Essays on Aspects of Culture in Economics

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1. Introduction and Methodological Issues

1.1. Summary

There are three essays assembled in this doctoral thesis. They are titled “Markets wanted: the overshooting of competition beliefs in transition countries”, “Preferences for Redistribution around the World” and “Income Inequality and Symbolic Values: an exploratory analysis” and are all single authored.

All essays are based on the premise that economic agents make their choices within some kind of social structure. In the first essay on competition beliefs during transition, this structure only consists of shared information. The second essay analyses the determinants of preferences for redistribution. It is implicitly assumed that individual self-interest and social structure, both, determine individual preferences for redistribution. Concerns for social status, altruism, information about social mobility, fairness considerations and moral evaluations are shown to have a statistical relation with preferences for redistribution. The third essay undertakes an explorative analysis of the relation between symbolic values and the income distribution. The analysis is motivated by the implicit assumption that symbolic values are important elements in a multitude of economic decisions. Symbolic values correlate with individual choices across generations and/or across individuals. The notion of symbolic values goes back to Corneo (2010) and Corneo and Jeanne (2009, 2010). They provide a theoretical approach to tackle questions of endogenous preference formation while side-stepping methodological problems typically arising in the treatment of preference formation. More precisely, the theory of symbolic values succeeds in endogenizing individuals’ value systems and simultaneously allows for welfare judgments based on the Pareto-criterion.

1.1.1. “Markets Wanted – The overshooting of competition beliefs in transition economies”

The first paper relates to the literature on economic transition, on media capture and on the socialist legacy. It documents and rationalizes the overly optimistic embrace of market competition at the beginning of the transition from centrally planned communist economies to market economies. At the onset of this process, individuals in transition countries with basically no experience of the functioning of markets had far more positive attitudes toward competition than individuals experienced with market economies. Over time these beliefs converged toward levels observed in long time market economies. It is argued, that these strong beliefs in the benefits of competition allowed for the implementation of far reaching market reforms. In fact, competition beliefs are shown to have a positive statistical association with attitudes towards political and economic reform. These empirical findings are

rationalized with a simple signalling model. An outside consultant with experience of markets provides information on their desirability. Since individuals in transition countries have no experience with market economies, they use this signal to form beliefs about markets. However, in their belief formation they are aware that the outside consultant might follow some special interests and provide biased information. Overshooting and subsequent convergence can result from a pro market expert who provides a positive signal that is contradicted by experience, or from a neutral or anti-market expert who reports realistic messages but is not believed.

In virtually every modern society there is a constant struggle over state responsibilities for schooling, health, basic needs and most other aspects of life; should the government provide respective goods and services or should the individual decide for herself? This paper on the evolution of competition beliefs indicates that biased outside information made transition countries adopt more liberal reform policies since the electorate formed too high expectations of the net-benefits of markets.

1.1.2. “Preferences for Redistribution around the World”

The second paper gauges the determinants of individual preferences for redistribution. In a first step, the sample is restricted to the OECD countries and results from the relevant literature are reproduced and synthesised. One contribution thereby is the use of a larger sample and the possibility to account for changes over time. There are a considerable number of determinants proposed in the literature. Most publications single out one focus variable which is in general individually subjected to an empirical test. Since determinants found in other contributions are neglected, a missing variable bias should be present in these publications. The presently discussed paper tries to jointly estimate the effect of as many determinants as possible. Results confirm that next to income, education and gender, social status, social identity, the perceived reasons for poverty and the perception of individual autonomy and freedom are important determinants of preferences for redistribution in OECD countries. In a second step, the analysis is extended to a large set of non-OECD countries. From the 66 countries included in this sample, most have never been included in an analysis on preferences for redistribution. Income, education, social class and the perception of individual autonomy and freedom are identified as determinants for preferences of redistribution across the world. However, there are also differences between OECD and non-OECD countries. The effect of gender is weak and often insignificant in non-OECD countries. The effect of marriage and religion can not be observed at all. Instead, retirement is a

significant and highly robust determinant for preferences of redistribution in non-OECD countries.

1.1.3. “Income Inequality and Symbolic Values: an exploratory analysis”

After analysing how people think or feel about inequality and redistribution, the third paper takes a look at the effects the income distribution has on symbolic values. This paper undertakes a systematic empirical exploration of associations between important symbolic values and income inequality. Symbolic valuation of work ethic, civism, obedience, honesty, tolerance, altruism and saving behaviour are analysed. The implicit theoretical argument is that in societies with different degrees of inequality, parents (and other agents of socialization) might have systematically different incentives as to what kind of values they pass on to their children (or pupils/students). Since there is no further theoretical model to guide the empirical analysis, a broad set of specifications and measures are used. For each measure of income inequality eighteen different specifications are estimated. The measures of income inequality used are the Gini coefficient of gross and net household equivalent incomes, the lags thereof ten and twenty years ago, and the mean of the gross- and net-gini over the years when the respondent was aged 18-25. In addition, the Gini of gross and net incomes is instrumented with the population ratio of the middle-aged workforce to the whole workforce. Given that there are eighteen different items used to proxy symbolic values, individual results will not be mentioned here. While there are some measurable effects of income distribution on work ethics, obedience and tolerance, for most symbolic values the income distribution does not seem to be an important determinant.

The three essays show that non-economic cultural or social aspects can be fruitfully included in empirical economic analysis and add to our understanding of economic phenomena. The present work thus complements and corroborates theoretical contributions that assume importance of norms, symbolic values, beliefs and interdependent preferences.

1.2. Methodological Issues

All three contributions use survey data and official statistics from national and international statistics offices. For empirical work based on both, official statistics and survey data, some caveats are necessary.

