Are the young more pro-redistribution ?

Age and cohort effects on Preferences for Redistribution -

Theory and Evidence from ESS 2009

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Résumé

Nous proposons une étude des effets d'âge et de génération sur la formation des préférences pour la redistribution. Tout d'abord, nous présentons un modèle simple à deux périodes afin de comprendre dans quelle mesure la période d'entrée sur le marché du travail peut affecter les choix en matière de redistribution. En faisant l'hypothèse que les individus connaissent une insertion professionnelle précaire durant la première période, et peuvent atteindre deux niveaux de revenus, l'un faible, l'autre élevé, lorsqu'ils rentrent dans l'emploi stable dans la deuxième période, nous montrons que même les individus ayant le plus haut niveau d'études et de qualifications, et donc le plus de chance de se retrouver avec un salaire élevé, vont choisir un taux de taxe non nul. La conclusion de cette première version du modèle est qu'en présence de précarité - et donc d'incertitude - à l'entrée sur le marché du travail, les jeunes vont en moyenne soutenir davantage les politiques de redistribution que les travailleurs plus âgés déjà dans l'emploi stable (effet assurance). Afin d'enrichir ce modèle, nous en proposons deux extensions illustrant chacune une caractéristique institutionnelle particulière de la période de l'insertion professionnelle. Dans la première, la période d'insertion est couverte par un transfert de revenu. Dans la seconde, les individus ont une information imparfaite sur leur probabilité d'obtenir un salaire élevé. Nous concluons que l'optimisme des jeunes quant à la rentabilité de leurs diplômes peut contrebalancer l'effet assurance. Dans un deuxième temps, nous entreprenons une évaluation empirique de nos hypothèses à l'aide de l'enquête ESS $n^o 4$ de 2008/9, une étude européenne portant sur 30 pays, afin de répondre à la question suivante : existe-t-il un effet de génération uniforme parmi les pays Européens, qui traduirait un consensus parmi les jeunes Européens sur la question de la redistribution ? Pour ce faire, nous nous sommes appuyés sur des statistiques descriptives portant sur la base entière, puis sur six pays pris séparément. Nous trouvons alors que le goût pour la redistribution a tendance à augmenter avec l'âge. En considérant la base dans sa totalité, il apparaît cependant que ce résultat est moins flagrant dans les pays dans lesquels la population juge que les conditions d'emploi pour les jeunes sont mauvaises. Les régressions par la méthode des moindres carrés ordinaires que nous avons menées par pays confirment ces résultats. Il apparaît donc probable que ce soient davantage les conditions socioéconomiques dans lesquelles sont placés les jeunes en insertion que les conflits d'intérêts entre générations qui soient déterminants pour comprendre les préférences pour la redistribution.

Abstract

In this dissertation, we propose a study of age and cohort effects on the preferences for redistribution. We present a two-periods-model in which we will look at the potential effects of uncertainty while entering adult life on the intensity of preferences for redistribution. We find that even highly educated young have a non null preferred tax rate because of the insurance effect. For this reason, we surmise that the young will support more redistribution than their elderly. We propose two extensions of this model illustrating hypothesis on the impact of institutional innovations on this age effect : (i) a disposal backing the first period of entry on the job market, and (ii) imperfect information on talents' rewarding in the society. These extensions make us presume that the over-optimism effect may dominate the insurance effect. We provide then an empirical evaluation using the ESS n^o4 survey of the year 2008/9, an European data set, to answer the following question : could there exist uniform age/cohort effects on the formation of preferences for redistribution ? We present pooled and separate studies of cohort effects on six specific countries. Using OLS regressions, we show that the intensity of preferences increases with age. Our results suggest that the differential of preferences between the young and the old is reduced when we consider countries where people estimate the job opportunities for the young to be bad. We conclude then than socioeconomic conditions of the young are more relevant to understand preferences for redistribution than uniform conflict of interests between generations.

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Contents

1 | Introduction

Economists traditionally tackle the topic of the redistribution of wealth through the perspective of optimal taxation. Questions about the implementation of and political support for public policies have recently emerged with great frequency in the literature. In order to address the question of political support, scholars must identify relevant social groups and their particular interests with respect to a diverse set of policies, and undertake thorough analysis of this political demand.

In the continuing debate on the never-ending reform of the welfare state in Western Europe, understanding the evolution of the needs of the population is a crucial issue. However, demographic changes-particularly in the ratio of retired persons to the labor force and the young unemployed-may sophisticate or even counterbalance initial observations. Indeed, today in the 25 countries of the European Union, the population of people aged between 15 and 64 is four times greater than that of people over 65 [1]. According to the most recent projections of *Eurostat*, however, this number will decrease to triple that of the older population in 2020, and then only to double it by 2045. While political economy has already underlined the political power of the old, owing to their uniform voting behavior (particularly in the study of pensions systems), we propose as a preliminary to treat the problem the opposite way, by focusing on the young. Studying the socioeconomic conditions of this population is especially meaningful because the young are often described as the testing group of the evolution of the society.

We will then ask if there could exist uniform age/cohort effects on the formation of preferences for the redistribution of wealth. We explicitly separate pure *age effect* (the causality between belonging to a certain age group at a specific point in time and the intensity of preferences for redistribution), and *cohort effect* (the assumption that the mere fact of belonging to a certain cohort at a specific point in time partly determines the intensity of preferences for redistribution). This question attempts to account for potential institutional disposal built to support the lengthening period of time separating an individual's first entry on the job market and his/her acquisition of a steady position, and more generally to look at the fate awaiting young people in each society. Therefore, it calls for international comparisons, and takes into account features such as the link between income and education level, as well as the importance of the phenomenon of mass unemployment in European countries and the extent to which it concerns young people. Only after considering these concerns will we be able to define and accurately examine the foundations of the so-called intergenerational pact in each western European country, which becomes even more important when people begin to express fears about a conflict of interest between generations. It is needless to say that questioning the relationship of individuals to redistribution is a complex task, especially because a discussion about the consent to pay taxes implies a discussion about democracy. For this reason, we will not neglect the multidimensionality of the measure of the intensity

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[1] According to *Eurostat*, on January 1st, 2010, the young population (0-19 years old) accounted for 21.3%, the working-age population (20-64 years old) for 61.3%, and the old population (65 years old and over) for 17.4%.

of preferences for redistribution. The growing body of literature on distributive justice has approached the issue of conflict in the distribution of a set of goods among individuals by asking which criteria help individals to create definitions of fairness. This literature will therefore shed light on this multidimensionality.

We will first present the relevant literature on preferences for redistribution, both theoretical and empirical. Then we will propose a simple two-periods model in which we will look at the potential effects of insecurity during the transition to adult life on the intensity of preferences for redistribution. In this model, we will propose two extensions illustrating hypothesis about the impact of institutional innovations on this age effect. Nowadays, converging criticisms are expressed on the legacy of the welfare state in Western Europe. The use of a European data set, in particular through pooled and separate studies of cohort effects, allows us to compare our results and to see therefore if those criticisms could have a uniform generational origin or not, or depend on national characteristics. For this reason, we will propose descriptive statistics for six specific countries in the sample: France, Spain, the United Kingdom, Germany, Sweden, and Denmark. For each of these, we will test the correlation between membership in a specific cohort and the intensity of preferences for redistribution. Finally, given our results, and because preferences for redistribution are considered representative of political opinion, we will look at other relevant political topics and their relationships with age.

2 | Related literature

The first work on the question of preferences for redistribution have asked the following trivial question : who wants the redistribution ? In a preliminary approach, scholars have considered current income as a good predictor of individual attitudes towards redistribution. Meltzer & Richards ([14]) is one of the first article studying optimal taxation in terms of political equilibria. The authors chose a framework, in which a proportional tax on income is levied on individuals with different productivity and the proceeds are redistributed in a lump sum manner. They showed that under majority rule, the equilibrium tax share balances the budget and pays for the voters' choices. The lower is the pre-tax income of an individual, the higher is her desired tax rate. Therefore, the poor should be the main supporters of redistributive policies.

2.1 The impact of social mobility

The article from Piketty ([15]) is one of the first which has presented theoretically the role of social mobility on the formation of preferences for redistribution. Piketty argued that redistributive preferences may be determined by beliefs about the extent to which individuals have voluntary control over their earnings. In this view, past mobility experiences can have persistent impact on attitudes towards redistribution at given current incomes. In his model, agents care about a common social welfare function, but learn about the determinants of economic success only through personal or dynastic experimentation. Because this learning process involves costly effort, they end up with different long-run beliefs over the incentive costs of taxation.

Fong's perspective ([10]) differs from previous work on the fact that she suggests that preferences for redistribution are not essentially driven by self-interest, but by values and beliefs about distributive justice. She underlines the role of individuals beliefs on origin of inequalities. According to her, "people may prefer more redistribution to the poor if they believe that poverty is caused by circumstances beyond individual control". She focus on agents who know their true (stochastic) mobility process and who want to maximize the present value of their aftertax incomes, or that of their children. Their vote depends therefore on the way they assess their prospects for upward and downward mobility, compared to the rest of the population. The effect of beliefs in the source of income differences (merit or luck) on individual

opinions regarding redistribution is estimated using *Gallup Poll* data for the US in 1998. She finds that such beliefs have an independent effect on preferences for redistribution which cannot be explained through "self-interest".

One of the main contributions helping to understand how social mobility can determine preferences for redistribution is the article of Benabou & Ok ([5]). This article is a theoretical examination of the "Prospect of Upward mobility" hypothesis according to which the poor do not support high levels of redistribution because of the hope that they, or their offspring, may make it up in the income ladder. The authors propose to test if this hypothesis is compatible with rational expectations, or only related to a kind of "false consciousness". They make three assumptions : (i) Policies chosen today will persist into future periods. (ii) Agents are not too risk averse, to minimize the importance of the insurance motive for redistribution. (iii) Individuals or families who are currently poorer than average - for instance, the median voter - expect to become richer than average. The main result is the following : there exists a range of incomes below the mean where agents oppose lasting redistributions if and only if tomorrow's expected income is an *increasing and concave function of today's income*. Concavity of the transition function is theoretically justified as a form of decreasing returns: "as current income rises, the odds for future income improve, but at a decreasing rate". Starting from this, the concavity of the function allows the use of Jensen's inequality, which reflects the fact that the losses of the rich sum to more than the gains of the poor.

The authors propose an extension of the model, linking relative income prospects to the concavity of the mobility process with a stochastic setting, underlining the role of idiosyncratic income schocks. Their conclusion is the following : the skewness of these shocks counterbalances the POUM effect, by maintaining a positively skewed distribution of income realizations. The paper then examines the robustness of this taking into account aggregate uncertainty, longer horizons, discounting, risk aversion, and nonlinear taxation. Through an empirical test of the theory using PSID data, the authors find however that these expected income gains of the middle class are likely to be dominated, under standard values of risk aversion, by the desire for social insurance against the risks of downward mobility or stagnation.

2.2 From theory to empirical evidence : the role of subjective data

Only recently have subjective data ceased to be subject to skepticism. Despite methodological controversies, their use appears to be quite convenient to researchers. In her article, Senik ([17]) proposes an overhanging survey of the empirical literature using subjective data and sheds light on their contribution to the understanding of the effect of others'incomes on individual wellbeing. The author aims at disentangling on one hand direct effects, based on preference interedependence, from indirect effects, based on the provision of additional information.

2.2.1 The "culturalist" perspective

Several authors tried to open the black box of preferences in order to understand why the support of redistribution varies across countries even where inequalities of income are an important phenomenon, as in the US. Alesina is one of the authors embodying this culturalist perspective.

This cultural perspective relies on theoretical work on "indoctrination" as for example Benabou & Tirole's article (5). The model presented in this paper tries to explain why most people feel such a need to believe in a "just world", and why the frequency of this belief in a "just world" varies so much accros countries. In Alesina, Di Tella & MacCulloch (1), the authors show that on average individuals are less happy when inequality is high. The effect is more precisely defined statistically in Europe than in the US.

The article of Alesina & Giuliano (3) provides maybe the most general view of this perspective. Once presenting a review of the theoretical literature, this paper proposes a framework incorporating various effects previously studied separately by scholars. They summarize the different potential determinants of preferences for redistribution : different preferences may arise from individual history, from different cultures, indoctrination may influence people views... They present an empirical investigation for the US, using the *General Social Survey*, and for a larger set of countries, using the *World Values Survey*. They emphasize the role of historical experiences, cultural factors and personal history as major determinants. They unerline finally the role of political ideology and perception of fairness : "Individuals who believe that people try to take advantage of them, rather than being fair, have a strong desire for redistribution."

2.2.2 Measuring transitions : "objective" mobility and historical turning point

The article of Alesina & La Ferrara (2) tackles the question of the impact of future income prospects on preferences for redistribution. The interest of their approach is that they consider the role of the general mobility as objectively present in the society. They employ panel data to construct "objective" measures of expected gains and losses from redistribution for different categories of individuals. They find then that *ceteris paribus*, people who believe that the American society offers' equal opportunities are more averse to redistribution. Support for redistributive policies is negatively affected by "objective" measures of expected future income and by the likelihood of moving above an income threshold that is likely to separate the winners and the losers from redistribution.

One particularly interesting article is the one from Ravaillon & Lokshin (16), focusing on the particular setting of Russia in the 1990's. It proposes an empirical investigation of the "tunnel effect" from the *Russian Longitudinal Monitoring Survey* (RLMS). Using the *RRQ* question "Do you agree that the government must restrict the income of the rich ?", they try to capture the effect on the currently rich in upward or downward mobility. Therefore, they propose a model of preferences for governmental redistribution, in which the expected utility without income redistribution by the government is the sum of the current utility (known with certainty) and the expected future utility, where that expectation is formed over an uncertain distribution of future income.

2.3   Age groups and political sustainability of social policies

There is a vast literature studying the question of political sustainability of public policies, and of welfare state in particular. Some articles assume that cohorts have to be considered as groups of interests, using the vote to express their political support for a specific policy or insurance system.

One of these is the article of Casamatta, Cremer & Pestieau (7). In this paper, the authors tackle the following question : how does the issue of political support affect the design of social insurance ? They distinguishe between redistributive character and size of social protection. Among the three results they find, one is of major importance for us : a system which is less redistributive than otherwise optimal can appear appropriate, in order to ensure political support for an adequate level of coverage.

In his article, Tabellini (18) simply wonders why a majority of voters support a social security system that redistributes income towards a minority of the population. He makes then a central assumption : social security is a system that redistributes both across and within generations. This is the reason why it is supported by both the recipients of social security benefitsand the poorest taxpayers. He finally proves that the size of the social security program is larger, the greater the proportion of retired individuals in the population, and the greater the inequality of pre-tax income.

Following this idea, Conde-Ruiz & Galasso (8) argue - using a model contradicting the results of the traditional unidimensional voting models - that the elderly voters may prefer an age-based to an income-based transfer scheme, therefore decreasing the support enjoyed by income redistribution schemes. They show that if there is a sufficiently large proportion of elderly in the population and enough income inequality, then a welfare state composed of an income redistribution scheme and an unfunded social security system arises as the structure-induced equilibrium of the majority voting game.

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3 | Model

Optimal taxation with insecure entering adult life

3.1 General case

3.1.1 Presentation

The model aims at describing the impact of entering adult life on the determination of preferences for redistribution. Consider a population with a stationary size of N composed of two generations. Generation 0 enters adult life, during a period d_0, and generation 1 is composed of individuals who found a steady job for a period d_1. The utility of the individuals is separable accross periods 0 and 1. We suppose that there are two patterns of income during those periods :
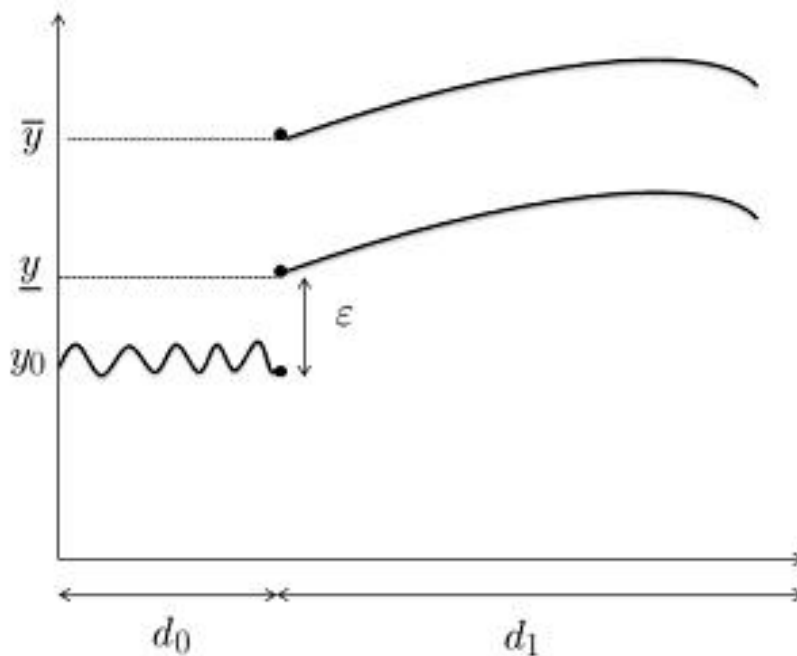
Figure 3.1: **Modelisation of income paths**

- In period 0, everybody perceives an income fluctuating around the value y_0, which is relatively small. This fluctuation aims at modelizing the precarious period of entering adult life characterized by the alternance between studies, internship, short terms contracts, unemployment, etc.

- In period 1, the individuals enter steady job. They can attain two different states, the good state in which they obtain $\overline{y}$, the upper level of income, and the bad state in which they obtain $\underline{y}$, the lower level of income.

The probability of succeed determining if the individuals find themselves in the good or in the bad state depends on one hand on their individual level of education θ_i, and on the uncertainty of the society, contained in the parameter π. Levels of education are distributed on the support $[\underline{\theta}; \overline{\theta}] \subset \mathcal{R}_+$, according to the cumulative distribution function G(.). An agent i is characterized by a level of education and will therefore be denoted by $\theta_i \in [\underline{\theta}; \overline{\theta}]$ The probability $\pi \times \theta_i$ is an increasing function of education θ_i, but also embodies the fact that the society can be arbitrary, as π is defined such that it is inferior to 1. We suppose also that the individuals are risk averse, the functional specification is then of a CRRA type in period 1.

The utility on the two periods is then defined by :

$$U = d_0 U(C_0) + d_1 \left[(1 - \pi(\theta)) U(\underline{C}) + \pi(\theta) U(\overline{C}) \right[\tag{3.1}$$

where $\underline{C}$ and $\overline{C}$ are the low and the high levels of consumption in the bad and the good states.

We define the expected income of period 1 as :

$$E(y_1^{pre}|\theta_i) = \pi(\theta_i)\overline{y} + (1 - \pi(\theta_i))\underline{y}$$

with $\pi(\theta_i) = \pi \times \theta_i$, $1 > \pi > 0$ and where $\overline{y}$ is the upper level of income, and $\underline{y}$ the lower level of income.

