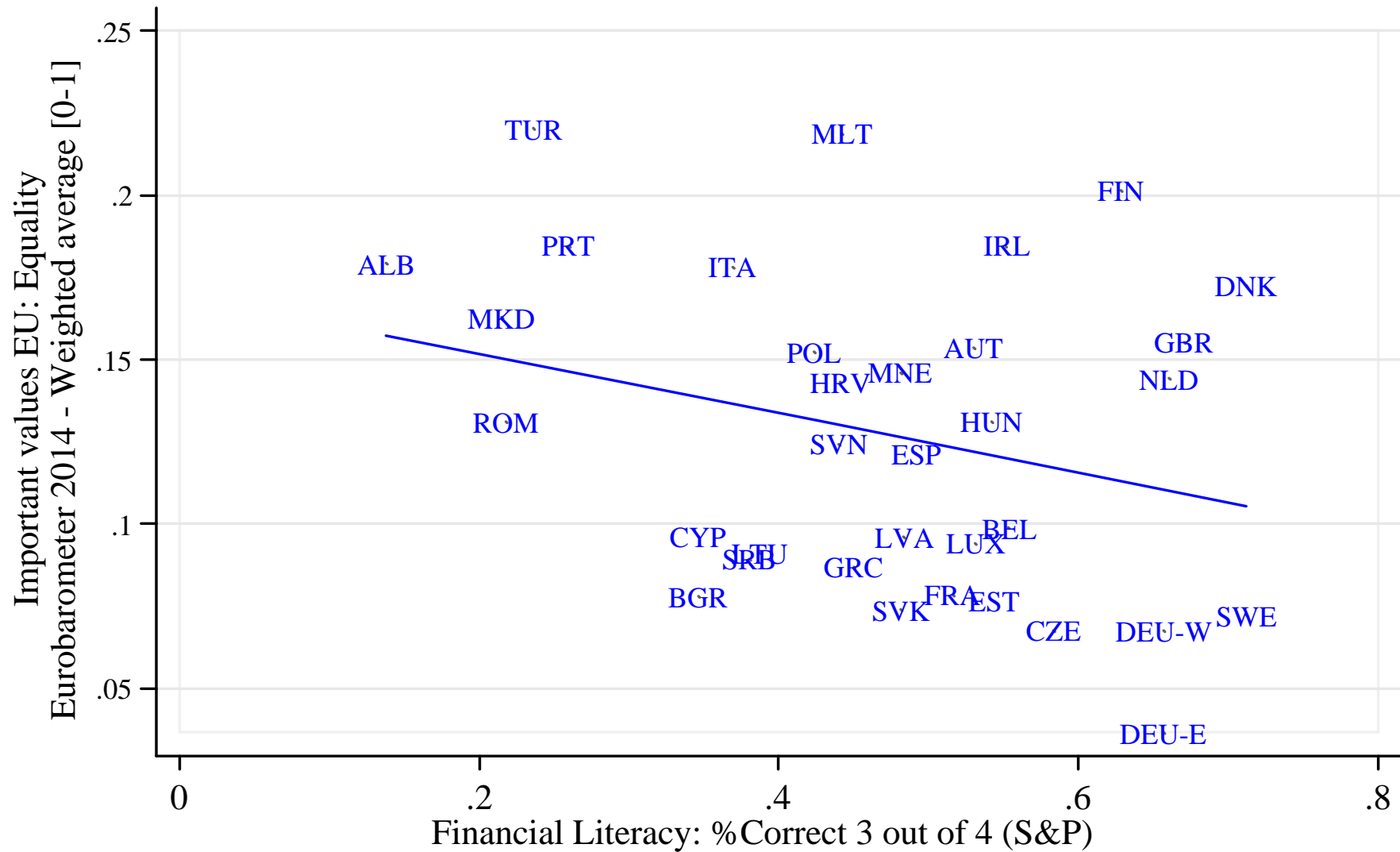
Figures are weighted by GDP per capita (PPP current international \$ - WDI)

# Global Figure: Eurobarometer<sub>2014</sub>, S&P, WDI



Figures are weighted by GDP per capita (PPP current international \$ - WDI)

# Global Figure: Eurobarometer<sub>2014</sub>, S&P, WDI



Figures are weighted by GDP per capita (PPP current international \$ - WDI)

# For those at the right: The companion paper

	<i>Don't Know</i>	<i>Left</i>	<i>Centre -left</i>	<i>Centre</i>	<i>Centre -right</i>	<i>Right</i>
<b>Panel A: Dependent variable – Left-right orientation</b>						
	(1)	(2)	(3)	(4)	(5)	(6)
Fin. literacy: #Correct responses	-0.059*** [0.007]	0.002 [0.004]	0.028*** [0.007]	-0.013 [0.009]	0.040*** [0.008]	0.001 [0.004]
<i>Predicted probability</i>	<i>0.197</i>	<i>0.053</i>	<i>0.169</i>	<i>0.308</i>	<i>0.220</i>	<i>0.054</i>
<i>%Financial literacy effect</i>	<i>-30.0%</i>	<i>3.8%</i>	<i>16.6%</i>	<i>-4.2%</i>	<i>18.2%</i>	<i>1.9%</i>
No. of observations	5,292					
Log-likelihood	-8,880.6					
<b>Panel B: Dependent variable – Left-right orientation derived from party identity and party orientation</b>						
	(7)	(8)	(9)	(10)	(11)	(12)
Fin. literacy: #Correct responses	-0.036*** [0.005]	-0.008 [0.005]	0.020** [0.008]	-0.016* [0.009]	0.047*** [0.009]	-0.008 [0.006]
<i>Predicted probability</i>	<i>0.105</i>	<i>0.087</i>	<i>0.175</i>	<i>0.254</i>	<i>0.252</i>	<i>0.127</i>
<i>%Financial literacy effect</i>	<i>-34.3%</i>	<i>-9.2%</i>	<i>11.4%</i>	<i>-6.3%</i>	<i>18.7%</i>	<i>-6.3%</i>
No. of observations	5,292					
Log-likelihood	-8,238.3					