Survey data has been disregarded in economics for a long time but is used heavily nowadays. Data obtained from surveys can be differentiated into objective and subjective data. Objective survey data refers to information that can also be counted, measured or

observed by third parties. In contrast, subjective survey data refers to subjective outcomes, which are internal to the respondent and, accordingly, can only be observed by herself through introspection. There are a number of problems associated with objective and subjective survey data alike and there is now a whole literature on measurement error in general and on measurement error in survey data in particular (e.g. Bound et al. 2001). A well researched problem that will not be elaborated upon any further is sample non-response and item non-response. Though, even if the respondent provides an answer, there are a number of factors introducing measurement error. Bound et al. (2001) point out a number of cognitive processes that influence how humans categorize and remember events and behaviours: the length of the recall period, the frequency, salience or importance of the event or behaviour to be retrieved. These factors change the cognitive effort a respondent has to make to "remember" the appropriate answer and will accordingly affect answers. Bertrand and Mullainathan (2001) present "evidence on how cognitive factors affect the way people answer survey questions." The ordering of questions has a proven effect on responses. This effect can arise from priming or a desire for consistency. The wording of the question has also been shown to influence responses. In addition, the scaling and ordering of possible response categories also has a systematic effect on the responses obtained in surveys (Bertrand and Mullainathan 2001). A related source of systematic bias in survey data are essential survey conditions. Most important are the mode (e.g. face-to-face, self-administered) and method (paper or computer assisted) of data collection and interviewer characteristics (Bound et al. 2001). Survey conditions in turn are one aspect of the strength of the social desirability bias, a response bias driven by respondents' desire for a good image and compliance with social and legal norms (Bertrand and Mullainathan 2001, Bound et al. 2001). All these problems of response bias become even more prevalent in the context of cross-national data collection. The most obvious obstacles in international survey data are imperfect translatability of items and obsolete response categories due to cultural differences (e.g. Pennell et al. 2010). In the context of international surveys, Judge and Schechter (2009) apply Benford's Law, which posits a distribution for the first digits in data, to evaluate data quality in survey data. They find that data from poorer countries seems to be of poorer quality. Benford's law of course only applies to objective data, since subjective data is ordinal by nature and there is no reason why ordinal response data should follow Benford's proposed distribution. Still, all problems of measurement errors discussed so far basically apply for objective and subjective survey data alike.

Some additional remarks are necessary for subjective survey data, which is central in all three essays of the present dissertation (competition beliefs, preferences for redistribution, symbolic values). For subjective questions there are additional important sources of measurement error not present for objective data. It is possible that the respondent has no opinion, attitude or preference on the subject matter surveyed and still feels hard pressed to give an answer. There is also evidence that people are wrong about their "attitudes" and also might adapt their mental states to precedent behaviour and past attitudes, a phenomenon known as cognitive dissonance (Bertrand and Mullainathan 2001).

Measurement error creates biased estimates when respective data is used in statistical work. Bertrand and Mullainathan (2001) analyse the effect of measurement error if subjective data is used as either dependent or independent variable. They find that "subjective measures may be helpful as independent variables in predicting outcomes" but "cannot reasonably be used as dependent variables, given that the measurement error likely correlates in a very causal way with the explanatory variables" (Bertrand and Mullainathan 2001). In contrast to this negative result, subjective measures are widely used as dependent variables in empirical economic analysis. There are large literatures on preferences for risk aversion, preferences for redistribution or happiness and life satisfaction research. Winkelmann (2002) and Hamermesh (2004) discuss the use of subjective data in economics and agree that their use can add to the understanding of economic phenomena (also as dependent variables). The strongest argument for the use of subjective data is that it is the easiest and sometimes the only way to obtain information on some central elements of economic theory, namely preferences and expectations. A second important aspect is data availability and low costs of obtaining data. Finally, data quality is a general issue in quantitative work not limited to survey data. In applying Benford's law, Rauch et al. (2011) show that Eurostat data, which is generated by the respective national statistical offices, is of quite heterogeneous quality across countries. Kapteyn and Yeb Ypma (2006) analyse measurement error and misclassification in a comparison of survey and register data. They find "substantial biases, both when using survey data and when using administrative data" and conclude that there are good reasons for the use of either type of data.

The long list of caveats notwithstanding, subjective survey data has been used in all three essays of the present dissertation. Its use is justified on multiple grounds. All subjective measures used as dependent variables relate to important economic phenomena and have the potential to provide additional insights. Competition beliefs influence the basic organization of society and the extent of reliance on market coordination. Preferences for redistribution

affect the design of the tax and transfer system. Symbolic values finally provide non-economic incentives in a wide range of economically important choice-situations. The availability of such information at low costs is an advantage of survey data that has already been mentioned. Finally, the reproduction of results based on similar subjective data from different surveys and different samples of countries can counteract the critique on subjective data. Measurement error due to wording, ordering of questions, interviewer bias and other survey context is surely present. However, different surveys with differently worded questions, in a different order and conducted across different countries surely induce different measurement errors. If estimation results can be reproduced and remain robust across data sets and items used to proxy a given subjective measure, this is a good indication that the measurement error present in subjective data does not result in systematically biased estimates.

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Markets wanted:
the overshooting of competition beliefs
in transition countries

Introduction

Following the dissolution of the Soviet Union, a number of countries engaged in a process of systemic change, replacing formerly centrally planned economies with market economies. Market reforms were in general supported by democratic decision-making. Involving citizens in the political process resulted in additional political constraints in the formulation of reform policies: beliefs of the electorate about how well markets work, found their expression in the ballots.