The individuals choose the level of taxation t in period 0, as they don't know in which state they are going to find themselves. The transfer t is levied on those who receive $\overline{y}$ and redistributed through an allocation proportional to t by a factor of b to those who receive $\underline{y}$. In order to balance this transfer, we impose the following constraint on b :

$$\pi \int_i \theta_i \overline{y} t d\theta_i = \int_i (1 - \pi\theta_i) b t d\theta_i \tag{3.2}$$

and if we assume that t is strictly between 0 and 1

$$b = \frac{\overline{y}\pi \int_i (\theta_i) d\theta_i}{\int_i (1 - \pi \times \theta_i) d\theta_i} \tag{3.3}$$

The individuals choose their preferred t through the maximization of their expected utility of consumption of period 1 on both states.

We use the classical Constant Relative Risk Aversion function $u(C) = \frac{C^{1-\sigma}}{1-\sigma}$ and differentiate according to the value of the coefficient of relative risk aversion σ.

First case : $\sigma = 1$

$$Max_{0<t<1} \pi \times \theta_i \log[(1-t)\overline{y}] + (1 - \pi \times \theta_i) \log(\underline{y} + bt) \tag{3.4}$$

Differentiating by t, one obtains

$$\frac{\pi_i b}{\underline{y} + bt} - \frac{(1 - \pi \times \theta_i)}{1 - t} = 0$$

and then the optimal taxation level t^* is defined by

$$t^* = 1 - \frac{\pi_i(b + \underline{y})}{b} \tag{3.5}$$

We can make one first remark : each t^* preferred depends on the type of the individual. Then we replace (3.3) in (3.5)

$$t^* = 1 - \pi_i - \frac{\underline{y}}{\overline{y}} \pi_i \left(\frac{\int_i [1 - \pi(\theta_i)]}{\int_i \pi(\theta_i)} \right)$$

Second case : $\sigma \neq 1$ **and** $\sigma > 0$

$$Max_{0<t<1} \pi \times \theta_i \frac{[(1-t)\overline{y}]^{1-\sigma}}{1-\sigma} + (1 - \pi \times \theta_i) \frac{(\underline{y} + bt)^{1-\sigma}}{1-\sigma} \tag{3.6}$$

Again, differentiating by t, one obtains

$$t^* = \frac{b^{1/\sigma}(1 - \pi\theta_i)^{1/\sigma}\overline{y} - \pi\theta_i^{1/\sigma}\overline{y}^{1/\sigma}\underline{y}}{b^{1/\sigma}(1 - \pi\theta_i)^{1/\sigma}\overline{y} + b\pi\theta_i^{1/\sigma}\overline{y}^{1/\sigma}} \tag{3.7}$$

We can easily check that the result is compatible with the first case :

$$\lim_{\sigma \to 1} \frac{b^{1/\sigma}(1 - \pi_i)^{1/\sigma}\overline{y} - \pi\theta_i^{1/\sigma}\overline{y}^{1/\sigma}\underline{y}}{b^{1/\sigma}(1 - \pi\theta_i)^{1/\sigma}\overline{y} + b\pi\theta_i^{1/\sigma}\overline{y}^{1/\sigma}} = 1 - \frac{\pi\theta_i(b + \underline{y})}{b}$$

In both cases, we have proven that a preferred tax rate t^* exists, and depends on types, that is to say on the level of education of individuals. This approach is worthwile as it supposes that even high educated individuals can have a non null preferred tax rate because $\pi \neq 1$ and because they are risk averse. We now look at some comparative statics that will matter for the empirical analysis.

3.1.2 Comparative statics

We look at variations of t^* when we modify some parameters of the model. For convenience, we will limit our study to the first case $\sigma = 1$.

Minimum income

Using (3.5)

$$\frac{dt^*}{d\underline{y}} = -\frac{\pi \times \theta_i}{b} < 0$$

We can here define ε as the gap between period 0 income y_0 and the bad state's income $\underline{y}$:
$\varepsilon = |\underline{y} - y_0|$.
We obtain again

$$\frac{dt^*}{d\varepsilon} = -\frac{\pi \times \theta_i}{b} < 0 \text{ and } \frac{dt^*}{dy_0} = -\frac{\pi \times \theta_i}{b} < 0$$

This result is quite logical. As soon as the level of income in period 1 increases, taxes become desincentive, and t^* decreases. This result holds either when the gap ε increases or when the initial level of income y_0 increases. We will see later that those institutional variations may explain the differences in intensity of preferences for redistribution accross countries.

Level of education

Here we look at the variation of t^* according to the level of education. It provides us a distribution of preferred tax rates according to the distribution of types.

$$\frac{dt^*}{d\theta_i} = -\pi - \frac{\pi \times \underline{y}}{b} < 0$$

Again, this result is trivial : when θ_i is high, the individuals expect their chances to attain the good position in period 1 to increase, and finds no interest to have a high tax rate.

3.1.3 Conclusion

This first simple version of the model aims at describing how the slow entry in steady job, due to the succession of periods of studies, internship, short terms contracts and unemployment, can influence the preferences for redistribution. The institutional setting that we have chosen reflects tha fate commonly awaiting young generations at their entry on the job market. Van de Velde ([20]) suggests in this connection to talk about a "broken promise" of integration for the generations that have recently gone into the job market, after a sizeable investment in their studies[1]. Nevertheless, in this setting the more educated people increase their chances

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[1]In this respect, she quotes the rallying of the mileuristas (literally "1000-Euro-a-month-ers or Euro-ists", a group of young graduates who have an income of less than 923) in Spain which exposes the awareness of a downward social movement.

to attain the good position's income [2], but the young will always prefer non null tax rate whatever their level of education because of uncertainty on future positions (due to $\pi < 1$). We propose then a first extension with an institutional innovation in which the period d_0 is protected by the redistribution.

3.2 First extension : institutional innovation by protecting d_0

3.2.1 Presentation

In the previous section, we studied a society in which individuals benefited from redistribution only in period 1, when they had obtained a steady job. Here we consider the situation in which the young are concerned by distribution during the period d_0. We look at the value t^* preferred by the individuals when there are also concerned by the a transfer in the first period 0 of their life, with $\lambda \leq 1$.

When $\lambda = 0$ we are back in the previous case, and as λ increases to 1, individuals in period 0 get the same amount of transfer than the poor in period 1.

The maximization program rewrites then :

$$MaxU = \log(y_0 + bt) + \pi\theta_i \log[(1-t)\overline{y}] + (1 - \pi\theta_i)\log(\underline{y} + bt) \tag{3.8}$$

Differentiating with respect to t, one obtains :

$$\frac{b}{y_0 + bt} - \frac{\pi\theta_i}{1-t} + \frac{b[1 - \pi\theta_i]}{\underline{y} + bt} = A_t$$

As this results suggests it, the expression of t^* is not obvious, as well as the comparison with t^* obtained in the previous section. Indeed, as the insurance effect is doubled, we lose the linearity in the expression, which was very convenient. Therefore, we use the intermediate value theorem in order to prove the existence and the uniqueness of t^* on $]0;1[$ (proof in Appendix).

Intuitively, we can guess two different effects. As the preferred tax rate is defined in period 0, it depends indeed on the prevalence of intergenerational altruism :

- The individuals support an important level of tax because they want their children to benefit from it in period 0.

- Highly educated people anticipate that they will probably pay taxes (i) on one hand for those earning $\underline{y}$, and (ii) on the other hand for the young in period 0, so education curbs the willingness to pay taxes even more than in the general case.

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[2]The last publication of the CEREQ ([13]) on the 2007's generation of young cohort confirms the facilitating role played by education on the job market in a context of crisis and mass unemployment

3.2.2 Comparative statics

Again we want to look at the effect of a change in parameters on the preferred tax rate t^*. In order to study the sign of the derivative of t^*, we use the fact that

$$\frac{dt}{dx} = \frac{dt^2}{dU^2} \times \frac{dU}{dx}$$

The sign of $\dfrac{dt^2}{dU^2}$ is negative, according to (9). We then look at the sign of $\dfrac{dU}{dx}$ where x is our variables of interest.

Income levels

Differentiating (3.8) with respect to $\underline{y}$, we obtain

$$\frac{1 - \pi\theta_i}{bt + \underline{y}} > 0$$

as $\pi\theta_i < 1$. Then, $\dfrac{dt}{d\underline{y}} < 0$

Level of education

We differentiate here equation (3.8) with respect to the level of education θ_i.

$$\frac{dU}{d\theta_i} > 0$$

$$\pi \log[(1-t)\overline{y}] - \pi \log[\underline{y} + bt] > 0$$

$\Rightarrow \pi \log[\frac{(1-t)\overline{y}}{\underline{y}+bt} > 0$
as $\pi > 0$ and as $\log$ is an increasing function

$$\frac{(1-t)\overline{y}}{\underline{y} + bt} > 1$$

$\Rightarrow t < \frac{\overline{y} - \underline{y}}{b + \underline{y}}$

The same condition holds when we differentiate with respect to π. Intuitively, as soon as the "good state" income $(1-t)\overline{y}$ is higher than the "bad state" income $\underline{y} + bt$, t^* is a decreasing function of level of education θ_i and of π.

3.2.3 Conclusion

We have seen here that the model could also be used to understand the age effect on the formation of preferences for redistribution in cases where the period d_0 is protected by redistribution. This "institutional" sophistication of the model may be worthwhile when we will adress international comparisons, as some countries propose social disposals backing the end of the studies and the entry on the job market. If we are not able here to analytically determine if the preferred tax rate in this setting is higher or lower than in the general case, we can intuitively guess two different effects, depending on the prevalence of intergenerational altruism and its interaction with the negative impact of education on the preferred tax rate. We now look at another specification of the model tackling the question of imperfect information on the talents' reward.

3.3 Second extension : talents' reward. Biased view of π and Bayesian updating process

Let assume that young people have only an upwardly biased estimation of the parameter π that describes how talents are rewarded in the society. As soon as they get older, they learn the true value of π, that we call π^*. This uncertainty on the true value of π will introduce differences in the intensity of preferences for redistribution accross age groups, with comparable levels of education.

As in Piketty ([15]), we use here the classical Bayesian updating process to examine the learning path that leads old to attain the true value π^*, but unlike it, our learning process is costless, as individuals do not chose a level of effort to get additional information.
For notation, let us define $\pi \in \Theta$ the unknown parameter, and μ the probability measure on Θ which represents beliefs about π, called the proper subjective probability measure. We can define then the best action of the individuals with $\mu(\pi)$ and action "deciding the level of preferred tax rate t^*" :

$$U(t) = \int_\Theta u(t, \pi)\mu(d\pi)$$

The individuals make decision using $\pi \mid I$ where I is the raw information they get.
Once conditionnally independent samples $(x_1, ...x_n)$ are observed from density $f(x; \pi)$, the prior can be updated to the posterior via Bayes' Theorem :

$$\mu(d\pi \mid x_1, ...x_n) = \frac{\mu(d\pi)\Pi_{i=1}^n f(x_1, ...x_n, \pi)}{\int_\Theta \mu(d\pi)\Pi_{i=1}^n f(x_1, ...x_n, \pi)}$$

where $\Pi_{i=1}^n f(x_1, ...x_n, \pi)$ is the likelihood function.

People learn in second period by modifying their prior beliefs. As this dynamic learning process is defined by a standard, fully rational process of Bayesian updating, it has the martingale property, and thus the martingale convergence theorem applies, and the individuals' beliefs converge.

If the two following assumptions were verified, dynasties would in the end converge to the true value of π^*.

- Prior beliefs of the young are inherited from the experience of their parents, without any loss of information

- The parameter π^* is unchanged across generations.

It is needless to say that those assumptions are unlikely. Indeed, it is more probable that prior beliefs of the young are re-drawn at each period, and that the structure of education's returns changes, for instance because of technical change. The implication of this result is the following : even if young people would prefer an important tax rate when they get their first durable job because of uncertainty, as they have an upwardly biased estimation of the value of π^*, they underestimate their optimal preferred tax rate. When they get older, they converge to the true value of the return of their education level, and then adjust their preferences. However, the mistake recurs across generations.

3.4 Conclusion

We tried in this simple two-periods model to consider how the potentially difficult entry on the job market and the late acquisition of a steady position can affect preferences for redistribution. In the first case of our model, there exists a initial income y_0 for everybody in period 0 and two possible levels of income in period 1. As they enter the labour market, the individuals face uncertainty on their future income level. In this version, the insurance effect leads the young to have a higher preferred tax rate than those already in a steady position. We then enriched the model by assuming that the first period d_0 was also protected through taxation, in order to account for potential institutional disposals backing entry on the job market. It would be then interesting to compare analytically the values of t^* in the general case and in this first extension, but we can already say that it will depends on the prevalence of inter-generational altruism, andon the curbing driven by education. At last, in a second extension, we introduced imperfect information on the talents' rewarding in the society. Because they have an upwardly biased view of π, the individuals rationally underestimate there preferred tax rate. This model suggests then than the link between age and intensity of preferences for redistribution can be highly determined by institutional framework, and calls for empirical estimations highlighting those potential institutional effects.

4 | Empirical evaluation

Looking at differences accross age groups

One of the main features of the model we have presented is the role of age in the determination of the preferred tax rate. In the theoretical approach previously defined, taxation was understood in its insurance pattern. We have shown in the different extensions of the model that age can have a very various effect if we consider different institutional frameworks. The empirical investigation that we suggest aims at testing this idea. In a first section, we will present the data basis and make some remarks concerning methods of measurement of preferences for redistribution. We will then present descriptive statistics in order to exhibit the major facts on the link between cohort and intensity of preferences for redistribution. We will after that propose an institutional interpretation of those facts, using a variable measuring how individuals define opportunities for young people on the job market. Moreover, as we highlighted it in introduction, preference for redistribution is a very multidimensional phenomenon, for this reason we will also test other potential underlying determinants as the aversion for inequality or the demand for basic needs subsidizing. At last, as we cannot deny the political overtone of the topic of redistribution, we will compare our results on the impact of age and cohort on the intensity of preferences for redistribution to wider political questions, such as immigration or security issues.

4.1 Description of the data set

4.1.1 The ESS

The empirical approach of our question has been made using the European Social Survey. The ESS is an academically-driven social survey funded through the *European Commission's Framework Programmes*, and offers the advantage for researchers to be costless. It aims at explaining the interaction between Europe's institutions and the values and behaviour patterns of European population. Questions deal with the political priorities of European people and social and economic characteristics of individuals. We use here its fourth round, fielded in 2008/2009, because it provides the richest range of questions on the topic of redistribution and further allows us to investigate European viewpoints on economic questions in greater depth. The survey covers more than 30 nations through a repeat cross-sectional survey, so it allowed us to make comparisons between countries.

This data set only allows us to take into account the cohort effect. As accurate questions

on redistribution were absent in previous rounds, we could not compare effect from one round to the other. Moreover, the ESS survey is quite recent, and rounds are too close together, that is the reason why we are here unable to measure pure age effect. Only with the help of panel data can researchers find convincing results on age effect.

We select several countries in the dataset, that correspond more or less to the four ideal cases relative to the welfare state in Europe, identified in the literature (Esping-Andersen (9), Guillaud (12)). Among them, United Kingdom, which has a welfare state based on a Beveridgean individualistic logic, and the lowest level of social benefits, Sweden, which according to Guillaud (12) has the highest level of welfare state and an universalist and egalitarian system, and Denmark, whose welfare system has similiarities with the swedish one and who offers to young people a universal financing of studies, France and Germany that are the two biggest European countries and have a welfare state based on the insurance bismarckian system, and finally Spain.

As Arrondel & Masson (4) remind it, this typology, even criticized on some aspects, especially on the heterogeneity among "conservative" countries, is a very convenient conceptual tool, as it distinguishes three *welfare pillar*, respectively market, family, and state. It also allows us to identify three different versions of institutional framework to better understand how age and cohort can affect preferences for redistribution.

4.1.2 Intensity of preferences : Choice of the measure and remarks

We had a range of questions related to the notion of redistribution. We chose to focus on 3 main questions :

- Large differences in income are acceptable to reward talents and efforts - Q1

- Government should reduce differences in income levels - Q2

- Government should increase taxes a lot and spend much more on social benefits and services - Q3

Those questions shed light on different aspects, either values, or concrete aspirations of the population, that can have very various meaning according to the country in which we submit it. The choice of those questions is justified by the fact that they all refer to a particular criterion to measure the degree of fairness of the distribution of goods, identified by the distributive justice literature. As Forsé & Parodi (11) summarized it, individuals use mainly three criteria : the response to basic needs, the reward of everyone's talents, and the reduction of inequalities (especially of income).

Needless to say that the wording of the questions may be problematic. For example, the notion of "government" is deliberately fuzzy, so that it includes every administrations, local or national, in charge of redistributive politicies, but therefore can be identified with difficulty by the respondents. We are confronted to a second difficulty which is the use of the hypothetical form "should" that can be interpreted as prescriptive statement according to a particular political context, a particular government. We reasonably cannot underestimate the fact that this questionnaire can be an instrument to show support or to express his mistrust to a particular government. For this reason, it is more relevant to study differentials of answers within countries, and then to take into account fixed effects in countries. Finally, another point is to be underlined : those questions all presuppose the ability of the government to

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implement various redistributive policies. It may be the case that for several respondents, it is questionable whether this ability is real or not. Assuming a trust in the efficiency of governments and other institutions in people's answers can lead us to fail in interpreting the rate of missing answers or indifferent opinions, where it could be the expression of a kind of resignation.

It appears to us that it was relevant to focus on questions 2 and 3. Question 2 refers implicitly to the notion of egalitarism, which is quiet abstract, and though involves the pure preference for equality / aversion for inequality. As it is asked just after question 1, we can suppose that the respondents can make a link with the notions of "talents" and "efforts". As Bertrand & Mullainathan (6) already highlighted it, there exists in such survey an *ordering effect*. The reason for this is that people attempt to provide answers consistent with the ones they have already given in the survey. A choice has also been made concerning the statement "income levels". Quoting Ravaillon (16) , the *RRQ* ("restrict the rich question") allows the respondents to clearly identify where the money redistributed comes from, whereas in the ESS, question 2 refers to a more abstract scale, "income levels". Question 3 conveys a more concrete topic, the question of social benefits. It is relevant here to have made a link between an increase in taxes and an increase in social benefits and spendings : the use of "taxes" don't refer here to a pure egalitarist approach but to the redistributive role of taxation, mainly through the financing of social benefits. For this cognitive and semantic reasons, it is reasonable to expect that the answer to those statements will be determined by several characteristics, as they don't question the same values and political priorities.

4.2 Descriptive statistics - Intensity of preferences for redistribution increases with age

We first propose descriptive statistics on the whole base and in each country chosen in order to identify the major facts on the link between cohort and intensity of preferences for redistribution.

4.2.1 The reward of everyone's talents : "Are large differences in income are acceptable to reward talents and efforts ?" Q1

As we said it, this question doesn't directly refer to a redistributive policy in itself, for this reason it won't be the more relevant one, but it conveys the value "merit" as identified by Forsé & Parodi (11) , and for this reason can be linked to the biased estimation of the parameter π incorporating the reward of everyone's talents that we used in our model. We give the whole statistics of percentage of positive answers to Q1 according to the age group in the next table, summarized in the following figure.