In the present paper individual beliefs on the effect of market competition and their evolution over time in transition economies and experienced market economies are analysed and compared. We argue that overly positive beliefs about the performance of markets prevailed at the time when transition began, allowing the implementation of far reaching reform policies. Hence, they played an important role at a crucial juncture in the history of those countries, contributing to extend the role of markets and reduce the role of the government in the coordination of economic activity.

There is a growing body of economic literature which seeks to understand the interaction between reform policies, policy outcomes and the reform path. Using a political economy approach, a number of theoretical contributions establish that adverse reform outcomes might lead to policy reversals or abolition of ongoing reforms.[1] In fact, public support for market reforms was widespread in most post-communist countries when strong reform policies were introduced. While policy measures and resulting outcomes varied greatly (Svenjar 2002, Milanovic 1999), all transition countries experienced a reduction in output, rising inequality, inflation, and unemployment (World Bank 2002, EBRD 1999). Economists and most politicians have been aware that adaptation processes are likely to lead to a temporary economic downturn, resulting in a J-shaped evolution of output and employment over the course of transition. Still, a lot of relevant actors where taken by surprise when public support rapidly diminished, reforms stalled, and in some countries parties opposing market reforms were soon voted into power (Wyplosz 1993, Fidrmuc 2000).

Empirical contributions analysing survey and election data complement theoretical approaches to understand the determinants of public support for market reforms. Using data from the Russian elections in 1995, Warner (2001) exploits regional variation in reform effort and finds that more intense reforms result in higher public support. Using election and survey data from 1991 to 1997 Jackson et al. (2003) show that a growth of new enterprises resulted in a pro-reform constituency which changed the political arena. For Bulgaria, Valev (2004)

[1] See for example Rodrik (1995), Dewatripont and Roland (1992, 1995) and Wyplosz (1993). Roland (2000, 2002) provides an extensive survey of the literature.

presents the rather surprising finding that personal unemployment results in stronger support for reform. He uses survey data and argues that the majority of the population is aware of the necessary short term cost of reforms, expecting future benefits. Doyle and Fidrmuc (2003) use opinion surveys from the Czech Republic from 1991 to 1998 to document political preference change of the constituency over time. While reforms had broad support at the onset of transition and political preferences mostly varied over age and education, economic outcomes got more decisive in later years. Private economy jobs and high incomes increased, the experience of widespread unemployment in the social environment decreased reform support. Another survey based analysis for Russia is presented by Eble and Koeva (2002). They find that education has a positive, age a negative effect on the support for reform. In addition, ideology, private sector participation and regional characteristics play a role in shaping reform preferences. Focusing on political constraints in the reform process, Doyle and Walsh (2007) find that voting in 1990, in the Czech Republic, was forward-looking and voters' expectations largely correct.

Next to theses single country studies, some authors have studied groups of transition countries. Fidrmuc (2000) analyses election outcomes for the Czech Republic, Hungary, Poland, and Slovakia, exploiting regional variation in population composition. He finds that private entrepreneurs, white collar workers and university educated voters are pro-reform, while the unemployed, retirees, blue collar and agricultural workers oppose reform. Hayo (2004) uses two data sets to separately perform a macro- and microeconomic analysis. On the macro level unemployment, inflation, privatization and enterprise restructuring are found to reduce public support for market reforms while democratization, foreign aid per capita and the creation of working financial markets increase support. On the micro level, labour market status, education, age, gender, the economic status of a person and ideology affect support for the creation of a market economy. Specifically, higher education and younger age are found to increase reform support; individual unemployment decreases the acceptance of reforms. Kim and Pirttilä (2006) use the Central and Eastern Eurobarometer Survey, also used by Hayo (2004), to examine the linkages between political constraints and economic reform. They show that support for reforms depend on past macroeconomic conditions and the perception of individual consequences of future reforms.

The present study uses a difference-in-difference estimation approach, to add to the understanding of public support for reform. However, instead of directly analysing survey questions on reform or election results, competition beliefs are analysed. It is argued that beliefs about the desirability or non-desirability of competition are fundamental to individual attitudes towards a market economy and accordingly shape attitudes toward systemic reform.

We find that at the onset of transition, beliefs in competition were far more optimistic in transition countries than in established market economies, contributing to the acceptance of wide ranging economic reforms. Overly optimistic competition beliefs, which are later revised, seem to contrast Doyle's and Walsh's (2007) finding that individuals behave forward looking and hold correct anticipations. This perspective of biased beliefs will be challenged in the second part of the paper, where a simple signalling model is employed to show that potentially biased media might induce perfectly rational agents to overestimate the merits of markets.

The present paper also connects to the literature on the socialist legacy, i.e. how do institutional differences under a socialist system affect individuals' preferences and beliefs (Murthi and Tiongson 2008 and references therein, Corneo and Grüner 2002, Alesina and Fuchs-Schündeln 2007). The paper is also closely related to the investigation of capitalism aversion as discussed by Landier, Thesmar and Thoenig (2008).

In the following section potential determinants of competition beliefs are evaluated. In Section 3 the data and sample used in the empirical analysis will be introduced. Descriptive and estimated results on the overshooting and convergence hypothesis are presented in Section 4. The linkage between competition beliefs and support for economic reforms will be considered in Section 5. In Section 6 possible explanations for the overshooting phenomenon will be considered. A simple signalling model will help to rationalize the empirical findings. Section 7 finally concludes.

Determinants of Faith in the Market

To investigate the dynamics of competition beliefs, we control for individual- and macro-level characteristics, which will be presented in detail in the next section. Respective variables are primarily included to control for potential conflating effects. However, for some of those variables, theoretical considerations justify their inclusion. Why and how would they affect competition beliefs?

Age determines an individual's position in the lifecycle. Success in competition demands physical and mental strength. At some point, aging reduces strength and thus the probability of successful competition. Accordingly, we can expect that a positive belief in competition declines with age. In addition, older individuals might possess human capital that is outdated and devalued in a competitive market environment (e.g. Chase 1998, Campos and Dabusinskas 2002, Guriev and Zhuravskaya 2009).

Different outcomes in the labour market for women and men are partly the result of a lower competitiveness of women (Gneezy et al. 2003, Datta Gupta et al. 2005a). We hypothesize that less competitive behaviour of women comes with a less positive attitude toward competition. However, Gneezy et al. (2008) show that there is a strong cultural component in gender differences with regard to competitiveness, so that the influence of gender on competition in principle might be ambiguous across countries.

With different sets of dummy variables we will control for marriage status, job status, job type and town size. Regarding marriage status, there is no conjecture as to the effect of being divorced or widowed. Married men earn a wage premium, which in the literature is explained either by marriage induced productivity increases or the presence of characteristics which are simultaneously desired in the labour and marriage market (Chun and Lee 2001, Datta Gupta et al. 2005a and 2005b, Nakosteen and Zimmer 1997). In any case, marriage raises the probability of successful competition so that married individuals should have more positive beliefs toward competition.

An individual's living environment presumably also influences beliefs. Dummy variables for town size are used to proxy for living environment. Population density rises with town size. Higher population density implies stronger competition due to more competitors. Thus bigger cities have stronger competition and their inhabitants should, in equilibrium, have more positive attitudes toward competition.

The variables on job status, job type and income might have a reciprocal relation with competition beliefs. Accordingly, specifications including those variables could result in biased estimates due to endogeneity. These variables will be included to assure robustness. The central argument that a possible endogeneity bias is not important in our context derives from the fact that the central result remains qualitatively robust across specifications.

To control for economy-wide factors, macro variables are taken into account. The market is the arena where competition is enacted. Macro variables indicate the performance of the economy and thus of the market and might influence individual judgments about the desirability of markets and competition. An additional argument for the inclusion of macroeconomic variables comes from the literature on economic voting. There it is argued that individual voting decisions are influence stronger by national economic conditions, than by individual economic circumstances (Valev 2004). Finally, we follow Hayo (2004) who presents compelling arguments for the inclusion of inflation, unemployment and GDP growth in the explanation of support for market reforms. We hypothesize that high inflation, high unemployment, low per-capita income, shrinking GDP (negative GDP growth) and high income inequality reduce support for competition.

Data and Sample

The analysis is based on data from the World Values Survey and the European Values Survey (WVS, 2006), a multinational survey conducted in four waves since 1980 in a host of countries.[2] The central item we focus on is a question on individual beliefs about the effects of competition:

> "Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 10 means you agree completely with the statement on the left; 1 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between.
> Sentences:
> Competition is good. It stimulates people to work hard and develop new ideas vs. Competition is harmful. It brings the worst in people."

The emphasis on hard work and the development of new ideas clearly indicates that the question refers to the incentives that people expect from a system of *market* competition. The dependent variable *competition* is coded so that it takes higher values for more positive beliefs about competition (from '1 Competition is harmful' to '10 Competition is good'). Likert-scaled variables on self-reported beliefs and attitudes often exhibit a lot of noise. To minimize the influence of noise, a binary dependent variable, *competition_bin10*, with a cut-off at 1 is coded. Robustness checks with dependent variables with cut-off points 9, 8, and 7 (*competition_bin9* - *competition_bin7*) and the original ordinal variable are performed. The distribution of this variable is shown in Table 1. Competition beliefs have not been surveyed in the first wave of the WVS. Accordingly, only waves 2, 3 and 4 are used. The surveys of the second wave have been conducted in the years 1989-1993. In fact, most transition countries are surveyed in 1990, at the onset of transition.[3]

Table 1: Distribution of the original dependent variables

competition		*Freq.*	*Percent*	***Cum.***
competition harmful	1	4,430	3.69	3.69
	2	2,201	1.83	5.53
	3	4,545	3.79	9.31
	4	4,759	3.97	13.28
	5	6,585	5.49	18.77
	6	18,235	15.2	33.96
	7	14,185	11.82	45.78
	8	19,211	16.01	61.79
	9	15,704	13.09	74.88
competition good	10	30,147	25.12	100
Total		120,002	100	

[2] Detailed documentation of the data can be obtained from http://www.worldvaluessurvey.org/
[3] The actual survey year in each wave and country is shown in Table A1 in Appendix A.

The sample for analysis is made up of OECD- and transition countries. Respective countries, their status and mean levels of competition beliefs (*competition_bin10*) by wave are shown in Table 2. On inspection of Table 2 it becomes obvious that there are a considerable number of countries without observations on competition beliefs at the onset of the transition process, i.e. in wave 2. These countries are dropped from the analysis, since it is precisely the beginning of transition we focus on.[4] We are left with a sample of 120,002 individual observations in 35 countries.[5] Romania has the highest value with 44% of respondents indicating that competition is a good thing. In the Netherlands, the countries with lowest competition beliefs, only 6% of the population hold such positive beliefs.