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Figure 4.1: **Large differences in income are acceptable to reward talents and efforts - Comparisons between age and countries**

Lecture : 68.08% of the 15-35 years old in France agree with the opinion "Do you think that large differences in income are acceptable to reward talents and efforts ?", 67.2% of the 36-55 years old, and 63.59% of those aged of 56 years old and over.
Source : ESS4, 2008/9
Number of observations : 51,163

As an opening, we can first notice the differences in absolute level accross countries. As one could expect it, the rate of positive answer is high in an anglosaxon country like Englan (79.53% for the whole population), but surprisingly, the highest level is attained by Denmark, with an average rate of positive answers of 83.81% . Needless to say that we have to be very careful with cross-countries comparisons, as we cannot account for countries' fixed effect. Moreover, the question can have a very different meaning according to the political context in which it is asked.

The main result emerging is that the young give more importance to rewarding talents than their eldest. Except for Germany, we find in each country that the rate of people answering that they "agree" or "agree strongly" to this question decreases with age : 4.49 percentage points of difference in France, 3.33 in United Kingdom. This is especially the case in Sweden (more than 11 percentage points of difference between 15-35 year old people and people aged from 56 to more). However, the rate of positive answers is quite stable in Spain.

Table 4.1: **Large differences in income are acceptable to reward talents and efforts**

Stats	Whole base	France	Spain	United Kingdom	Germany	Sweden	Denmark
Whole population							
Missing	1,024	4	36	22	22	17	14
	2.00%	0.22%	1.56%	1.06%	0.88%	1.04%	0.97%
Agree	38,118	1,223	1,714	1,643	1,974	1,195	1,215
	74.5%	66.25%	74.46%	79.53%	79.28%	73.04%	83.91%
Total	51,163	1,846	2,302	2,066	2,490	1,636	1,448
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
age 15-35							
Missing	303	0	6	6	9	6	7
	1.88%	0.00%	0.75%	1.06%	1.48%	1.11%	1.88%
Agree	12,320	369	597	460	466	426	315
	76.43%	68.08%	74.91%	81.42%	76.64%	78.74%	84.68%
Total	16,119	542	797	565	608	541	372
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
age 36-55							
Missing	250	1	5	6	6	4	2
	1.38%	0.15%	0.62%	0.76%	0.60%	0.73%	0.38%
Agree	13,577	461	598	627	798	404	448
	75.10%	67.20%	74.10%	79.47%	79.48%	73.45%	84.85%
Total	18,078	686	807	789	1,004	550	528
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
age 56 and over							
Missing	471	3	25	10	7	7	5
	2.78%	0.49%	3.58%	1.40%	0.80%	1.28%	0.91%
Agree	12,221	393	519	556	710	365	452
	72.03%	63.59 %	74.36%	78.09%	80.87%	66.97%	82.48%
Total	16,966	618	698	712	878	545	548
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

4.2.2 The reduction of inequalities : "Should government reduce differences in income levels ?" Q2

We focus here on the question referring to the criterion of "equality". This question tackles directly the issue of redistributive policy demand, and then is relevant for our investigation. Again, we summarize the statistics of positive answers to Q2 according to the age group in the following figure and table.
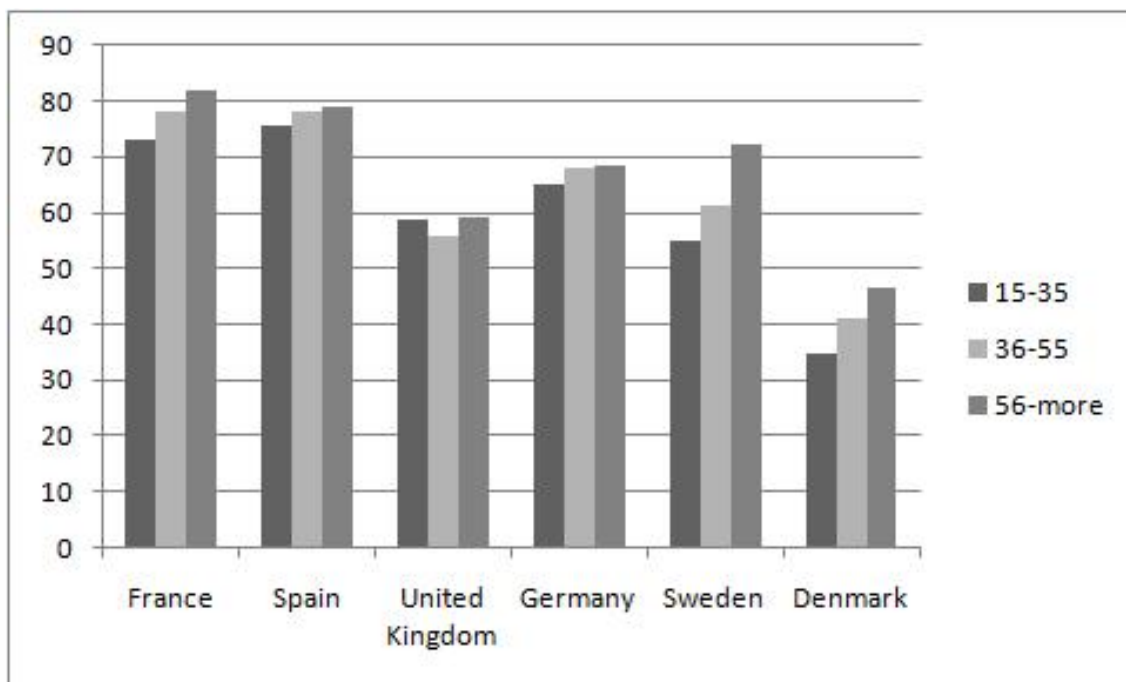
Figure 4.2: **Government should reduce differences in income levels - Comparisons between age and countries**

Lecture : 72.88% of the 15-35 years old in France agree with the opinion "Do you think that government should reduce differences in income levels ?", 77.99% of the 36-55 years old, and 81.88% of those aged of 56 years old and over.
Source : ESS4, 2008/9
Number of observations : 51,163

We find here the same trend as before, and this time for the whole sample : the intensity of preference for redistribution increases with age : 11.85 percentage points of difference between the rate of positive answers between thee young and the old in Denmark, 9 in France, 3.41 in Spain. If Germany and Sweden are comparable in absolute level, the gap between age groups is more important : 17.03 for Sweden and an 3.25 for Germany.

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Table 4.2: **Government should reduce differences in income levels**

Stats	Whole base	France	Spain	United Kingdom	Germany	Sweden	Denmark
Whole population							
Missing	959	3	63	20	37	18	29
	1.87%	0.16%	2.74%	0.97%	1.49%	1.10%	2.00%
Agree	36,799	1,436	1,783	1,193	1,676	1,636	601
	71.93%	77.79%	77.45%	57.74%	67.31%	62.78%	41.51%
Total	51,163	1,846	2,302	2,066	2,490	1,636	1,448
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
age 15-35							
Missing	346	1	16	6	14	10	10
	2.15%	0.18%	2.01%	1.06%	2.30%	1.85%	2.69%
Agree	10,998	395	602	333	395	298	129
	68.23%	72.88%	75.53%	58.94%	64.97%	55.08%	34.68%
Total	16,119	542	797	565	608	541	372
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
age 36-55							
Missing	243	1	15	5	14	5	7
	1.34%	0.15%	1.86%	0.63%	1.39%	0.91%	1.33%
Agree	12,964	535	630	439	682	336	217
	71.71%	77.99%	78.07%	55.64%	67.93%	61.09%	41.10%
Total	18,078	686	807	789	1,004	550	528
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
age 56 and over							
Missing	370	1	32	9	9	3	12
	2.18%	0.16%	4.58%	1.26%	1.03%	0.55%	2.19%
Agree	12,837	506	551	421	599	393	255
	75.66%	81.88%	78.94%	59.13%	68.22%	72.11%	46.53%
Total	16,966	618	698	712	878	545	548
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

4.2.3 The response to basic needs : "Should government increase taxes a lot and spend much more on social benefits and services ?" Q3

We now look at the results for question 3, which is the one referring to the criterion of "response to basic needs". This question is indeed built such that it links the notion of taxes with social benefits. The insurance assignment of redistributive policy is then clearly stated. We can however underline the fact that the verb "to spend" can have a pejorative overtone in some countries, and then negatively affect the results.
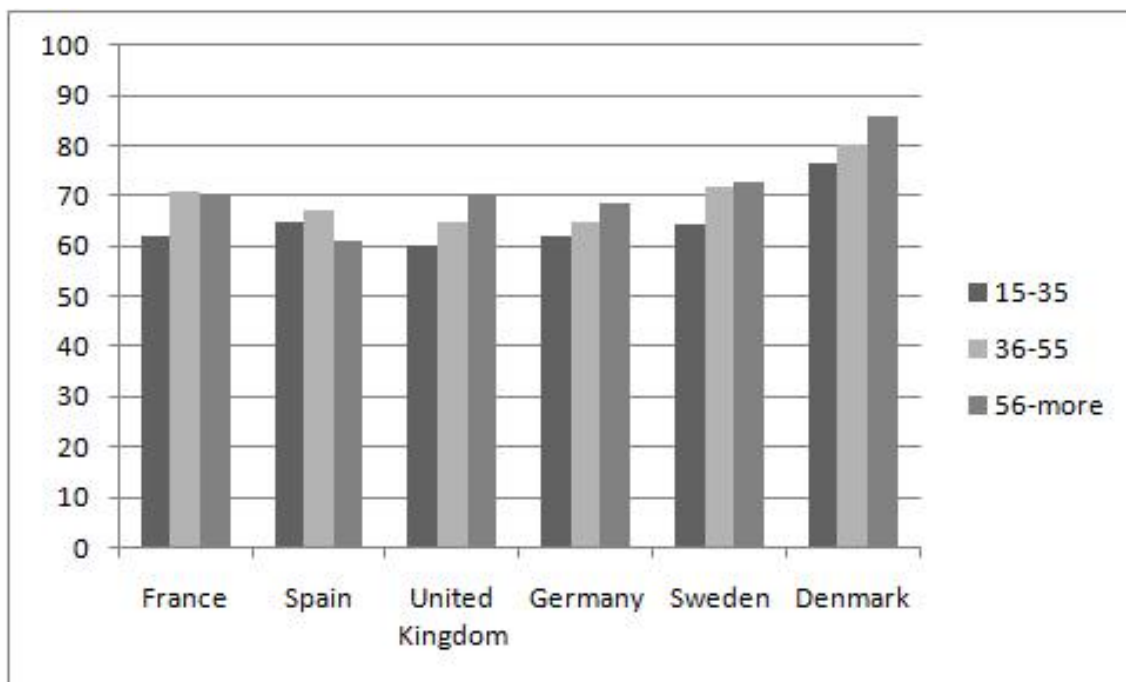
Figure 4.3: **Government should increase taxes a lot and spend much more on social benefits and services - Comparisons between age and countries**

Lecture : 62.17% of the 15-35 years old in France agree with the opinion "Do you think that government should increase taxes a lot and spend much more on social benefits and services ?", 70.7% of the 36-55 years old, and 70.38% of those aged of 56 years old and over.
Source : ESS4, 2008/9
Number of observations : 51,163

The average absolute level of positive answers rate is quite stable accross countries (around 65%). Denmark presents the highest gap between age groups : more than 9 percentage points. Except for Spain (-3.74), there is a clear increase in age for the rate of positive answers : 8.21 for France, 10.46 for United Kingdom, 5.75 for Germany, 9.42 for Sweden.

Table 4.3: **Government should increase taxes a lot and spend much more on social benefits and services**

Stats	Whole base	France	Spain	United Kingdom	Germany	Sweden	Denmark
Whole population							
Missing	5,063	47	292	55	129	52	26
	9.90%	2.55%	12.68%	2.66%	5.18%	3.18%	1.80%
Agree	32,114	1,277	1,483	1,355	1,661	1,139	1,178
	62.77%	68.09%	64.43%	65.58%	65.50%	69.62%	81.35%
Total	51,163	1,846	2,302	2,066	2,490	1,636	1,448
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
age 15-35							
Missing	1,547	9	108	17	32	16	9
	9.60%	1.66%	13.55%	3.01%	5.26%	2.96%	2.42%
Agree	9,791	337	512	340	378	348	284
	60.74%	62.17%	64.62%	60.18%	62.17%	64.32%	76.34%
Total	16,119	542	797	565	608	541	372
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
age 36-55							
Missing	1,411	17	78	14	34	16	3
	7.81%	2.48%	9.67%	1.77%	3.39%	2.91%	0.57%
Agree	11,471	485	543	512	652	394	424
	63.46%	70.70%	67.29%	64.89%	64.94%	71.63%	80.30%
Total	18,078	686	807	789	1,004	550	528
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
age 56 and over							
Missing	2,105	21	106	24	63	20	14
	12.41%	3.40%	15.19%	3.37%	7.18%	3.67%	2.55%
Agree	10,852	435	425	503	601	397	470
	63.96%	70.38%	60.89%	70.64%	68.45%	72.84%	85.76%
Total	16,966	618	698	712	878	545	548
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

4.3 Protecting the youth : can institutions explain these differences ?

In our first descriptive statics, we have seen that the intensity of preference for redistribution increases with age. This observation was clear for some countries, especially for Denmark or Sweden, and more contrasted for countries like Spain and France. We therefore present a pooled regression between :

- the differential of rate of positive answers to the question "Should government increase taxes a lot and spend much more on social benefits and services ?" between people aged of 56 years old and more compared to the rest of the population

- the national average answer to the question "What do you think overall about the opportunities for young people to find their first full-time job in your country ?", based on a 0 (extremely bad) to 10 (extremely good) scale.

The idea is to see if there could be endogenous effect of the institutions, shaping for example the perception of the population concerning job opportunities of the young, that could have a link with the cohort effect that we observe on the intensity of preferences for redistribution.

Table 4.4: **Differential of rate of positive answers - Pooled regression**

Variable	Coefficient
myngfnjb	1.486
	(0.623)
Intercept	-4.170
	(2.807)

Lecture : The variable of interest is the differential of rate of positive answers to the question "Should government increase taxes a lot and spend much more on social benefits and services ?" (Q3) between people aged of 56 years old and more compared to the rest of the population. We compute it using the coefficient $\beta_{age56over}$ obtained by a simple regression of the rate of positive answers on age groups. We then run a pooled regression using the variable *myngfnjb*, which is the national average score for the question "What do you think overall about the opportunities for young people to find their first full-time job in your country ?", based on a 0 (extremely bad) to 10 (extremely good) scale.
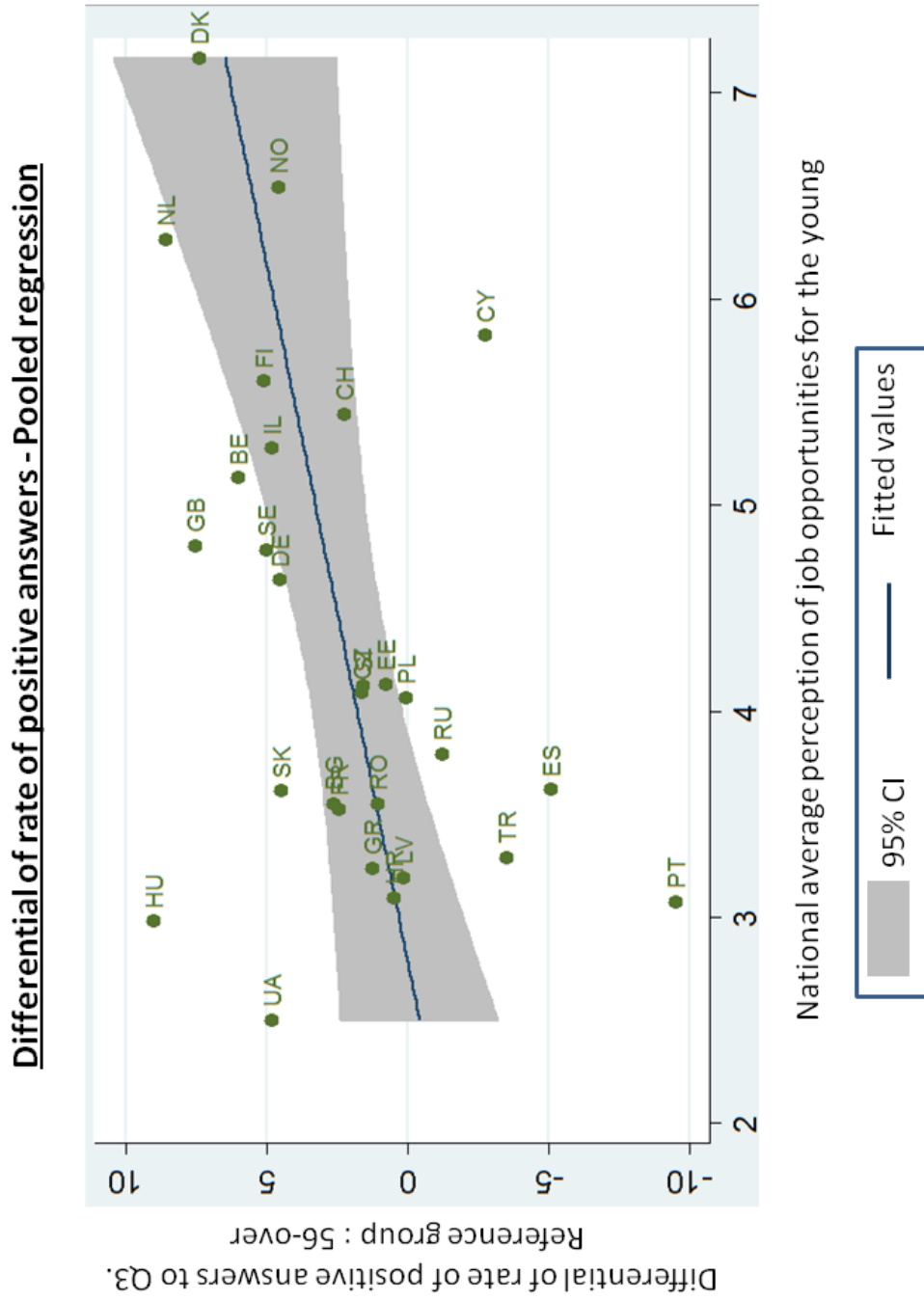
Figure 4.4: **Pooled regression**

On this graph, we can see the positive correlation that exists between the differential of positive answers to Q3 according to age group, and the perceived insecurity for the young while entering job market. We distinguish two groups of countries in the confidential interval appearing in grey in the figure : one group composed of countries presenting a small score for job opportunities of the young : France, Greece, Portugal, Hungary, etc, and a second group composed mainly of scandinavian countries, like Finland, Norway and Denmark, presenting a good score, and exhibiting higher differential in positive answers according to age group.