Table 2: Country means of *competition_bin10* by wave and country

Country	*Status*	*1989-1993*	*1994-1999*	*1999-2004*	***Total***
Albania	transition	.	0.175	0.313	0.244
Armenia	transition	.	0.210	.	0.210
Australia	OECD	.	0.271	.	0.271
Austria	OECD	0.251	.	0.231	0.241
Azerbaija	transition	.	0.343	.	0.343
Belarus	transition	0.313	0.269	0.249	0.276
Belgium	OECD	0.185	.	0.127	0.161
Bosnia	transition	.	0.341	0.362	0.351
Bulgaria	transition	0.392	0.233	0.324	0.316
Canada	OECD	0.339	.	0.229	0.281
Chile	OECD	0.333	0.190	0.194	0.249
Croatia	transition	.	0.355	0.441	0.394
Czech Republic	transition/OECD	0.537	0.211	0.267	0.392
Denmark	OECD	0.167	.	0.138	0.152
Estonia	transition/OECD	0.398	0.260	0.147	0.269
Finland	OECD	0.163	0.137	0.105	0.130
France	OECD	0.168	.	0.162	0.164
Georgia	transition	.	0.381	.	0.381
Germany-West	OECD	0.226	0.138	0.170	0.190
Germany-East	transition/OECD	0.343	0.147	0.172	0.233
Greece	OECD	.	.	0.152	0.152
Hungary	transition/OECD	0.296	0.319	0.294	0.301
Iceland	OECD	0.297	.	0.340	0.322
Ireland	OECD	0.210	.	0.202	0.206
Italy	OECD	0.185	.	0.187	0.186
Japan	OECD	0.097	0.092	0.115	0.103
South-Korea	OECD	0.364	0.163	0.151	0.227
Kyrgyz Rep	transition	.	.	0.383	0.383
Latvia	transition	0.552	0.240	0.264	0.335
Lithuania	transition	0.372	0.264	0.274	0.303
Luxembourg	OECD	.	.	0.156	0.156
Macedonia	transition	.	0.360	0.492	0.429
Mexico	OECD	0.296	0.248	0.437	0.313

[4] Altogether 34,883 observations are dropped. Countries are: Albania, Armenia, Australia, Azerbaijan, Bosnia, Croatia, Georgia, Greece, Kyrgyz Republic, Luxembourg, Macedonia, Moldova, New Zealand, Serbia, Switzerland and Ukraine.

[5] Albeit East- and West-Germany are unified since 1990, for the purpose of this study East-Germany is treated as a transition country.

Moldova	transition	.	0.348	0.222	0.285
Netherlands	OECD	0.069	.	0.053	0.061
New Zealand	OECD	.	0.254	.	0.254
Norway	OECD	0.231	0.176	.	0.204
Poland	transition/OECD	0.326	0.167	0.250	0.263
Portugal	OECD	0.212	.	0.204	0.208
Romania	transition	0.416	0.433	0.458	0.435
Russia	transition	0.353	0.273	0.242	0.285
Serbia	transition	.	0.360	0.308	0.329
Slovakia	transition/OECD	0.390	0.223	0.203	0.283
Slovenia	transition/OECD	0.340	0.256	0.295	0.296
Spain	OECD	0.153	0.166	0.152	0.155
Sweden	OECD	0.239	0.173	0.175	0.190
Switzerland	OECD	.	0.288	.	0.288
Turkey	OECD	0.303	0.466	0.357	0.394
Ukraine	transition	.	0.281	0.244	0.270
UK	OECD	0.197	.	0.116	0.165
USA	OECD	0.285	0.317	0.284	0.296
Total		0.286	0.267	0.237	0.262

To explain the difference between transition countries and established market economies with respect to competition beliefs, we control for individual socioeconomic factors as described in Table 3 and macroeconomic conditions at the country level (Table 4).

Table 3: Descriptive statistics of independent variables and controls

Variable	*Description*	*# Obs.*	*Mean*	*Std. Dev.*	*Min*	*Max*	***Reference Category***
transition	Transition Dummy	120002	0.388	0.487	0	1	
wave_2	surveyed in 1989-1993	120002	0.400	0.490	0	1	X
wave_3	surveyed in 1994-1999	120002	0.240	0.427	0	1	
wave_4	surveyed in 1999-2004	120002	0.359	0.480	0	1	
wave2_trans	interaction term	120002	0.140	0.347	0	1	X
wave3_trans	interaction term	120002	0.123	0.329	0	1	
wave4_trans	interaction term	120002	0.124	0.330	0	1	
age	age	119765	43.228	16.531	15	101	
age_sqr	age squared	119765	2141.954	1563.925	225	10201	
female	female	120002	0.521	0.500	0	1	
inc_quint1	Lowest income quintile	103763	0.196	0.397	0	1	
inc_quint2	2nd income quintile	103763	0.290	0.454	0	1	
inc_quint3	3rd income quintile	103763	0.252	0.434	0	1	X
inc_quint4	4th income quintile	103763	0.162	0.369	0	1	
inc_quint5	Highest income quintile	103763	0.100	0.299	0	1	
stat_single	single	119674	0.213	0.409	0	1	X
stat_married	married	119674	0.647	0.478	0	1	
stat_divorced	divorced or separated	119674	0.068	0.251	0	1	
stat_widowed	widowed	119674	0.073	0.260	0	1	
jobstat_full	full-time employed	116837	0.452	0.498	0	1	X
jobstat_part	part-time employment	116837	0.068	0.252	0	1	