To undertake thorough analysis, we present separate comparisons for each question choosing two specific countries lying at the opposite sides of the graph : Spain and Denmark. Again we choose to focus more on differentials than on absolute levels in order to account for countries' fixed effects. For each country and each question, we compute the differential of rate of positive answers using the age group 15-35 as the reference group. The following graphs summarize those differentials. By construction, the difference is 0 for the 15-35 years old for both countries.
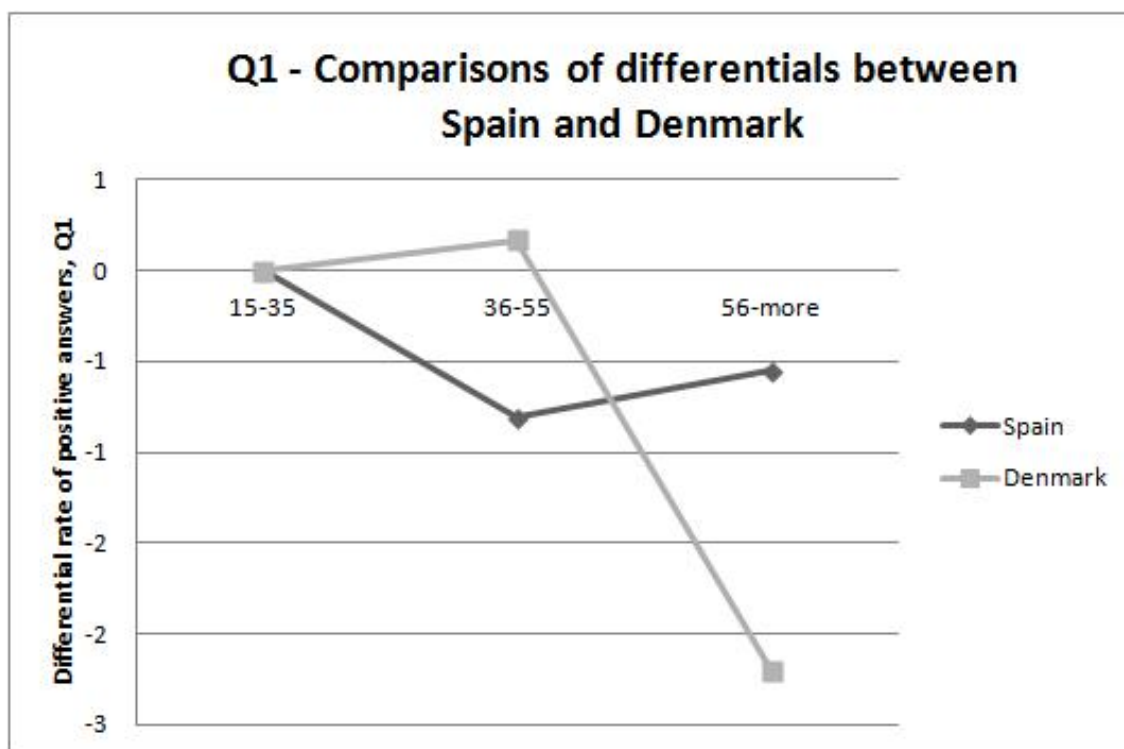
Figure 4.5: **Q1 - Comparisons of differentials between Spain and Denmark**

Lecture : The graphic aims at measuring the differential of rate of positive answers to Q1 in Spain and Denmark. We chose the age group 15-35 as the reference group. By construction, the difference is then 0 for the 15-35 years old for both countries. The age-differential on the rate of positive answers to Q1 between 15-35 years old and 56-over years old amounts to -0.55 percentage points in Spain and -2.2 in Denmark.
Source : ESS4, Countries' files : Denmark and Spain, 2008/9
Number of observations : Spain $2,302$, Denmark : $1,448$
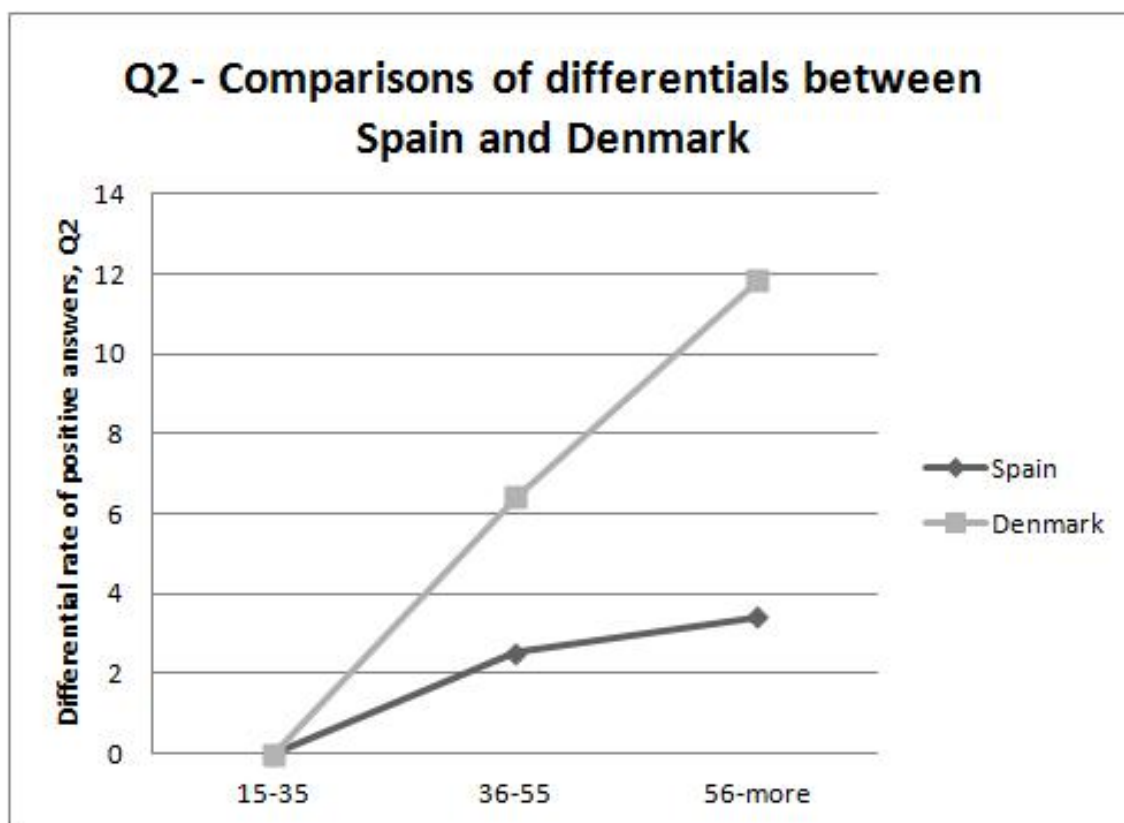
Figure 4.6: **Q2 - Comparisons of differentials between Spain and Denmark**

Lecture : The graphic aims at measuring the differential of rate of positive answers to Q2 in Spain and Denmark. We chose the age group 15-35 as the reference group. By construction, the difference is then 0 for the 15-35 years old for both countries. The age-differential on the rate of positive answers to Q2 between 15-35 years old and 56-over years old amounts to 3.41 percentage points in Spain and 11.85 in Denmark.
Source : ESS4, Countries' files : Denmark and Spain, 2008/9
Number of observations : Spain $2,302$, Denmark : $1,448$
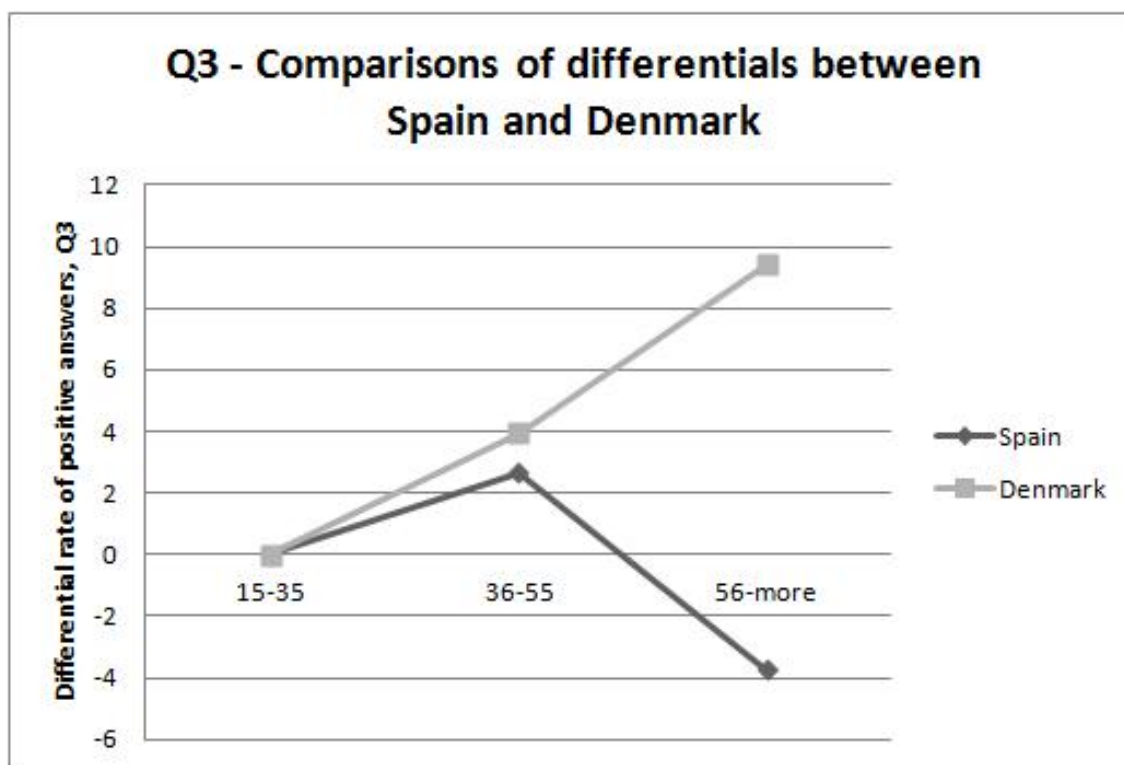
Figure 4.7: **Q3 - Comparisons of differentials between Spain and Denmark**

Lecture : The graphic aims at measuring the differential of rate of positive answers to Q3 in Spain and Denmark. We chose the age group 15-35 as the reference group. By construction, the difference is then 0 for the 15-35 years old for both countries. The age-differential on the rate of positive answers to Q1 between 15-35 years old and 56-over years old amounts to -3.73 percentage points in Spain and 9.42 in Denmark.
Source : ESS4, Countries' files : Denmark and Spain, 2008/9
Number of observations : Spain $2,302$, Denmark : $1,448$

We can see here that Q1 is the one for which the age-differential is the smaller for both countries (-0.55 and -2.2 percentage points for Spain and Denmark respectively). The tendancy is different for Q2 (3.41 and 11.85 percentage points for Spain and Denmark respectively) and Q3 (Spain : -3.73 and Denmark : 9.42). The difference between age groups is higher in both countries, but especially in Denmark. For both questions, the differential between the rate of positive answers of age group 15-35 and 56-over is greater in Denmark. For Denmark, we observe a clear continuously increasing trend. In Spain, the differences is definitely notclear betwen age groups. Moreover we can observe that the rate of positive answers of Q1 and Q3 of the old is close from the one of the young. It appears then than the intergenerational differences in attitudes towards redistribution take various forms according to the country in which we observe them.

Many hypothesis can be expressed to explain those differences both absolute and relative. We propose one of them, using the conclusions of our model and refering to the work of Van de Velde ([19]) and ([20]), based on the analysis of the way young people enter adult life in Western Europe. We can suppose that there exist a learning process of the true value of education's returns (π^* in the model). Looking at Q3 - which refers directly to social policies -, as the entry on the job market is seen as more difficult in Spain as in Denmark[1], the learning process goes "faster", and the young are brought down to earth early. Van de Velde's work is worthwhile to understand the particularities of the entry on the job market in both countries. She proposes a study of four different models and sheds light on the economical, political and cultural factors driving them. Her study is built on the comparative analysis of family life course and career path of young people across fous countries : Denmark, United Kingdom, France and Spain, from six waves of the "European Community Household Panel" (1993-1999) and more than 135 interviews with young people from 18 to 30. Following Van de Velde's typology, Denmark is a country characterized by the importance of the notion of "personal development". The Danish society is marked by the prevalence of a long, independent and exploratory youth, which is the corollary of a logic of personal development. As she mentions it, this precocious independence is warranted by the intervention of the State. The policy that aims at financing student life, due to its flexibility and its universality, is a form of institutionalization of a long course of study, interrupted by periods on the labour market. Contrary to that, the dominant logic defining the fate of youth in Spain is family membership. She underlines how the high unemployment rate leads to an increase of years of studies. The young spanish usually stay longer at family home. Only once married and with a steady position they find their own place to live. The parental support plays then a very different role in Spain than in Denmark.

The conclusion is then ambivalent : on one hand, we can suggest that social protection during the entry on the job market can "maintains illusions". But clearly, this explanation is contentious, and can be contradicted by a simple remark : Q3 concerns an *additional* social spendings with respect to current social policies. As the young Danish already benefit from it, they do not perceive it as *a need today*. This explanation could challenge many presuppositions about the so-called "society of assistantship" and the infinite appetite for social spending.

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[1] We recall here that according to *Eurostat*, the average unemployment rate in 2008 was 13.2% in Spain and 3.5% in Denmark

4.4 Regressions

In order to measure the direct effect of age on the preferences for redistribution, we use a standard OLS approach firstly on the whole base, then within each country.

We use a binary dependent variable, constructed from Q2 and Q3. People answering that they "agree" or "strongly agree" with this question were coded 1, whereas others (including "neither agree nor disagree", "disagree" and "strongly disagree" answers) were coded 0. We run a pooled regression with a binary dependent variable, and regressions in the six countries on which we were already focused. As Guillaud (12) highlighted it, running those regressions within countries allows to capture country specific potential omitted variables, which might have an impact on the preferences of individuals for redistribution (level of income inequality, actual redistributive policy, unemployment rate, demographic situation, etc.), and then to produce unbiased estimates of our variables of interest.

We add progressively several socio-demographic controls in five waves of specification. The first controle is *eduyrs*, namely the number of years of education, including the compulsory years. This quantitative variable was the more convenient to capture the effect of education levels as described in the theoretical model. We then create a variable *risklover*, from the employment relation : people were coded 1 if they were self-employed or if they worked for their family business, 0 otherwise. Indeed, according to some studies (Alesina & La Ferrara (2) , Guillaud (12)), employment status can be used as a proxy for risk aversion. We add then a controle based on the type of contract of the respondent, with a binary variable *cdi* equal to 1 when the respondent has a work contract with unlimited duration, 0 otherwise. We then specify dummies for the gender, for living in an urban area or not, and in the regression on Q3, we also use two additional dummies if the respondents or their partners have been permanently sick or disabled for the last 7 days.

The empirical specification is then :

$$Y_i^* = \alpha_1 age3655 + \alpha_2 age56andover + \beta E_i + \gamma X_i + \delta I_i + \epsilon_i$$

where Y_i^* is the variable of interest, $\alpha_k' s$ capture the effects of being in two age groups (compared to the reference group of 15-35 years old), E_i is the level of education measured in years, and X_t a set of variable characterizing the employment relation and risk aversion associated, and I_i is a set of dummies for deciles of household's total income.

4.4.1 Pooled regression

We first run the regression on the whole base. We present here five waves of specification, where we add progressively control variables. We built three groups of deciles of income, in order to increase the size of each groups, and then obtain more statistically significant results.

We must here underline the fact that the measure of income might be imprecise, as the question asked in the questionnaire concerns the total amount of the household income. We let in the following tables only the coefficients of age groups, education, and income, but the

whole regressions with all the coefficients are presented in Appendix.

The OLS estimation of equation (1) without any control variables provides a positive and statistically significant coefficient for age groups. Belonging to the age group 36-55 and 56-over increases the rate of positive answers to Q3 of respectively 2.71 and 3.22 percentage points compared to the reference group 15-35. For Q2, the results are even more important with a difference of 3.48 percentage points for the 36-55 and 8.21 for 56-over.

We can see here the importance of the wording of questions, for example concerning the sign of the coefficient of education. While considering Q3, education is a positive factor on the intensity of redistribution, whereas for Q2, it's a negative one. In both cases the coefficients are significant. Q2's coefficient is coherent with the one found by Alesina & Giuliano (3) . According to Forsé & Parodi (11) [2], the level of education doesn't introduce any difference of opinion on questions referring to basic needs, but the more educated are the individuals, the less sensitive they are concerning the issue of reducing inequality of income. One can propose an explanation of this result in terms of human capital : as they have invested in education, they expect their income to reflect this investment in human capital, which could explain their aversion for a too ambitious reduction of inequalities of income. However following this logic, they may also recognize the existence of externalities of their investment and consent to pay taxes for the community. In regression on Q3, as education has a coefficient β positive, when we introduce education as control variable, the coefficients of *age3556* and *age56andover* increase. One explanation could be based on the fact that highly educated people find themselves mostly among the young. In model (3), we introduce control variables on the employment relationship and risk aversion (self-employed status). Again, we find different signs for the coefficients whether Q2 or Q3 is asked (cf. Tables 9 and 10 in Appendix). Knowing the expansion of the service sector and more generally of wage system in modern western societies, self-employed people find themselves more often among old people. Moreover, open-ended contract are usually obtained with seniority, that is when the observed value of γ in the empirical specification is negative, the coefficients of age groups increase. For regression based on question Q2, we find in specification (5) coefficients are the following : 0.0363^{***} and 0.0387^{***} for the 36-55 and 56-over respectively. Even controled by income groups, they stay both statistically significant. In the case of Q3, the coefficients of age groups are 0.0250^{***} and 0.0625^{***}. So we can conclude that there exists a clear cohort effect for both items.

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[2]Results from the *European Values Study*

Table 4.5: **Regression "Government should increase taxes a lot and spend much more on social benefits and services" Q3, whole base**

Variables	(1)	(2)	(3)	(4)	(5)
age36-55	0.0271***	0.0266***	0.0197***	0.0204***	0.0248***
	(0.00523)	(0.00523)	(0.00540)	(0.00541)	(0.00626)
age 56 and over	0.0322***	0.0546***	0.0468***	0.0474***	0.0622***
	(0.00532)	((0.00543)	(0.00563)	(0.00564)	(0.00660)
eduyrs		0.0102***	0.00951***	0.00941***	0.00788***
		(0.000536)	(0.000549)	(0.000555)	(0.000664)
risklover			yes	yes	yes
cdi			yes	yes	yes
female				yes	yes
urban				yes	yes
disable					yes
partner disable					yes
Group 2					0.0317***
					(0.0604)
Group 3					0.0326***
					(0.00713)
Constant	0.607***	0.478***	0.475***	0.478***	0.488***
	(0.00381)	(0.00780)	(0.00783)	(0.00849)	(0.0102)
Observations	51,163	50,764	50,764	50,748	36,923
R-squared	0.001	0.008	0.008	0.009	0.010

Lecture : Coefficients are estimated by an OLS estimation. For model (1) without any control variables, belonging to the age group 36-55 and 56-over increases the rate of positive answers of respectively 2.71 and 3.22 percentage points compared to the reference group 15-35. When we add controls for socioeconomic characteristics, risk aversion, employment relationship, and income, the results become respectively 2.48 and 6.22 percentage points of difference compared to the reference age group.

Standard errors are written in parentheses.

Asterisks indicate a significant difference from baseline, with *** p<0.01, ** p<0.05, * p<0.1

Source : ESS4 2008/9

Table 4.6: **Regression "Government should reduce differences in income" Q2, whole base**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0348***	0.0363***	0.0466***	0.0440***	0.0355***
	(0.00486)	(0.00483)	(0.00498)	(0.00499)	(0.0581)
age56 and over	0.0821***	0.0435***	0.0538***	0.0512***	0.0356***
	(0.0274)	(0.00501)	(0.00520)	(0.00520)	(0.0612)
eduyrs		−0.0150***	−0.0143***	−0.0140***	−0.0121***
		(0.000495)	(0.000507)	(0.000512)	(0.000616)
risklover			yes	yes	yes
cdi			yes	yes	yes
female				yes	yes
urban				yes	yes
Group 2					−0.0169***
					(0.00561)
Group 3					−0.100***
					(0.00662)
Constant	0.682***	0.873***	0.878***	0.863***	0.880***
	(0.00353)	(0.00720)	(0.00722)	(0.00782)	(0.0950)
Observations	51, 163	50, 764	50, 764	50, 748	36, 923
R-squared	0.004	0.022	0.024	0.026	0.036

<u>Lecture</u> : Coefficients are estimated by an OLS estimation. For model (1) without any control variables, belonging to the age group 36-55 and 56-over increases the rate of positive answers of respectively 3.48 and 8.21 percentage points compared to the reference group 15-35. When we add controls for socioeconomic characteristics, risk aversion, employment relationship, and income, the results become respectively 3.55 and 3.56 percentage points of difference compared to the reference age group.

Standard errors are written in parentheses.

Asterisks indicate a significant difference from baseline, with *** p<0.01, ** p<0.05, * p<0.1

Source : ESS4 2008/9

4.4.2 Within countries

We then run this regressions in several countries.

Denmark and Sweden : cohort as the prevailing effect

We can observe that for these countries, the prevailing effect is the generational one. For Denmark in Q3, when we look at model (1) without any control, belonging to the age group 36-55 and 56-over increases the rate of positive answers of respectively 3.96 and 9.42 (statistically significant) percentage points compared to the reference age group 15-35. For Sweden, the results are 7.31 and 8.52. When in model (5) we add controls for socioeconomic characteristics, risk aversion, employment relationship, and income, the results become respectively 6.89 and 11.5 percentage points of difference compared to the reference age group for Denmark, and 9.11 and 10.4 for Sweden, both significant at a 1% level. The results are of the same magnitude for Q2 in model (5) with the following coefficients : 0.0805^{**} and 0.120^{***} for Denmark and 0.0679^{**} and 0.132^{***} for Sweden.

These results state a statistically significant positive effect of cohort on the intensity of preferences for redistribution. The income effect is observable for Sweden only when looking at decile (cf. Appendix) : the coefficient for the 10th decile is -0.127^{*}. We can clearly conclude that there exist a striking different opinion between age groups, and then cohorts, concerning the issue of distribution, that resists the introduction of controls. Several hypothesis can be proposed. On one hand, the intervention of the State covering the entry on the job market previously described could lead the young to find the current redistribution "sufficient" and as the question refers to a judgement on a current situation, they don't demand an increase of the level of redistribution. On the other hand, we can propose a more historical explanation. As the welfare state has been established mainly after World War II, the cohort which has known the political emulation of the period may be more attached to this legacy.

Table 4.7: **Regression "Government should increase taxes a lot and spend much more on social benefits and services" Q3, Denmark**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.396	0.0355	0.0421	0.0444	0.0689**
	(0.0263)	(0.0264)	(0.0272)	(0.0272)	(0.0285)
age5680	0.0942***	0.101***	0.107***	0.108***	0.115***
	(0.0261)	(0.0262)	(0.0267)	(0.0267)	(0.0285)
eduyrs		0.00378*	0.00392***	0.0031	0.00323
		(0.00225)	(0.00226)	(0.00228)	(0.00243)
risklover			yes	yes	yes
cdi			yes	yes	yes
female				yes	yes
urban				yes	yes
disabled					yes
partner disabled					yes
Group 2					−0.0144
					(0.0289)
Group 3					−0.0518*
					(0.0315)
Constant	0.763***	0.716***	0.725***	0.688***	0.716***
	(0.0201)	(0.0355)	(0.0384)	(0.0416)	(0.0481)
Observations	1,448	1,438	1,438	1,438	1,253
R-squared	0.009	0.012	0.014	0.018	0.023

<u>Lecture</u> : Coefficients are estimated by an OLS estimation on Denmark's data. For model (1) without any control variables, belonging to the age group 36-55 and 56-over increases the rate of positive answers of respectively 3.96 and 9.42 percentage points (statistically significant) compared to the reference age group 15-35. When we add controls for socioeconomic characteristics, risk aversion, employment relationship, and income, the results become respectively 6.89 and 11.5 percentage points of difference compared to the reference age group.

Standard errors are written in parentheses.

Asterisks indicate a significant difference from baseline, with *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Source : ESS4, Country File : Denmark, 2008/9

Table 4.8: **Regression "Government should reduce differences in income levels" Q2, Denmark**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0642*	0.0636*	0.0735**	0.0713**	0.0805**
	(0.0332)	(0.0335)	(0.0345)	(0.0346)	(0.0374)
age5680	0.119***	0.114***	0.124***	0.123***	0.120***
	(0.0330)	(0.0333)	(0.0339)	(0.0339)	(0.0375)
eduyrs		−0.00160	−0.00140	−0.00171	0.000668
		(0.00286)	(0.00287)	(0.00289)	(0.00320)
risklover			yes	yes	yes
cdi			yes	yes	yes
female				yes	yes
urban				yes	yes
Group 2					−0.0237
					(0.0380)
Group 3					−0.101**
					(0.0413)
Constant	0.347***	0.370***	0.383***	0.355***	0.363***
	(0.0255)	(0.0449)	(0.0487)	(0.0528)	(0.0791)
Observations	1,448	1,438	1,438	1,438	1,253
R-squared	0.009	0.009	0.014	0.018	0.025

Lecture : Coefficients are estimated by an OLS estimation on Denmark's data. For model (1) without any control variables, belonging to the age group 36-55 and 56-over increases the rate of positive answers of respectively 6.42 and 11.9 percentage points (statistically significant) compared to the reference age group 15-35. When we add controls for socioeconomic characteristics, risk aversion, employment relationship, and income, the results become respectively 8.05 and 12.0 percentage points of difference compared to the reference age group.

Standard errors are written in parentheses.

Asterisks indicate a significant difference from baseline, with *** p<0.01, ** p<0.05, * p<0.1

Source : ESS4, Country File : Denmark, 2008/9

Table 4.9: **Regression "Government should increase taxes a lot and spend much more on social benefits and services" Q3, Sweden**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0731***	0.0734***	0.0967***	0.0937***	0.0911***
	(0.0278)	(0.0279)	(0.0301)	(0.0302)	(0.0308)
age56 and over	0.0852*	0.0848***	0.113***	0.110***	0.104***
	(0.0278)	(0.0284)	(0.0310)	(0.0311)	(0.0318)
eduyrs		0.00210	0.00292	0.00375	0.00220
		(0.00329)	(0.00330)	(0.00335)	(0.00351)
risklover			yes	yes	yes
cdi			yes	yes	yes
female				yes	yes
urban				yes	yes
disabled					yes
partner disabled					yes
Group 2					0.000437
					(0.0410)
Group 3					0.00137
					(0.0416)
Constant	0.643***	0.617***	0.637***	0.657***	0.694***
	(0.0197)	(0.0478)	(0.0493)	(0.0516)	(0.0607)
Observations	1,636	1,628	1,628	1,628	1,543
R-squared	0.007	0.007	0.012	0.005	0.014

<u>Lecture</u> : Coefficients are estimated by an OLS estimation on Sweden's data. For model (1) without any control variables, belonging to the age group 36-55 and 56-over increases the rate of positive answers of respectively 7.31 and 8.52 percentage points (statistically significant) compared to the reference age group 15-35. When we add controls for socioeconomic characteristics, risk aversion, employment relationship, and income, the results become respectively 9.11 and 10.4 percentage points of difference compared to the reference age group.

Standard errors are written in parentheses.

Asterisks indicate a significant difference from baseline, with *** p<0.01, ** p<0.05, * p<0.1

Source : ESS4, Country File : Sweden, 2008/9

Table 4.10: **Regression "Government should reduce differences in income levels" Q2, Sweden**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0601**	0.0725**	0.0824***	0.0768**	0.0679**
	(0.0290)	(0.0288)	(0.0312)	(0.0311)	(0.0317)
age56 and over	0.170***	0.144***	0.158***	0.147***	0.132***
	(0.0291)	(0.0294)	(0.0321)	(0.0321)	(0.0328)
eduyrs		−0.0177***	−0.0173***	−0.0181***	−0.0181***
		(0.00340)	(0.00342)	(0.00345)	(0.00362)
risklover			yes	yes	yes
cdi			yes	yes	yes
female				yes	yes
urban				yes	yes
Group 2					0.0199
					(0.0422)
Group 3					−0.0382
					(0.0428)
Constant	0.551***	0.785***	0.790***	0.762***	0.806***
	(0.0206)	(0.0495)	(0.0511)	(0.0532)	(0.0625)
Observations	1,636	1,628	1,628	1,628	1,543
R-squared	0.021	0.038	0.041	0.052	0.057

<u>Lecture</u> : Coefficients are estimated by an OLS estimation on Sweden's data. For model (1) without any control variables, belonging to the age group 36-55 and 56-over increases the rate of positive answers of respectively 6.01 and 17.1 percentage points (statistically significant) compared to the reference age group 15-35. When we add controls for socioeconomic characteristics, risk aversion, employment relationship, and income, the results become respectively 6.79 and 13.2 percentage points of difference compared to the reference age group.

Standard errors are written in parentheses.

Asterisks indicate a significant difference from baseline, with *** p<0.01, ** p<0.05, * p<0.1

Source : ESS4, Country File : Sweden, 2008/9

Germany and United Kingdom : the intermediary case

We can here define Germany and United Kingdom as the intermediary case. For Germany in Q3, when we look at model (1) without any control, belonging to the age group 36-55 and 56-over increases the rate of positive answers of respectively 2.77 and 6.28 percentage points compared to the reference age group 15-35. For United Kingdom, the results are 4.72 and 10.5. When in model (5) we add controls for socioeconomic characteristics, risk aversion, employment relationship, and income, the results become respectively 4.00 and 7.60 percentage points of difference compared to the reference age group for Germany, and 3.66 and 9.62 for United Kingdom. The results for Q2 in model (5) exhibit a smaller cohort effect for Germany, and are not significant for United Kingdom. On the other hand, the income effect appears really strong and significant : between 7 and 23 percentage points of difference between groups of income for Germany. For United Kingdom, the cohort effect is counterbalanced by a significative negative effect of income (around 10% of decrease for the two highest income groups).

For both countries, the effect is clear cut : the gap is positively high for the very old, and negatively high for the very rich. It is not very surprising to find an important income effect in countries often characterized by their liberal philosophy and by the role devoted to individual success. United Kingdom has the smallest level of welfare state compared to the other countries of the sample, so it appear quite intuitive that welfare state is not a prerequisite for the British to succeed in life. On the other hand, the fact that the british pensions system is not very generous for retiree explains maybe this prevalence of the income effect. Cohort effect in itself doesn't resist very well the introduction of control variables. Concerning Germany, we have basically a problem of significativity that doesn't allow us to conclude, except for the very old in Q3. The income effect is however very (negatively) important and significative in Q2, as for almost every country of the sample.

Table 4.11: **Regression "Government should increase taxes a lot and spend much more on social benefits and services" Q3, Germany**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0277	0.0224	0.0261	0.0253	0.0400
	(0.0262)	(0.0246)	(0.0218)	(0.0264)	(0.0290)
age56 and over	0.0628*	0.0682***	0.0721***	0.0719***	0.0760***
	(0.0251)	(0.0243)	(0.0268)	(0.0268)	(0.0294)
eduyrs		0.00564*	0.00613**	0.00630**	0.00664**
		(0.00294)	(0.00298)	(0.00302)	(0.00335)
risklover			yes	yes	yes
cdi			yes	yes	yes
female				yes	yes
urban				yes	yes
disabled					yes
partner disabled					yes
Group 2					−0.0206
					(0.0235)
Group 3					−0.0735**
					(0.0331)
Constant	0.622***	0.545***	0.543***	0.532***	0.543***
	(0.0193)	(0.0441)	(0.0454)	(0.0487)	(0.0547)
Observations	2,490	2,480	2,480	2,480	2,088
R-squared	0.003	0.004	0.015	0.005	0.07

Lecture : Coefficients are estimated by an OLS estimation on Germany's data. For model (1) without any control variables, belonging to the age group 36-55 and 56-over increases the rate of positive answers of respectively 2.77 and 6.28 percentage points (statistically significant) compared to the reference age group 15-35. When we add controls for socioeconomic characteristics, risk aversion, employment relationship, and income, the results become respectively 4.00 and 7.60 percentage points of difference compared to the reference age group.

Standard errors are written in parentheses.

Asterisks indicate a significant difference from baseline, with *** p<0.01, ** p<0.05, * p<0.1

Source : ESS4, Country File : Germany, 2008/9

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Table 4.12: **Regression "Government should reduce differences in income levels" Q2, Germany**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0296	0.0456*	0.0541**	0.0542**	0.0485*
	(0.0241)	(0.0242)	(0.0257)	(0.0259)	(0.0280)
age56 and over	0.0326	0.0264	0.0353	0.0357	0.0144
	(0.0248)	(0.0247)	(0.0263)	(0.0263)	(0.0284)
eduyrs		−0.0150***	−0.0139***	−0.0138***	−0.00852***
		(0.00289)	(0.00293)	(0.00296)	(0.00323)
risklover			yes	yes	yes
cdi			yes	yes	yes
female				yes	yes
urban				yes	yes
Group 2					−0.0923***
					(0.0227)
Group 3					−0.235***
					(0.0320)
Constant	0.650***	0.851***	0.847***	0.823***	0.850***
	(0.0190)	(0.0434)	(0.0445)	(0.0478)	(0.0528)
Observations	2,490	2,480	2,480	2,480	2,088
R-squared	0.001	0.012	0.014	0.015	0.043

Lecture : Coefficients are estimated by an OLS estimation on Germany's data. For model (1) without any control variables, belonging to the age group 36-55 and 56-over increases the rate of positive answers of respectively 2.96 and 3.26 percentage points (statistically significant) compared to the reference age group 15-35. When we add controls for socioeconomic characteristics, risk aversion, employment relationship, and income, the results become respectively 4.85 and 1.44 percentage points (less significant) of difference compared to the reference age group.

Standard errors are written in parentheses.

Asterisks indicate a significant difference from baseline, with *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Source : ESS4, Country File : Germany, 2008/9

Table 4.13: **Regression "Government should increase taxes a lot and spend much more on social benefits and services" Q3, United Kingdom**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0472*	0.0454*	0.0435*	0.0413	0.0366
	(0.0261)	(0.0261)	(0.0263)	(0.0264)	(0.0281)
age56 and over	0.105***	0.122***	0.122***	0.119***	0.0962***
	(0.0267)	(0.0270)	(0.0271)	(0.0274)	(0.0298)
eduyrs		0.0104***	0.0101***	0.0100**	0.0144***
		(0.00282)	(0.00284)	(0.00288)	(0.00322)
risklover			yes	yes	yes
cdi			yes	yes	yes
female				yes	yes
urban				yes	yes
disabled					yes
partner disabled					yes
Group 2					−0.106***
					(0.0275)
Group 3					−0.104***
					(0.0309)
Constant	0.602***	0.455***	0.443***	0.468***	0.497***
	(0.0199)	(0.0445)	(0.0457)	(0.0533)	(0.0584)
Observations	2,066	2,056	2,056	2,056	1,793
R-squared	0.008	0.014	0.015	0.016	0.025

Lecture : Coefficients are estimated by an OLS estimation on United Kingdom's data. For model (1) without any control variables, belonging to the age group 36-55 and 56-over increases the rate of positive answers of respectively 4.72 and 10.5 percentage points compared to the reference age group 15-35. When we add controls for socioeconomic characteristics, risk aversion, employment relationship, and income, the results become respectively 3.66 and 9.62 percentage points (significant) of difference compared to the reference age group. Standard errors are written in parentheses.
Asterisks indicate a significant difference from baseline, with *** $p<0.01$, ** $p<0.05$, * $p<0.1$
Source : ESS4, Country File : United Kingdom, 2008/9

Table 4.14: **Regression "Government should reduce differences in income levels" Q2, United Kingdom**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	-0.0330	-0.0305	-0.0235	-0.0140	-0.0284
	(0.0272)	(0.0271)	(0.0273)	(0.0273)	(0.0288)
age56 and over	0.00191	-0.0174	-0.0106	0.00428	-0.0382
	(0.0278)	(0.0280)	(0.0281)	(0.0283)	(0.0306)
eduyrs		-0.0157^{***}	-0.0150^{***}	-0.0146^{***}	-0.00917^{***}
		(0.00293)	(0.00295)	(0.00294)	(0.00330)
risklover			yes	yes	yes
cdi			yes	yes	yes
female				yes	yes
urban				yes	yes
Group 2					-0.0995^{***}
					(0.0282)
Group 3					-0.207^{***}
					(0.0317)
Constant	0.589^{***}	0.812^{***}	0.814^{***}	0.701^{***}	0.767^{***}
	(0.0208)	(0.0462)	(0.0474)	(0.0551)	(0.0599)
Observations	$2,066$	$2,056$	$2,056$	$2,056$	$1,793$
R-squared	0.001	0.015	0.018	0.026	0.052

Lecture : Coefficients are estimated by an OLS estimation on United Kingdom's data. For model (1) without any control variables, belonging to the age group 36-55 and 56-over increases the rate of positive answers of respectively -3.30 and 0.0191 percentage points compared to the reference age group 15-35. When we add controls for socioeconomic characteristics, risk aversion, employment relationship, and income, the results become respectively -2.84 and -3.82 percentage points of difference compared to the reference age group. Standard errors are written in parentheses.

Asterisks indicate a significant difference from baseline, with *** p<0.01, ** p<0.05, * p<0.1

Source : ESS4, Country File : United Kingdom, 2008/9

France and Spain : uneven results

Concerning Spain, the effect of cohort is very weak and not statistically significant for Q3 both for model (1) and model (5) with controls. It is weak for Q2 in model (5) : 4.82 percentage points of difference for people aged of 36 to 55 years compare to the reference age group, and 5.16 for people aged of 56 and over. The main factor is the income one, but again with opposite sign according to the question, and when we look at the coefficient for "cdi" (cf. Tables A.21 and A.22 in Appendix), it appears also important, of opposite sign according to the question, and very significative : 0.0573^{***} for Q3 and -0.0657^{***} for Q2. For France, the coefficients for age group and income are of the same magnitude than Spain for Q2 : for age, 6.71 percentage points of difference for people aged of 56 and over with respect to the reference, for income : a negative difference of 7.07 for group 3. The cohort effect is much more important for Q3 (9.78 and 13.2 of difference for people aged between 36 and 55 and 56 and over respectively), and the income effect disappears.