jobstat_self	self employed	116837	0.065	0.247	0	1	
jobstat_retired	retired	116837	0.177	0.382	0	1	
jobstat_wife	housewife	116837	0.107	0.309	0	1	
jobstat_student	student	116837	0.055	0.228	0	1	
jobstat_unemp	unemployed	116837	0.058	0.234	0	1	
jobstat_other	other job status	116837	0.018	0.132	0	1	
job_manual	blue collar job	102302	0.404	0.491	0	1	X
job_manager	leading position	102302	0.082	0.275	0	1	
job_office	white collar job	102302	0.368	0.482	0	1	
job_farmer	farming	102302	0.053	0.223	0	1	
job_military	military	102302	0.009	0.096	0	1	
job_never	never had a job	102302	0.083	0.276	0	1	
job_other	other	102302	0.001	0.024	0	1	
townsize_1	2000 and less inhabitants	100612	0.164	0.370	0	1	X
townsize_2	2000-5000 inhabitants	100612	0.095	0.293	0	1	
townsize_3	5000-10000 inhabitants	100612	0.078	0.269	0	1	
townsize_4	10000-20000 inhabitants	100612	0.089	0.285	0	1	
townsize_5	20000-50000 inhabitants	100612	0.119	0.324	0	1	
townsize_6	50000-100000 inhabitants	100612	0.095	0.293	0	1	
townsize_7	100000-500000 inhabitants	100612	0.186	0.389	0	1	
townsize_8	500000 and more inhabitants	100612	0.174	0.379	0	1	

The macro variables of interest are unemployment, per-capita GDP, GPD-growth, inflation and the Gini coefficient of the income distribution. Macro data is obtained from the World Bank Development Indicator database (World Bank, 2009), the OECD (OECD, 2009) and the Standardized World Income Inequality Database (SWIID 2009). Descriptive statistics are shown in Table 4.

Table 4: Descriptive Statistics of macroeconomic variables

Variable	*Description*	*# Obs.*	*Mean*	*Std. Dev.*	*Min*	***Max***
inflation	inflation rate	107	27.514	97.583	-1.733	948.545
gdp_growth_wdi	real GDP growth rate	107	2.049	4.379	-14.574	10.653
ln_pcgdp_wdi	log per-capita GDP	111	9.687	0.541	8.374	10.578
unemp_oecd	unemployment rate	79	7.360	4.235	0.775	22.964
gini_gross_swiid	Gini of gross hh-incomes	109	40.675	6.951	25.757	55.324

Overshooting and Convergence in Competition Beliefs

At first, the evolution of unconditional means of competition beliefs in different samples is depicted. Econometric results using only micro-data are presented in the second part of this section. In the third part, macroeconomic variables will be added to the estimations and results from an extensive set of robustness tests will be reported.

Preliminary Results

More optimistic competition beliefs and subsequent convergence in transition countries can be observed for a variety of comparison groups. Average competition beliefs for East- and West-Germany with a quadratic fit are shown in Figure 1. The left panel shows the mean of the original ten scale variable *competition*, the right panel shows the mean of the binary variable *competition_bin10*. At the time of reunification, beliefs on competition on average have been more positive in East-Germany than in West-Germany. Over time, average beliefs of East-Germans converged to the West-German level. The same pattern can be found in Figure 2 and Figure 3. In Figure 2 the average competition beliefs of transition countries which are OECD members are compared to those of all other OECD countries. In Figure 2a and Figure 2b *competition* and *competition_bin10* with a linear and quadratic fit are depicted.

Figure 1: Average levels of *competition* (left) and *competition_bin10* (right) and quadratic fit.

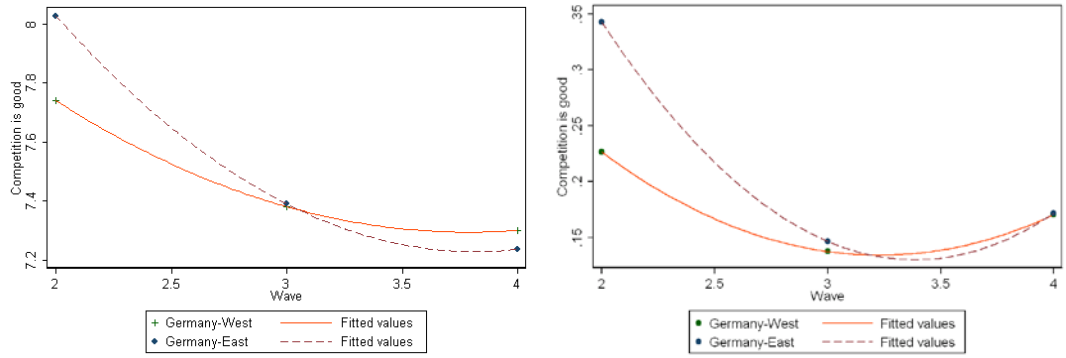


Figure 2a: Linear fit (left) and quadratic fit for country means of *competition*.