In the case of France, given the results for Q3, we can use the same explanation as for Denmark : the historical one. As the cohort effect stays important even when controled by income and health state of the respondent and her/his partner (variables *disabled* and *partner disabled*), the post-war generation seems to be more supportive of the logic of the welfare state. However, concerning Q2, the cohort effect is not clear cut, and we notice the prevalence of the income effect. In France as in Spain, the income inequalities seem to be the major factor of difference between positive answers' rates, even if the conclusion stays ambiguous as the sign of the coefficient if income is different according to the question. Following Van de Velde [20] , we cannot deny the fact that family is a major *welfare pillar* in those countries. Both confronted to a difficult entry on the job market, the support of the family is crucial for the young in Spain as in France. In Spain, Van de Velde identifies family membership as the dominant logic. Even if the ethic of individual autonomy is pregnant in France, family support is justified by the fact that studies, and then future position, are at stake. It is a proof, if we needed one, that the question of redistribution is really multidimensional, and that we cannot conclude anything about the relationship between population and redistribution if we don't open the black box of redistribution.

Table 4.15: **Regression "Government should increase taxes a lot and spend much more on social benefits and services" Q3, France**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0852***	0.0973***	0.0951***	0.0969***	0.0978***
	(0.0267)	(0.0267)	(0.0282)	(0.0282)	(0.0294)
age56 and over	0.0821***	0.128***	0.127***	0.129***	0.132***
	(0.0274)	(0.0286)	(0.0297)	(0.0297)	(0.0314)
eduyrs		0.0135***	0.0134***	0.0132***	0.0122***
		(0.00283)	(0.00286)	(0.00288)	(0.00325)
risklover			yes	yes	yes
cdi			yes	yes	yes
female				yes	yes
urban				yes	yes
disabled					yes
partner disabled					yes
Group 2					0.0282
					(0.0292)
Group 3					0.0129
					(0.0316)
Constant	0.622***	0.432***	0.426***	0.432***	0.439***
	(0.0200)	(0.0445)	(0.0455)	(0.0488)	(0.0540)
Observations	1,846	1,827	1,827	1,827	1,659
R-squared	0.007	0.019	0.020	0.021	0.022

Lecture : Coefficients are estimated by an OLS estimation on France's data. For model (1) without any control variables, belonging to the age group 36-55 and 56-over increases the rate of positive answers of respectively 8.52 and 8.21 percentage points (statistically significant) compared to the reference age group 15-35. When we add controls for socioeconomic characteristics, risk aversion, employment relationship, and income, the results become respectively 9.78 and 13.2 percentage points (significant) of difference compared to the reference age group.

Standard errors are written in parentheses.

Asterisks indicate a significant difference from baseline, with *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Source : ESS4, Country File : France, 2008/9

Table 4.16: **Regression "Government should reduce differences in income levels" Q2, France**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0511**	0.0435*	0.0436*	0.0456*	0.0544**
	(0.0238)	(0.0238)	(0.0251)	(0.0251)	(0.0258)
age56 and over	0.0900***	0.0591**	0.0606**	0.0605**	0.0671**
	(0.0244)	(0.0255)	(0.0264)	(0.0265)	(0.0275)
eduyrs		-0.0119***	-0.0119***	-0.0123***	-0.0101***
		(0.00253)	(0.00255)	(0.00256)	(0.00281)
risklover			yes	yes	yes
cdi			yes	yes	yes
female				yes	yes
urban				yes	yes
Group 2					-0.00233
					(0.0211)
Group 3					-0.0707**
					(0.0277)
Constant	0.729***	0.895***	0.888***	0.860***	0.858***
	(0.0178)	(0.0397)	(0.0405)	(0.0435)	(0.0473)
Observations	1,846	1,827	1,827	1,827	1,659
R-squared	0.007	0.020	0.020	0.024	0.031

<u>Lecture</u> : Coefficients are estimated by an OLS estimation on France's data. For model (1) without any control variables, belonging to the age group 36-55 and 56-over increases the rate of positive answers of respectively 5.11 and 9.00 percentage points (statistically significant) compared to the reference age group 15-35. When we add controls for socioeconomic characteristics, risk aversion, employment relationship, and income, the results become respectively 5.44 and 6.71 percentage points (significant) of difference compared to the reference age group.

Standard errors are written in parentheses.

Asterisks indicate a significant difference from baseline, with *** p<0.01, ** p<0.05, * p<0.1

Source : ESS4, Country File : France, 2008/9

Table 4.17: **Regression "Government should increase taxes a lot and spend much more on social benefits and services" Q3, Spain**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0267	0.0377	0.0191	0.0219	−0.0253
	(0.0239)	(0.0240)	(0.0250)	(0.0250)	(0.0310)
age56 and over	−0.0373	0.156	−0.00633	−0.00552	−0.00893
	(0.0248)	(0.0278)	(0.0289)	(0.0289)	(0.0364)
eduyrs		0.00865***	0.00711***	0.00602**	0.00548*
		(0.00231)	(0.00243)	(0.00288)	(0.00312)
risklover			yes	yes	yes
cdi			yes	yes	yes
female				yes	yes
urban				yes	yes
disabled					yes
partner disabled					yes
Group 2					0.0162
					(0.0304)
Group 3					0.0951**
					(0.0411)
Constant	0.646***	0.534***	0.530***	0.536***	0.575***
	(0.0169)	(0.0346)	(0.0372)	(0.0488)	(0.0476)
Observations	2,302	2,258	2,258	2,258	1,440
R-squared	0.003	0.009	0.012	0.017	0.018

Lecture : Coefficients are estimated by an OLS estimation on Spain's data. For model (1) without any control variables, belonging to the age group 36-55 and 56-over increases the rate of positive answers of respectively 2.67 and −3.73 percentage points (statistically significant) compared to the reference age group 15-35. When we add controls for socioeconomic characteristics, risk aversion, employment relationship, and income, the results become respectively −2.53 and −0.893 percentage points (less significant) of difference compared to the reference age group.

Standard errors are written in parentheses.

Asterisks indicate a significant difference from baseline, with *** p<0.01, ** p<0.05, * p<0.1

Source : ESS4, Country File : Spain, 2008/9

Table 4.18: **Regression "Government should reduce differences in income levels" Q2, Spain**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0253	0.0267	0.0477**	0.0421*	0.0482*
	(0.0209)	(0.0210)	(0.0218)	(0.0219)	(0.0266)
age56 and over	0.0341	0.0116	0.0363	0.0312	0.0516*
	(0.0217)	(0.0243)	(0.0253)	(0.0253)	(0.0313)
eduyrs		−0.00556***	−0.00378*	−0.00427**	−0.000488
		(0.00202)	(0.00209)	(0.00212)	(0.00268)
risklover			yes	yes	yes
cdi			yes	yes	yes
female				yes	yes
urban				yes	yes
Group 2					0.00556
					(0.0262)
Group 3					−0.0803**
					(0.0353)
Constant	0.755***	0.825***	0.829***	0.796***	0.784***
	(0.0148)	(0.0302)	(0.0302)	(0.0326)	(0.0409)
Observations	2,302	2,258	2,258	2,258	1,440
R-squared	0.001	0.005	0.011	0.014	0.022

Lecture : Coefficients are estimated by an OLS estimation on Spain's data. For model (1) without any control variables, belonging to the age group 36-55 and 56-over increases the rate of positive answers of respectively 2.53 and 3.41 percentage points compared to the reference age group 15-35. When we add controls for socioeconomic characteristics, risk aversion, employment relationship, and income, the results become respectively 4.82 and 5.16 percentage points (more significant) of difference compared to the reference age group. Standard errors are written in parentheses.

Asterisks indicate a significant difference from baseline, with *** p<0.01, ** p<0.05, * p<0.1

Source : ESS4, Country File : Spain, 2008/9

4.5   What about voting ?

Needless to say that the political implications of our results are not to underestimate. If it is now clear that in many countries, the support of redistribution is mostly embodied by the old, it would be surprising not to question those results in the light of evidences of political sciences and electoral sociology. It is often admitted that old people vote as a majority for party defined as right-wing. This acknowledgment is even more clear in France.

It seems reasonable to assert that a attitude toward redistribution cannot summarize a political stance. We propose then to use several indicators, doubtlessly all limited, to test this assertion using other items of the questionnaire. From the question "In politics people sometimes talk of "left" and "right". Where would you place yourself on this scale, where 0 means the left and 10 means the right?", we construct 3 dummy variables : "left" (score from 0 to 3 included), "center" (score from 4 to 6 included) and "right" (score from 7 to 10 included). It is necessary when building such indicators to be aware of their simplistic and in a sense trivial character, as they summarize on an unidimensional scale very striking political debates, and they implicitly assume that countries give the same signification to political stances and designations, that have actually very various meaning. So we will use it just in order to have a general idea on where people "place themselves".

Table 4.19:   **Placement on left right scale**

Item	age 15-35	age 36-55	age 56 and over
Left	$2,613$	$3,279$	$3,213$
	19.96%	21.04%	22.42%
Center	$7,033$	$8,227$	$7,084$
	53.72%	52.80%	49.43%
Right	$2,429$	$2,735$	$2,713$
	18.55%	17.55%	18.93%

Lecture : 19.96% of people aged between 15 and 35 place themselves on the left, 21.04% in the center, and 22.42% on the right.
Source : ESS4, 2008/9, whole base

As this table suggest it, people aged of 56 years and more are more to place themselves in the "left" position (22.42%) than the young (19.96%). Young people frequently place themselves in the "center" (53.72%), and the number of people placing themselves in the "right" position is quite equivalent accross age groups. To undertake this question thorough, we use to other "concrete" ideological questions, allowing us to "place ourselves" individuals.

Again, we make this "crossroads" choice in order to avoid underreporting bias, underlined in many political sciences work, and in the specific case of subjective data by Bertrand & Mullainathan [2001]. We choose two questions : one concerning immigration "To what extent do you think [country] should allow people of the same race or ethnic group as most [country]'s people to come and live here ?" , and one concerning insecurity "Does this worry about becoming a victim of violent crime have a serious/some effect(s) on the quality of your life ?". We present the results thereafter.

Table 4.20: **Allow many/few immigrants of different race/ethnic group from majority**

Item	age 15-35	age 36-55	age 56 and over
Allow many to come and live here	15.89%	13.95%	10.78%
Allow some	38.02%	36.36%	32.69%
Allow a few	31.63%	33.16%	36.34%
Allow none	14.46%	16.53%	20.18%

Lecture : 15.89% of people aged between 15 and 35 think that government should allow many immigrants of different race/ethnic group from majority to come and live in their country.
Source : ESS4, 2008/9, whole base

Table 4.21: **Worry about becoming victim of a violent crime has effect on quality of life**

Item	age 15-35	age 36-55	age 56 and over
Worry about becoming victim of violent crime has effect on quality of life	43.84%	45.4%	53.47%

Lecture : 43.84% of people aged between 15 and 35 think that worrying about becoming victim of a violent crime has an effect on quality of life.
Source : ESS4, 2008/9, whole base

We can see here that people aged of 56 and over present always a higher rate of positive answers on questions referring to values or political priorities than can be qualified as right-wing. On the question on security issues, we observe a gap of 10 percentage points between them and the young, and concerning immigration, the are more in favor of the restriction of the entry of migrants of a different ethnic group than the majority living in their country. But again, we need to be careful with these questions that can have different political implications according to the country. Nontheless, this reminds us that redistribution is a very specific political issue than can't in anyway summarize political attitudes, and then is only a part of a range of factors explaining voting behaviour.

5 | Conclusion

The model that we have presented in the general case suggested that in the presence of insecurity at the entry of adult life, the insurance effect would lead young people to have stronger preferences for redistribution than the rest of the population. However, the imperfect information on the return of their education level, the "institutional" parameters as the length before attaining a steady position on the job market, and the level of income in period 0, lead us to think that it is essential to consider public policies devoted to young people in each country. Looking at the European data, we observe clearly that old people are generally more in favor of redistribution in every country we studied, but this differential between age groups is less observable in countries where people judge the job opportunities for young people to be bad. The fate awaiting the young could then have an impact on the divergences of opinion about redistribution across generations.

We might therefore conclude that there exists no uniform generational opinion about the welfare state in Europe, and that opinion always depends on the current socioeconomic situation of age groups. What could appear simplistic is actually essential for those who fear the eruption of a generational conflict. Moreover, our study has shown that it is important to open the black box of redistribution. The possible reason why older Spanish people are less supportive of redistribution than older Danish people (as shown in the questionnaire results) may not be what we expect. It could be simply because intergenerational solidarity in Spain is not embodied by the intervention of the State but by private transfers within the family. As the typology of the welfare state reminds it, there exist three welfare pillars : State, market, and family. It is the proof, if we needed some, that intergenerational redistribution is not reducible to social redistribution.

At last, our conclusions about Denmark may have considerable political consequences. In a country where people benefit or have benefited from a very generous financing disposal backing the period separating the end of education and the entry on the job market at a durable position, the rate of answers in favor of additional redistribution is surprisingly low. These results challenge many presuppositions about the so-called "society of assistantship" and the infinite appetite for social spending.

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A | Appendix

A.1 Solution to case 3.2 **Protecting** d_0

Differentiating another time U with respect to t, we get :

$$-\frac{\pi\theta_i}{(t-1)^2} - \frac{[b(b-b\pi\theta_i)]}{(bt+\underline{y})^2} - \frac{1}{t^2\log(y_0)}$$

Assuming $y_0 < 1$ and as $\pi(\theta_i) < 1$ by construction, we get

$$-\frac{\pi\theta_i}{(t-1)^2} - \frac{[b(b-b\pi\theta_i)]}{(bt+\underline{y})^2} - \frac{1}{t^2\log(y_0)} < 0 \tag{A.1}$$

And as

$$\begin{cases} \lim_{t\to1} A_t = -\infty \\ \lim_{t\to0} A_t = +\infty \end{cases}$$

A_t is continuous, strictly decreasing in $[0,1]$, so there exists a unique t^* such that $A_t(t^*) = 0$. We have proven that t^* exists and is unique on $]0;1[$. The two solutions of t^* are :

$$t = 2b^2 - b^2\pi\theta_i - b\underline{y} - b\pi\theta_i\underline{y} - by_0 - \frac{\sqrt{(-2b^2 + b^2\pi\theta_i + b\underline{y} + b\pi\theta_i\underline{y} + by_0)^2 - 8b^2(-b\underline{y} - by_0 + b\pi\theta_i y_0 + \pi\theta_i\underline{y}y_0)}}{4b^2}$$
$$\tag{A.2}$$

or

$$t = 2b^2 - b^2\pi\theta_i - b\underline{y} - b\pi\theta_i\underline{y} - by_0 + \frac{\sqrt{(-2b^2 + b^2\pi\theta_i + b\underline{y} + b\pi\theta_i\underline{y} + by_0)^2 - 8b^2(-b\underline{y} - by_0 + b\pi\theta_i y_0 + \pi\theta_i\underline{y}y_0)}}{4b^2}$$
$$\tag{A.3}$$

A.2   Single-crossing property and median voter theorem

Let α_i captures voter's preferences. Here $\alpha_i = \theta_i$. The only source of preference hetero-geneity is the pre-tax distribution of levels of education in the population. Then α_i is unidi-mensional, one can project policy preferences over a policy q on the set of voter types v, and can rank voters according to their individual types, by ranking their level of education in v. $G(.)$ gives the percentage of voters of the population that have same policy preferences than a voter i α_i : $G(\alpha_i) = P(\theta \leqslant \theta_i)$ where $\alpha_i \in v$.

Let assume :

$$G(\theta_m) = P(\theta \leqslant \theta_m) = \int_0^{\theta_m} g(\theta_i) d\theta_i = \frac{1}{2}$$

where $g(\theta_i) = \frac{G(\theta_i)}{\theta_i}$.

The bliss point $q(\alpha_i) = q(\theta_i) = t_i$ is monotonically decreasing in voters' level of educa-tion θ_i. As α_i is unidimensional and preferences over t are monotonic, the single-crossing property holds, there exists a Condorcet Winner with the bliss point of the voter with median level of education $\alpha_m = \theta_m$.

Median voter theorem : If all voters have single-peaked policy preferences over a given ordering of policy alternatives, a Condorcet winner always exists and coincides with the median-ranked bliss point q_m .

A.3   Descriptive statics by countries

Table A.1: **Large differences in income acceptable to reward talents and efforts, France - Complete**

Stats	whole population	age1518	age1925	age2635	age3645	age4655	age5660	age6165	age6675	age76
Missing	5	0	0	0	1	0	0	0	1	3
	0.26%	0.0%	0.0%	0.0%	0.29%	0.0%	0.0%	0.0%	0.46%	1.66%
Agree str	276	8	26	35	61	48	26	20	23	29
	14.20%	10.26%	16.35%	11.48%	17.89%	13.91%	14.53%	14.49%	10.55%	16.02%
Agree	715	27	56	114	131	112	62	49	93	71
	36.78%	34.62%	35.22%	37.38%	38.42%	32.46%	34.64%	35.51%	42.66%	39.23%
Neither a nor dis	304	19	26	58	53	56	20	18	24	30
	15.64%	24.36%	16.35%	19.02%	15.54%	16.23%	11.17%	13.04%	11.01%	16.57%
Disagree	402	16	31	65	59	76	39	28	54	34
	20.68%	20.51%	19.50%	21.31%	17.30%	22.03%	21.79%	20.29%	24.77%	18.78%
Disagree str	242	8	20	33	36	53	32	23	23	14
	12.45%	10.26%	12.58%	10.56%	15.36%	17.88%	16.67%	10.55%	17.23	
Total	1,944	79	159	305	341	345	179	138	218	181
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A.2: **Government should reduce differences in income levels, France - Complete**

Stats	whole population	age1518	age1925	age2635	age3645	age4655	age5660	age6165	age6675	age76
Missing	4	1	0	0	1	0	0	0	0	2
	0.21%	1.28%	0.0%	0.0%	0.29%	0.0%	0.0%	0.0%	0.0%	1.10%
Agree str	795	22	58	115	120	152	99	53	99	77
	40.90%	28.21%	36.48%	37.70%	35.19%	44.06%	55.31%	38.41%	45.41%	42.54%
Agree	715	38	64	98	126	137	52	60	82	58
	36.78%	48.72%	40.25%	32.13%	36.95%	39.71%	29.05%	43.48%	37.61%	32.04%
Neither a nor dis	217	13	24	44	43	29	9	15	18	22
	11.16%	16.67%	15.09%	14.43%	12.61%	8.41%	5.03%	10.87%	8.26%	12.15%
Disagree	134	3	9	30	28	20	11	7	52	18
	6.89%	3.85%	5.66%	9.84%	8.21%	5.80%	6.15%	5.07%	26.40%	9.94%
Disagree str	79	1	4	18	23	7	8	3	11	4
	4.06%	1.28%	2.52%	5.90%	6.74%	2.03%	4.47%	2.17%	2.17%	2.21
Total	1,510	78	159	305	341	345	179	138	218	181
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A.3: **Large differences in income acceptable to reward talents and efforts, United Kingdom - Complete**

Stats	whole population	age1518	age1925	age2635	age3645	age4655	age5660	age6165	age6675	age76
Missing	23	1	3	2	5	1	0	0	5	6
	1.04%	1.06%	1.63%	0.56%	1.07%	0.27%	0.0%	0.0%	1.77%	2.48%
Agree str	206	5	17	34	58	40	18	14	20	16
	9.34%	5.32%	9.24%	9.47%	12.37%	10.87%	8.45%	7.57%	7.07%	2.48%
Agree	1,180	43	95	187	238	197	118	108	157	133
	53.51%	45.74%	51.63%	52.09%	50.75%	53.53%	55.40%	58.38%	55.48%	54.96%
Neither a nor dis	371	23	36	77	68	64	28	33	39	43
	16.83%	24.47%	19.57%	21.45%	14.50%	17.39%	13.15%	17.84%	13.78%	17.77%
Disagree	367	21	31	49	90	57	43	23	55	38
	16.64%	22.34%	16.85%	13.65%	19.19%	15.49%	20.19%	12.43%	19.43%	15.70%
Disagree str	58	1	2	10	10	9	6	7	7	6
	2.63%	1.06%	1.09%	2.79%	2.13%	2.45%	2.82%	3.78%	2.47%	2.48
Total	2,205	94	184	359	469	368	213	185	283	242
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A.4: **Government should reduce differences in income levels, United Kingdom - Complete**

Stats	whole population	age1518	age1925	age2635	age3645	age4655	age5660	age6165	age6675	age76
Missing	24	2	3	4	3	4	3	2	4	7
	1.09%	2.13%	1.63%	1.11%	0.64%	1.09%	1.41%	1.08%	1.41%	2.89%
Agree str	386	9	30	58	91	60	37	30	47	40
	17.51%	9.57%	16.30%	16.16%	19.40%	16.30%	17.37%	16.61%	16.53%	42.54%
Agree	885	37	79	150	167	141	82	77	117	99
	40.14%	39.36%	42.93%	41.78%	35.61%	38.32%	38.50%	41.62%	41.34%	40.91%
Neither a nor dis	450	30	38	76	91	81	40	34	57	59
	20.41%	31.91%	20.65%	21.17%	19.40%	22.01%	18.78%	18.38%	24.38%	12.15%
Disagree	394	14	29	65	94	71	42	36	51	32
	17.87%	14.89%	15.76%	18.11%	20.04%	19.29%	19.72%	19.46%	18.02%	13.22%
Disagree str	66	2	5	6	23	11	9	6	7	5
	2.99%	2.13%	2.72%	1.67%	4.90%	2.99%	4.23%	3.24%	2.47%	2.07
Total	2,205	94	184	359	469	368	213	138	283	242
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A.5: **Large differences in income acceptable to reward talents and efforts, Germany**

Stats	whole population	age1518	age1925	age2635	age3645	age4655	age5660	age6165	age6675	age76
Missing	26	6	5	4	3	7	5	2	6	4
	1.01%	5.45%	2.07%	1.23%	0.60%	1.27%	1.81%	1.06%	1.58%	2.07%
Agree str	190	12	19	19	40	31	17	17	29	14
	7.36%	10.91%	7.88%	5.83%	8.00%	5.64%	6.16%	9.04%	7.63%	7.25%
Agree	1,342	53	111	169	270	283	146	103	208	95
	52.02%	48.18%	46.06%	51.84%	54.00%	51.45%	52.90%	54.79%	54.74%	49.22%
Neither a nor dis	501	20	52	56	105	99	49	31	70	35
	19.42%	18.18%	21.58%	17.18%	21.00%	18.00%	17.75%	16.49%	18.42%	18.13%
Disagree	429	15	46	67	67	112	45	29	52	36
	16.63%	13.64%	19.09%	20.55%	13.40%	20.36%	16.30%	15.43%	13.68%	18.65%
Disagree str	92	4	8	11	15	18	14	6	15	9
	3.57%	3.64%	3.32%	3.37%	3.00%	3.27%	5.07%	3.19%	3.95%	4.66
Total	2,580	110	241	326	500	550	276	188	380	193
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A.6: **Large differences in income acceptable to reward talents and efforts, Denmark**

Stats	whole population	age1518	age1925	age2635	age3645	age4655	age5660	age6165	age6675	age76
Missing	19	7	0	0	1	1	1	1	3	5
	1.26%	8.86%	0.0%	0.0%	0.37%	0.39%	0.68%	0.65%	1.52%	4.50%
Agree str	251	9	26	27	55	42	20	26	30	16
	16.62%	11.39%	26.00%	13.99%	20.15%	16.47%	13.51%	16.88%	15.23%	14.41%
Agree	739	37	43	104	138	123	70	67	93	64
	48.94%	46.84%	43.00%	53.89%	50.55%	48.24%	47.30%	43.51%	47.21%	57.66%
Neither a nor dis	277	17	16	36	49	41	27	33	44	14
	18.34%	21.52%	16.00%	18.65%	17.95%	16.08%	18.24%	21.43%	22.34%	12.61%
Disagree	191	8	12	22	25	39	29	22	22	12
	12.65%	10.13%	12.00%	11.40%	9.16%	15.29%	19.59%	14.20%	11.17%	10.81%
Disagree str	33	1	3	4	5	9	1	5	5	0
	2.19%	1.27%	3.00%	2.07%	1.83%	3.53%	0.68%	3.25%	2.54%	0
Total	1,510	79	100	193	273	255	148	154	197	111
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A.7: **Government should reduce differences in income levels, Denmark**

Stats	whole population	age1518	age1925	age2635	age3645	age4655	age5660	age6165	age6675	age76
Missing	40	9	1	0	2	5	1	4	6	12
	2.65%	11.39%	1.0%	0.0%	0.73%	1.96%	0.68%	2.60%	3.05%	10.81%
Agree str	174	4	9	19	21	44	23	23	25	6
	11.52%	5.06%	9.00%	9.84%	7.69%	17.25%	15.54%	14.94%	12.69%	5.41%
Agree	443	18	22	57	81	71	50	48	67	29
	29.34%	22.78%	22.00%	29.53%	29.67%	27.84%	33.78%	31.17%	34.01%	26.13%
Neither a nor dis	327	26	34	39	54	55	27	30	33	29
	21.66%	32.91%	34.00%	20.21%	19.78%	21.57%	18.24%	19.48%	16.75%	26.13%
Disagree	425	19	28	67	88	64	38	38	52	31
	28.15%	24.05%	28.00%	34.72%	32.23%	25.10%	25.68%	24.68%	26.40%	27.93%
Disagree str	101	3	6	11	27	16	9	11	14	4
	6.69%	3.80%	6.00%	5.70%	9.89%	6.27%	6.08%	7.14%	7.11%	3.60
Total	1,510	79	100	193	273	255	148	154	197	111
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A.8: **Government should reduce differences in income levels, Germany**

Stats	whole population	age1518	age1925	age2635	age3645	age4655	age5660	age6165	age6675	age76
Missing	42	5	6	9	9	8	2	2	4	6
	1.63%	4.55%	2.49%	2.76%	1.80%	1.64%	2.90%	1.06%	1.05%	3.11%
Agree str	563	11	56	77	106	131	61	38	87	44
	21.82%	10.00%	23.24%	23.76%	21.20%	23.82%	22.10%	20.21%	22.89%	22.80%
Agree	1,173	55	112	132	215	262	130	82	184	81
	45.47%	50.00%	46.47%	40.49%	43.00%	47.64%	47.10%	43.62%	48.42%	41.97%
Neither a nor dis	385	25	32	60	85	61	33	34	49	38
	14.92%	22.73%	13.28%	18.240%	17.00%	11.09%	11.96%	18.09%	12.89%	19.69%
Disagree	353	12	32	40	74	75	36	28	43	38
	13.68%	10.91%	13.28%	12.27%	14.80%	13.64%	13.04%	14.89%	11.32%	10.88%
Disagree str	64	2	3	8	11	12	8	4	13	3
	2.48%	1.82%	1.24%	2.45%	2.20%	2.18%	2.90%	2.13%	3.42%	1.55%
Total	2,580	110	241	326	500	550	276	188	380	193
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

A.4   Comparisons France-Denmark
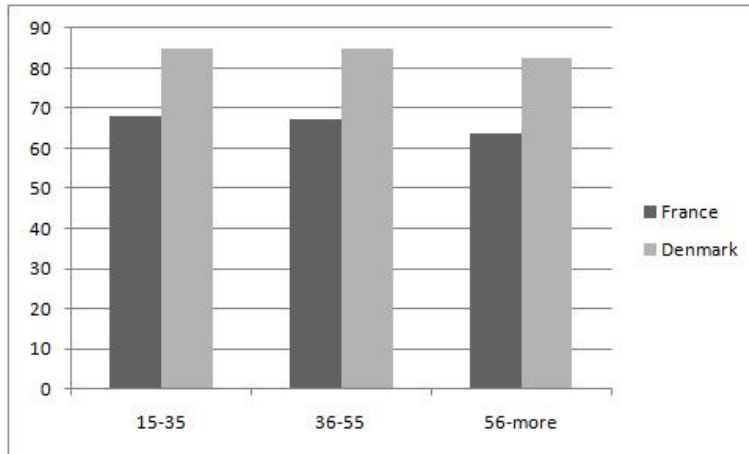
Figure A.1: **Large differences in income are acceptable to reward talents and efforts (Q1) - Comparisons between France and Denmark**

Lecture : The age-differential on the rate of positive answers to Q1 between 15-35 years old and 56-over years old amounts to 4.49 percentage points in France and 2.2 in Denmark. *Source : ESS4, Countries' files : Denmark and France, 2008/9*
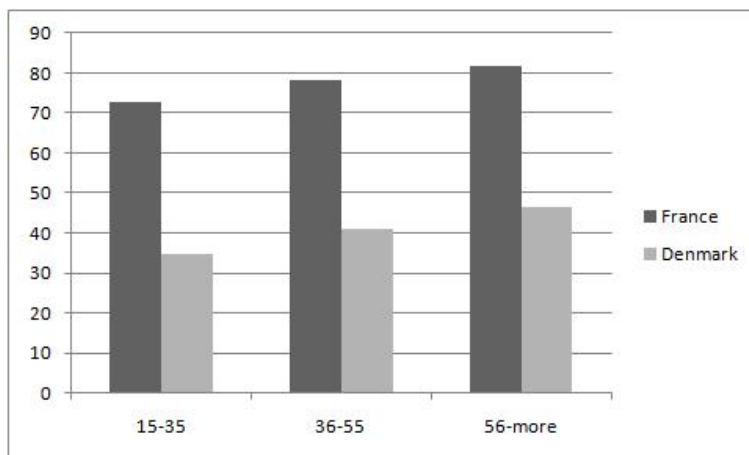
Figure A.2: **Government should reduce differences in income levels (Q2) - Comparisons between France and Denmark**

Lecture : The age-differential on the rate of positive answers to Q2 between 15-35 years old and 56-over years old amounts to 9 percentage points in France and 11.85 in Denmark. *Source : ESS4, Countries' files : Denmark and France, 2008/9*
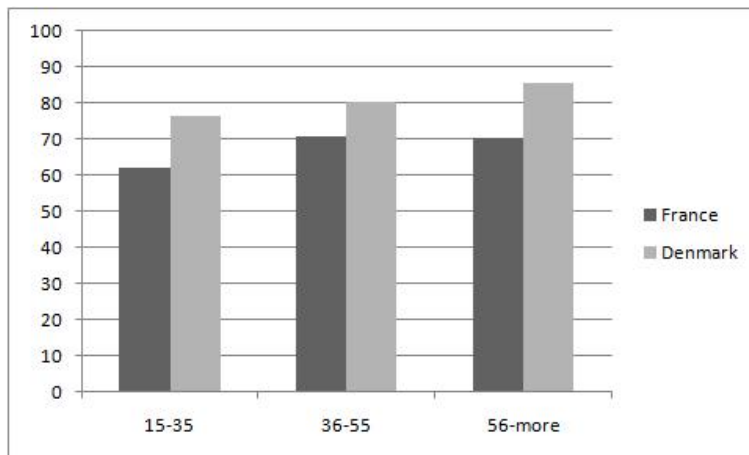
Figure A.3: **Government should increase taxes a lot and spend much more on social benefits and services (Q3) - Comparisons between France and Denmark**

Lecture : The age-differential on the rate of positive answers to Q3 between 15-35 years old and 56-over years old amounts to 8.21 percentage points in France and 9.42 in Denmark. *Source : ESS4, Countries' files : Denmark and France, 2008/9*

A.5   Complete regressions

Pooled regressions

Table A.9: **Regression "Government should reduce differences in income", whole base - Complete**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0348***	0.0363***	0.0466***	0.0440***	0.0363***
	(0.00486)	(0.00483)	(0.00498)	(0.00499)	(0.00580)
age56 and over	0.0793*	0.0435***	0.0538***	0.0512***	0.0387***
	(0.00493)	(0.00501)	(0.00520)	(0.00520)	(0.00613)
eduyrs		−0.0150***	−0.0143***	−0.0140***	−0.0113***
		(0.000495)	(0.000507)	(0.000512)	(0.000620)
risklover			−0.0699***	−0.0615***	−0.0534***
			(0.0739)	(0.00745)	(0.00895)
cdi			−0.0257***	−0.0235***	−0.00194***
			(0.00453)	(0.00399)	(0.00540)
female				0.0385***	0.0355***
				(0.00399)	(0.00466)
urban				−0.0141***	−0.00991**
				(0.00418)	(0.00487)
2nd decile					0.000249
					(0.0106)
3rd decile					0.00215
					(0.0104)
4th decile					-0.00896
					(0.0105)
5th decile					-0.0096
					(0.0107)
6th decile					−0.0198*
					(0.0110)
7th decile					−0.0345***
					(0.0110)
8th decile					−0.0512***
					(0.0113)
9th decile					−0.0737***
					(0.0115)
10th decile					-0.189***
					(0.0117)
Constant	0.682***	0.873***	0.878***	0.863***	0.872***
	(0.00720)	(0.0478)	(0.00722)	(0.00782)	(0.0112)
Observations	51,163	50,764	50,764	50,748	36,923
R-squared	0.004	0.022	0.024	0.026	0.040

Table A.10: **Regression "Government should increase taxes a lot and spend much more on social benefits and services", whole base - Complete**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0271***	0.0266***	0.0197***	0.0204***	0.0250***
	(0.00523)	(0.00523)	(0.00540)	(0.00541)	(0.00626)
age56 and over	0.0322***	0.0546***	0.0468***	0.0474***	0.0625***
	(0.00532)	((0.00543)	(0.00563)	(0.00564)	(0.00661)
eduyrs		0.0102*	0.00951***	0.00941***	0.00778***
		(0.000536)	(0.000549)	(0.000555)	(0.000670)
risklover			0.0205**	0.0186**	0.0142
			(0.00801)	(0.00809)	(0.00966)
cdi			0.0261***	0.0256***	0.0166***
			(0.00491)	(0.00492)	(0.00583)
female				−0.00935**	−0.00932*
				(0.00433)	(0.00503)
urban				0.00486	0.00680
				(0.00454)	(0.00526)
disabled					0.0175
					(0.0129)
partner disabled					0.0193
					(0.0198)
2nd decile					0.0363***
					(0.0114)
3rd decile					0.0472***
					(0.0112)
4th decile					0.0482***
					(0.0113)
5th decile					0.0709***
					(0.0116)
6th decile					0.0710***
					(0.0119)
7th decile					0.0632***
					(0.0119)
8th decile					0.0859***
					(0.0122)
9th decile					0.0578***
					(0.0124)
10th decile					0.0471***
					(0.0121)
Constant	0.607***	0.478***	0.475***	0.478***	0.460***
	(0.00381)	(0.00780)	(0.00783)	(0.00849)	(0.0121)
Observations	51,163	50,764	50,764	50,748	36,923
R-squared	0.001	0.008	0.008	0.009	0.010

Standard errors
in parentheses
***$p < 0.01$,
**$p < 0.05$,* $p < 0.1$

Countries' regressions

Table A.11: **Regression "Government should reduce differences in income levels", Denmark - Complete**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0642*	0.0636*	0.0735**	0.0713**	0.0783**
	(0.0332)	(0.0335)	(0.0345)	(0.0346)	(0.0375)
age56 and over	0.119***	0.114***	0.124***	0.123***	0.116***
	(0.0330)	(0.0333)	(0.0339)	(0.0339)	(0.0378)
eduyrs		-0.00160	-0.00140	-0.00171	0.00103
		(0.00286)	(0.00287)	(0.00289)	(0.00323)
risklover			-0.129^{**}	-0.111^{**}	-0.110^{*}
			(0.0531)	(0.0535)	(0.0588)
cdi			-0.0155	-0.0134	-0.00586
			(0.0353)	(0.0352)	(0.0392)
female				0.0676**	0.0562**
				(0.0261)	(0.0283)
urban				-0.00502	0.00817
				(0.0283)	(0.0307)
2nd decile					0.0367
					(0.0768)
3rd decile					-0.0251
					(0.0803)
4th decile					0.0189
					(0.0758)
5th decile					-0.0368
					(0.0738)
6th decile					-0.0403
					(0.0737)
7th decile					-0.00864
					(0.0748)
8th decile					-0.123
					(0.0756)
9th decile					-0.0221
					(0.0766)
10th decile					-0.129*
					(0.0735)
Constant	0.347***	0.370***	0.383***	0.355***	0.354***
	(0.0255)	(0.0449)	(0.0487)	(0.0528)	(0.0791)
Observations	1,448	1,438	1,438	1,438	1,253
R-squared	0.009	0.009	0.014	0.018	0.030

Standard errors
in parentheses
$^{***}p < 0.01,$
$^{**}p < 0.05,$ $^{*}p < 0.1$

Table A.12: **Regression Government should increase taxes a lot and spend much more on social benefits and services, Denmark - Complete**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.396	0.0355	0.0421	0.0444	0.0674**
	(0.0263)	(0.0264)	(0.0272)	(0.0272)	(0.0284)
age56 and over	0.0942***	0.101***	0.107***	0.108***	0.1121***
	(0.0261)	(0.0262)	(0.0267)	(0.0267)	(0.0287)
eduyrs		0.00378*	0.00392***	0.0031	0.00348
		(0.00225)	(0.00226)	(0.00228)	(0.00245)
risklover			−0.0776*	-0.0650	-0.0408
			(0.0418)	(0.0422)	(0.0446)
cdi			-0.0124	-0.0120	-0.0231
			(0.0278)	(0.0277)	(0.0298)
female				0.0400*	0.0316
				(0.0206)	(0.0214)
urban				0.0320	0.0425*
				(0.0223)	(0.0233)
disabled					0.0851
					(0.0602)
partner disabled					-0.168
					(0.104)
2nd decile					-0.0155
					(0.0582)
3rd decile					0.0706
					(0.0609)
4th decile					0.0497
					(0.0574)
5th decile					-0.0109
					(0.0559)
6th decile					-0.0539
					(0.0559)
7th decile					0.0327
					(0.0567)
8th decile					0.0295
					(0.0574)
9th decile					-0.0289
					(0.0574)
10th decile					-0.0907
					(0.0581)
Constant	0.763***	0.716***	0.725***	0.688***	0.700***
	(0.0201)	(0.0355)	(0.0384)	(0.0416)	(0.037)
Observations	1,448	1,438	1,438	1,438	1,253
R-squared	0.009	0.012	0.014	0.018	0.037