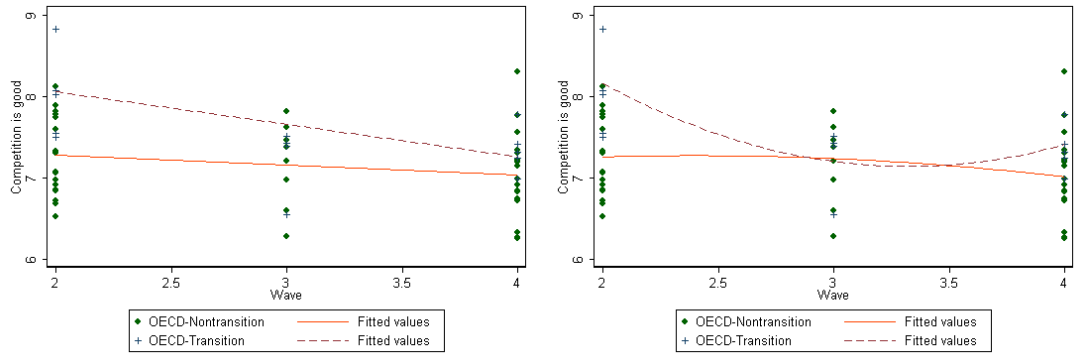
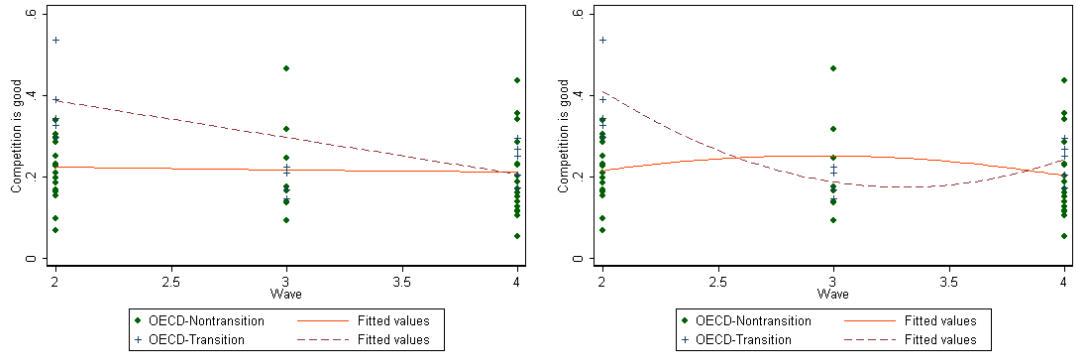
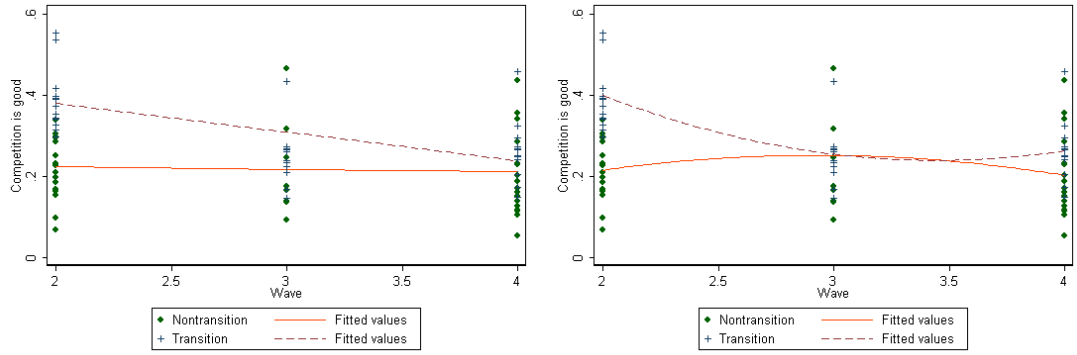


Figure 2b: Linear fit (left) and quadratic fit (right) for country means of *competition_bin10*.



In Figure 3, the mean levels of *competition_bin10* in all transition countries in the sample are compared to those in all non-transition countries.[6]

Figure 3: Linear fit (left) and quadratic fit for country means of *competition_bin10*.



Econometric Results

The overshooting and convergence we observe in the descriptive data might result from conflating factors like cultural differences, structural differences, economic performance, level of education and others. To control for these possibly conflating factors, multivariate regressions are employed. Using a difference-in-difference estimation approach, the basic specification of the logit model takes the form

(1) $$B^*_{ict} = \alpha + \beta T_c + \gamma_t W_t + \delta_t (T_c * W_t) + \lambda' X_i + \varepsilon_{ict}$$

(2) $$\Pr(B_{ict} = 1) = \Pr(B^*_{ict} > 0).$$

Competition belief *B* of individual *i*, living in country *c*, being surveyed at time *t*, is explained by individual characteristics X_i , a transition-country dummy T_c, wave dummies W_t and the interactions of wave and transition dummies. The transition dummy captures the effect of living in a transition economy. The interaction variables tell us whether and how the effect of

[6] In Appendix C the evolution of competition beliefs is shown for all countries individually.

living in a transition economy changes over time. Following the overshooting and convergence hypothesis we expect a positive but over time diminishing effect of T_c on the probability of optimistic competition beliefs (i.e. $\beta > 0, \delta_t < 0$).

As already mentioned, the limited dependent variable is constructed from the *competition* variable with cut-off 10, i.e. only individuals who unambiguously state that competition is good, will be coded 1, all others zero. The estimation is first performed on the sample of OECD countries; in a second step the exercise is repeated using the full sample. On each sample three models are estimated. Model 1 only includes time dummies, transition dummies and interactions thereof.[7] Model 2 is extended with the whole set of individual controls. Finally, model 3 additionally includes country dummies to control for unobservable country specific characteristics.[8] The results are presented in Table 5. All six estimations convey the same message. Living in a transition country significantly increases the probability of believing that market competition is good. The coefficients for the interaction dummies are negative and significant for both waves; the positive effect of living in a transition country on the probability for positive competition beliefs diminishes over time. With respect to competition beliefs, transition countries and experienced market economies get more similar over time.[9]

As shown by Moulton (1990), the inclusion of country dummies and other group or country specific variables, is likely to bias estimated standard errors downward. Accordingly, the results are derived using a robust estimator taking account of within country clustering.