Standard errors
in parentheses
***$p < 0.01$,
**$p < 0.05$,*$p < 0.1$

Table A.13: **Regression "Government should increase taxes a lot and spend much more on social benefits and services", Sweden - Complete**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0731***	0.0734***	0.0967***	0.0937***	0.0965***
	(0.0278)	(0.0279)	(0.0301)	(0.0302)	(0.0309)
age56 and over	0.0852*	0.0848***	0.113***	0.110***	0.108***
	(0.0278)	(0.0284)	(0.0310)	(0.0311)	(0.0319)
eduyrs		0.00210	0.00292	0.00375	0.00303
		(0.00329)	(0.00330)	(0.00335)	(0.00355)
risklover			−0.138***	−0.141***	0.140***
			(0.0480)	(0.0484)	(0.0496)
cdi			-0.0495	-0.00504	-0.0507
			(0.0318)	(0.00318)	(0.0340)
female				0.0104	0.00391
				(0.0229)	(0.0236)
urban				0.0473*	−0.0456*
				(0.0254)	(0.0260)
disabled					−0.125*
					(0.0748)
partner disabled					0.0949
					(0.0849)
2nd decile					-0.0385
					(0.0908)
3rd decile					-0.108
					(0.0890)
4th decile					-0.0886
					(0.0869)
5th decile					-0.0678
					(0.0801)
6th decile					-0.0384
					(0.0782)
7th decile					-0.0504
					(0.0752)
8th decile					-0.000504
					(0.0748)
9th decile					-0.0531
					(0.0749)
10th decile					-0.127*
					(0.0763)
Constant	0.643***	0.617∗∗∗	0.637***	0.657***	0.731***
	(0.0197)	(0.0478)	(0.0493)	(0.0516)	(0.0820)
Observations	1,636	1,628	1,628	1,628	1,543
R-squared	0.007	0.007	0.012	0.005	0.021

Standard errors
in parentheses
*** $p<0.01$,
**$p<0.05$,*$p<0.1$

Table A.14: **Regression "Government should reduce differences in income levels", Sweden - Complete**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0601**	0.0725**	0.0824***	0.0768**	0.0727**
	(0.0290)	(0.0288)	(0.0312)	(0.0311)	(0.0315)
age56 and over	0.170***	0.144***	0.158***	0.147***	0.126***
	(0.0291)	(0.0294)	(0.0321)	(0.0321)	(0.0325)
eduyrs		−0.0177***	−0.0173***	−0.0181***	−0.0160***
		(0.00340)	(0.00342)	(0.00345)	(0.00362)
risklover			−0.105**	−0.0826*	−0.102**
			(0.0497)	(0.0499)	(0.0506)
cdi			-0.0122	-0.0102	-0.0192
			(0.0329)	(0.0328)	(0.0346)
female				0.102**	0.0911***
				(0.0236)	(0.0240)
urban				-0.0145	-0.00840
				(0.0261)	(0.0266)
2nd decile					0.218**
					(0.0926)
3rd decile					0.0805
					(0.0908)
4th decile					0.227**
					(0.0886)
5th decile					0.0884
					(0.0817)
6th decile					0.110
					(0.0798)
7th decile					0.114
					(0.0767)
8th decile					0.181**
					(0.0763)
9th decile					0.0279
					(0.0764)
10th decile					-0.0486
					(0.0779)
Constant	0.551***	0.785***	0.790***	0.762***	0.676***
	(0.0206)	(0.0495)	(0.0511)	(0.0532)	(0.0836)
Observations	1,636	1,628	1,628	1,628	1,543
R-squared	0.021	0.038	0.041	0.052	0.082

Standard errors
** $p<0.05$, * $p<0.1$

Table A.15: **Regression "Government should increase taxes a lot and spend much more on social benefits and services", Germany - Complete**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0277	0.0224	0.0261	0.0253	0.0408
	(0.0262)	(0.0246)	(0.0218)	(0.0264)	(0.0290)
age56 and over	0.0628*	0.0682***	0.0721***	0.0719***	0.0775***
	(0.0251)	(0.0243)	(0.0268)	(0.0268)	(0.0294)
eduyrs		0.00564*	0.00613**	0.00630**	0.00716*
		(0.00294)	(0.00298)	(0.00302)	(0.00338)
risklover			-0.0349	-0.0321	0.00470
			(0.0367)	(0.0370)	(0.0418)
cdi			-0.0515	-0.00451	0.00470
			(0.0252)	(0.0253)	(0.0285)
female				0.0128	0.00604
				(0.0194)	(0.0212)
urban				0.000274	-0.00572
				(0.0204)	(0.0224)
disabled					0.00826
					(0.0567)
partner disabled					0.0247
					(0.0987)
2nd decile					-0.0179
					(0.0428)
3rd decile					-0.0269
					(0.0418)
4th decile					-0.0224
					(0.0419)
5th decile					-0.0238
					(0.0430)
6th decile					-0.0467
					(0.0459)
7th decile					-0.0667
					(0.0470)
8th decile					-0.107**
					(0.0510)
9th decile					-0.0168
					(0.0586)
10th decile					-0.152**
					(0.0624)
Constant	0.622***	0.545***	0.543***	0.532***	0.551***
	(0.0193)	(0.0441)	(0.0454)	(0.0487)	(0.0600)
Observations	2,490	2,480	2,480	2,480	2,088
R-squared	0.003	0.004	0.015	0.005	0.010

Standard errors
in parentheses
*** p<0.01,
** p<0.05, * p<0.1

Table A.16: **Regression "Government should reduce differences in income levels", Germany - Complete**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0296	0.0456*	0.0541**	0.0542**	0.0530*
	(0.0241)	(0.0242)	(0.0257)	(0.0259)	(0.0279)
age56 and over	0.0326	0.0264	0.0353	0.0357	0.0189
	(0.0248)	(0.0247)	(0.0263)	(0.0263)	(0.0283)
eduyrs		−0.0150***	−0.0139***	−0.0138***	−0.00686**
		(0.00289)	(0.00293)	(0.00296)	(0.00325)
risklover			−0.0785**	−0.0725**	-0.0642
			(0.0360)	(0.0363)	(0.0402)
cdi			-0.0119	-0.00987	0.000697
			(0.0247)	(0.0248)	(0.0274)
female				0.0198	0.00911
				(0.0191)	(0.0204)
urban				0.0166	0.00821
				(0.0201)	(0.0215)
2nd decile					-0.0341
					(0.0412)
3rd decile					-0.0220
					(0.0402)
4th decile					−0.0932**
					(0.0403)
5th decile					-0.0476
					(0.0413)
6th decile					−0.137***
					(0.0442)
7th decile					−0.211***
					(0.0452)
8th decile					−0.219***
					(0.0490)
9th decile					−0.222***
					(0.0563)
10th decile					−0.379***
					(0.0600)
Constant	0.650***	0.851***	0.847***	0.823***	0.845***
	(0.0190)	(0.0434)	(0.0445)	(0.0478)	(0.0577)
Observations	2,490	2,480	2,480	2,480	2,088
R-squared	0.001	0.012	0.014	0.015	0.053

Standard errors
in parentheses
*** $p<0.01$,
** $p<0.05$, * $p<0.1$

Table A.17: **Regression "Government should reduce differences in income levels", United Kingdom - Complete**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	-0.0330	-0.0305	-0.0235	-0.0140	-0.0210
	(0.0272)	(0.0271)	(0.0273)	(0.0273)	(0.0287)
age56 and over	0.00191	-0.0174	-0.0106	0.00428	-0.0381
	(0.0278)	(0.0280)	(0.0281)	(0.0283)	(0.0306)
eduyrs		-0.0157^{***}	-0.0150^{***}	-0.0146^{***}	-0.00840^{**}
		(0.00293)	(0.00295)	(0.00294)	(0.00332)
risklover			-0.0968**	-0.0748*	-0.0517
			(0.0385)	(0.0388)	(0.0418)
cdi			-0.0107	-0.0114	0.00592
			(0.0247)	(0.0247)	(0.0266)
female				0.0644***	0.0376
				(0.0219)	(0.0231)
urban				0.0776***	0.0785***
				(0.0267)	(0.0280)
2nd decile					0.0248
					(0.0473)
3rd decile					-0.00854
					(0.0485)
4th decile					-0.0831
					(0.0505)
5th decile					-0.0334
					(0.0533))
6th decile					-0.104^{**}
					(0.0514)
7th decile					-0.143^{***}
					(0.0493)
8th decile					-0.168^{***}
					(0.0513)
9th decile					-0.0858
					(0.0538)
10th decile					-0.321^{***}
					(0.0498)
Constant	0.589***	0.812***	0.814***	0.701***	0.744***
	(0.0208)	(0.0462)	(0.0474)	(0.0551)	(0.0642)
Observations	2,066	2,056	2,056	2,056	1,793
R-squared	0.001	0.015	0.018	0.026	0.067

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A.18: **Regression Government should increase taxes a lot and spend much more on social benefits and services, United Kingdom**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0472*	0.0454*	0.0435*	0.0413	0.0358
	(0.0261)	(0.0261)	(0.0263)	(0.0264)	(0.0280)
age56 and over	0.105***	0.122***	0.122***	0.119***	0.0861***
	(0.0267)	(0.0270)	(0.0271)	(0.0274)	(0.0299)
eduyrs		0.0104***	0.0101***	0.0100**	0.0149***
		(0.00282)	(0.00284)	(0.00288)	(0.00324)
risklover			0.000835	-0.00388	0.0368
			(0.0371)	(0.0376)	(0.0408)
cdi			0.0279	0.0281	0.0531**
			(0.0238)	(0.0239)	(0.0260)
female				-0.0133	-0.0306
				(0.0212)	(0.0225)
urban				-0.0182	-0.0257
				(0.0258)	(0.0273)
disabled					0.0273
					(0.0515)
partner disabled					0.0206
					(0.0812)
2nd decile					0.0249
					(0.0462)
3rd decile					-0.144^{***}
					(0.0473)
4th decile					-0.127^{**}
					(0.0493)
5th decile					-0.127^{**}
					(0.0520)
6th decile					-0.104^{**}
					(0.0502)
7th decile					-0.208^{***}
					(0.0482)
8th decile					-0.182^{***}
					(0.0501)
9th decile					-0.112^{**}
					(0.0525)
10th decile					-0.142^{***}
					(0.0486)
Constant	0.602***	0.455***	0.443***	0.468***	0.527***
	(0.0199)	(0.0445)	(0.0457)	(0.0533)	(0.0627)
Observations	2,066	2,056	2,056	2,056	1,793
R-squared	0.008	0.014	0.015	0.016	0.036

Standard errors
in parentheses
$^{***}p < 0.01$,
$^{**}p < 0.05, ^{*}p < 0.1$

Table A.19: **Regression "Government should reduce differences in income levels", France - Complete**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0511**	0.0435*	0.0436*	0.0456*	0.0584**
	(0.0238)	(0.0238)	(0.0251)	(0.0251)	(0.0258)
age56 and over	0.0900***	0.0591**	0.0606**	0.0605**	0.0657**
	(0.0244)	(0.0255)	(0.0264)	(0.0265)	(0.0275)
eduyrs		−0.0119***	−0.0119***	−0.0123***	−0.0101***
		(0.00253)	(0.00255)	(0.00256)	(0.00281)
risklover			-0.0532	-0.0427	-0.0324
			(0.0399)	(0.0403)	(0.0423)
cdi			0.0148	0.0171	0.0251
			(0.0237)	(0.0238)	(0.0255)
female				0.0201	0.00695
				(0.0195)	(0.0201)
urban				0.0312	0.0305
				(0.0204)	(0.0211)
2nd decile					0.0141
					(0.0501)
3nd decile					-0.00210
					(0.0478)
4th decile					0.0306
					(0.0519)
5th decile					-0.0427
					(0.0504)
6th decile					0.0397
					(0.0474)
7th decile					-0.0291
					(0.0478)
8th decile					-0.0137
					(0.0474)
9th decile					-0.0671
					(0.0481)
10th decile					−0.140***
					(0.0489)
Constant	0.729***	0.895***	0.888***	0.860***	0.843***
	(0.0178)	(0.0397)	(0.0405)	(0.0435)	(0.0566)
Observations	1,846	1,827	1,827	1,827	1,659
R-squared	0.007	0.020	0.020	0.024	0.031

Table A.20: **Regression "Government should increase taxes a lot and spend much more on social benefits and services", France - Complete**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0852***	0.0973***	0.0951***	0.0969***	0.0984***
	(0.0267)	(0.0267)	(0.0282)	(0.0282)	(0.0296)
age56 and over	0.0821***	0.128***	0.127***	0.129***	0.132***
	(0.0274)	(0.0286)	(0.0297)	(0.0297)	(0.0316)
eduyrs		0.0135***	0.0134***	0.0132***	0.0128***
		(0.00283)	(0.00286)	(0.00288)	(0.00325)
risklover			-0.0186	-0.0213	-0.0327
			(0.0449)	(0.0453)	(0.0485)
cdi			0.0137	0.0110	0.00979
			(0.0266)	(0.0267)	(0.0291)
female				-0.0276	-0.0438*
				(0.0219)	(0.0231)
urban				0.0202	0.0178
				(0.0229)	(0.0242)
disabled					0.00765
					(0.0584)
partner disabled					-0.0125
					(0.102)
2nd decile					-0.0318
					(0.0573)
3rd decile					-0.0341
					(0.0546)
4th decile					0.0178
					(0.0593)
5th decile					0.0186
					(0.0576)
6th decile					0.0235
					(0.0542)
7th decile					-0.0381
					(0.0547)
8th decile					0.146
					(0.0542)
9th decile					-0.0370
					(0.0550)
10th decile					-0.0215
					(0.0559)
Constant	0.622***	0.432***	0.426***	0.432***	0.457***
	(0.0200)	(0.0445)	(0.0455)	(0.0488)	(0.0647)
Observations	1,846	1,827	1,827	1,827	1,659
R-squared	0.007	0.019	0.020	0.021	0.024

Table A.21: **Regression "Government should reduce differences in income levels", Spain - Complete**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0253	0.0267	0.0477**	0.0421*	0.0496*
	(0.0209)	(0.0210)	(0.0218)	(0.0219)	(0.0267)
age56 and over	0.0341	0.0116	0.0363	0.0312	0.0532*
	(0.0217)	(0.0243)	(0.0253)	(0.0253)	(0.0316)
eduyrs		−0.00556***	−0.00378*	−0.00427**	0.000126
		(0.00202)	(0.00209)	(0.00212)	(0.00271)
risklover			−0.0687**	−0.0492*	-0.0490
			(0.0277)	(0.0286)	(0.0363)
cdi			−0.0657***	−0.0521**	−0.0722***
			(0.0201)	(0.0208)	(0.0256)
female				0.0470**	0.0410*
				(0.0183)	(0.0224)
urban				0.0157	0.0185
				(0.0180)	(0.0222)
2nd decile					0.0246
					(0.0547)
3rd decile					-0.00731
					(0.0496)
4th decile					0.00346
					(0.0507)
5th decile					0.0298
					(0.0526)
6th decile					0.0207
					(0.0581)
7th decile					-0.0327
					(0.0564)
8th decile					-0.0231
					(0.0631)
9th decile					-0.0694
					(0.0663)
10th decile					−0.146**
					(0.0639)
Constant	0.755***	0.825***	0.829***	0.796***	0.774***
	(0.0148)	(0.0302)	(0.0302)	(0.0326)	(0.0550)
Observations	2,302	2,258	2,258	2,258	1,440
R-squared	0.001	0.005	0.011	0.014	0.027

Standard errors
in parentheses
*** p<0.01,
** p<0.05,* p<0.1

Table A.22: **Regression "Government should increase taxes a lot and spend much more on social benefits and services", Spain - Complete**

Variables	(1)	(2)	(3)	(4)	(5)
age3655	0.0267	0.0377	0.0191	0.0219	-0.0267
	(0.0239)	(0.0240)	(0.0250)	(0.0250)	(0.0310)
age56 and over	-0.0373	0.156	-0.00633	-0.00552	-0.00667
	(0.0248)	(0.0278)	(0.0289)	(0.0289)	(0.0367)
eduyrs		0.00865***	0.00711***	0.00602**	0.00558*
		(0.00231)	(0.00243)	(0.00288)	(0.00316)
risklover			0.0627**	0.0565*	0.0547
			(0.0317)	(0.0327)	(0.0423)
cdi			0.0573**	0.0443*	0.0367
			(0.0230)	(0.0238)	(0.0298)
female				−0.0417**	-0.0274
				(0.0209)	(0.0261)
urban				0.0613***	0.0194
				(0.0206)	(0.0259)
disabled					-0.123
					(0.0896)
partner disabled					0.0797
					(0.150)
2nd decile					0.0276
					(0.0636)
3rd decile					0.0630
					(0.0576)
4th decile					0.0864
					(0.0590)
5th decile					0.0424
					(0.0612)
6th decile					0.0459
					(0.0676)
7th decile					0.0399
					(0.0656)
8th decile					0.174**
					(0.0735)
9th decile					0.0706
					(0.0771)
10th decile					0.153**
					(0.0744)
Constant	0.646***	0.534***	0.530***	0.536***	0.533***
	(0.0169)	(0.0346)	(0.0372)	(0.0488)	(0.0640)
Observations	2,302	2,258	2,258	2,258	1,440
R-squared	0.003	0.009	0.012	0.017	0.022

Standard errors
in parentheses
*** p<0.01,
** p<0.05, * p<0.1

A.6   Additional informations on the sample

Table A.23: **Average unemployment rate in 2008**

In %	**France**	**Spain**	**United Kingdom**	**Germany**	**Sweden**	**Denmark**
	9.7%	13.2%	6.6%	16.5%	7%	3.5%

Source : Eurostat

Table A.24: **Financing principle of social security system for old age - Comparisons**

Financing Principle	**France**	**Spain**	**United Kingdom**
Description	Contributions (employees and employers) and taxes	Contributions (employees and employers)	Contributions (employees and employers)
	Germany	**Sweden**	**Denmark**
Description	Contributions (insured persons and employers) and taxes	Contributions (insured persons and employers) and taxes	Social Pension (Folkepension): Taxes. Supplementary pension (arbejdsmarkedet stillægspension, ATP): Contributions (employees and employers)

Source : Mutual Information System on Social Security Protection (MISSOC), European Commission, July 2011

Table A.25: **Demographic composition of the data set**

stats	age1518	age1925	age2635	age3645	age4655	age5660	age6165	age6675	age76
Whole base	2,215	5,299	8,605	9,116	8,962	4,423	3,919	6,495	2,129
	4.33%	10.36%	16.82%	17.82%	17.52%	8,64%	7.66%	12.69%	4,16%
France	78	159	305	341	345	179	138	218	181
	4.01%	8.18%	15.69%	17.54%	17.74%	9.21%	7.09%	11.21%	9.31%
Spain	102	251	444	465	342	167	151	271	218
	4.23%	10.41%	18.42%	19.29%	14.18%	6.93%	6.26%	11.24%	9.04%
GB	70	160	335	445	344	189	161	259	218
	3.21%	7.34%	15.36%	20.40%	15.77%	8.66%	7.38%	11.87%	9.99%
Germany	87	218	303	477	527	253	165	357	170
	3.40%	8.52%	11.85%	18.65%	20.61%	9.89%	6.45%	13.96%	6.65%
Sweden	94	179	268	290	260	122	151	196	156
	5.48%	10.43%	15.62%	16.90%	15.15%	07.11%	8.80%	11.42%	9.10%
Denmark	79	100	193	273	255	148	154	197	111
	5.23%	6.62%	2.781%	18.08%	16.89%	9.80%	10.19%	13.05%	7.35%