Table 5: Main Results

	OECD	*OECD*	*OECD*	*full sample*	*full sample*	*full sample*
competition_bin10						
wave_3	0.022	-0.014	-0.329*	0.022	-0.030	-0.327*
	(0.11)	(-0.09)	(-2.17)	(0.11)	(-0.20)	(-2.17)
wave_4	-0.175+	-0.119	-0.185+	-0.175+	-0.114	-0.182+
	(-1.79)	(-1.11)	(-1.72)	(-1.80)	(-1.07)	(-1.65)
transition	0.847***	0.941***	0.594***	0.828***	0.940***	0.541***
	(4.12)	(3.93)	(8.70)	(5.35)	(4.85)	(7.81)
wave3_trans	-0.894**	-1.017***	-0.532**	-0.682**	-0.606*	-0.229
	(-3.06)	(-3.45)	(-2.65)	(-2.63)	(-2.47)	(-1.01)
wave4_trans	-0.607**	-0.690**	-0.524*	-0.450**	-0.551**	-0.385+
	(-2.94)	(-2.96)	(-2.21)	(-2.61)	(-2.74)	(-1.88)
age		-0.005	0.003		-0.007	-0.002
		(-1.11)	(0.58)		(-1.57)	(-0.35)
age_sqr		0.000	0.000		0.000	0.000
		(1.45)	(0.40)		(1.30)	(0.62)
female		-0.215***	-0.215***		-0.234***	-0.231***

[7] Note that time dummies are in fact wave dummies. The use of year dummies does not change central results. Some year dummies are insignificant and convergence can not be observed for all year-transition interactions, probably due to small case numbers for some years.

[8] For estimation equations for model 2 and 3 see Item B1 in the Appendix B.

[9] Estimations on the sample of East- and West-Germany alone, also confirm overshooting and convergence in competition beliefs. These and all following results that are not reported in full detail can be obtained from the author upon request.

		(-7.13)	(-7.12)		(-8.95)	(-8.97)
inc_quint1		-0.098	-0.132*		0.003	-0.052
		(-1.63)	(-2.56)		(0.03)	(-0.95)
inc_quint2		-0.072+	-0.097*		-0.032	-0.051
		(-1.90)	(-2.54)		(-0.82)	(-1.36)
inc_quint4		-0.012	0.001		0.022	0.033
		(-0.23)	(0.02)		(0.46)	(0.71)
inc_quint5		0.054	0.107+		0.127*	0.167**
		(0.78)	(1.84)		(2.09)	(3.25)
stat_married		0.063	0.016		0.070+	0.033
		(1.48)	(0.45)		(1.93)	(1.08)
stat_divorced		0.093	0.035		0.073	0.051
		(1.61)	(0.74)		(1.29)	(1.23)
stat_widowed		0.081	0.028		0.032	0.003
		(1.31)	(0.52)		(0.58)	(0.08)
jobstat_part		-0.160**	-0.160***		-0.159***	-0.160***
		(-3.28)	(-3.71)		(-3.97)	(-4.39)
jobstat_self		0.223***	0.133*		0.220***	0.124*
		(3.29)	(2.45)		(3.63)	(2.36)
jobstat_retired		0.011	0.035		-0.030	-0.019
		(0.23)	(1.05)		(-0.57)	(-0.43)
jobstat_wife		0.120+	0.097*		0.130*	0.107*
		(1.81)	(2.10)		(1.97)	(2.17)
jobstat_student		-0.048	-0.082		-0.038	-0.070
		(-0.27)	(-0.54)		(-0.27)	(-0.55)
jobstat_unemp		-0.047	-0.013		-0.043	-0.019
		(-0.66)	(-0.21)		(-0.66)	(-0.33)
jobstat_other		-0.141	-0.079		-0.064	-0.042
		(-1.31)	(-0.68)		(-0.62)	(-0.39)
job_manager		0.389***	0.401***		0.416***	0.426***
		(5.96)	(6.36)		(6.93)	(7.35)
job_office		0.042	0.045		0.089+	0.091*
		(0.75)	(0.99)		(1.68)	(2.10)
job_farmer		-0.082	-0.103		-0.093	-0.141*
		(-0.80)	(-1.61)		(-1.19)	(-2.43)
job_military		0.285**	0.283*		0.315***	0.321***
		(2.62)	(2.56)		(3.79)	(3.81)
job_never		-0.026	-0.022		0.012	0.000
		(-0.26)	(-0.29)		(0.14)	(0.00)
townsize_2		-0.002	-0.035		0.039	-0.018
		(-0.05)	(-0.51)		(0.80)	(-0.34)
townsize_3		0.038	0.074		0.118+	0.132*
		(0.57)	(1.36)		(1.76)	(2.36)
townsize_4		-0.072	0.035		-0.034	0.044
		(-0.76)	(0.57)		(-0.40)	(0.73)
townsize_5		-0.143	-0.066		-0.054	-0.002
		(-1.52)	(-1.40)		(-0.65)	(-0.03)
townsize_6		0.128	0.135*		0.196**	0.177***
		(1.56)	(2.42)		(2.74)	(3.61)
townsize_7		-0.040	-0.056		0.055	0.028
		(-0.51)	(-1.25)		(0.72)	(0.52)
townsize_8		0.058	-0.063		0.125	0.037
		(0.66)	(-0.98)		(1.62)	(0.55)
_cons	-1.239***	-1.175***	-1.126***	-1.239***	-1.192***	-1.053***
	(-12.91)	(-9.45)	(-13.49)	(-12.95)	(-8.67)	(-11.02)
Country Dummies	No	No	Yes	No	No	Yes
N	98496	57114	57114	120002	71948	71948
pseudo R^2	0.016	0.028	0.053	0.018	0.027	0.048

Notes: 1) Logit regression with *competition_bin10* as dependent variable. 2) *t*-statistics in parentheses.
3) Standard errors are robust to within country clustering. 4) $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Let's shortly consider the empirical results with respect to other determinants of competition beliefs. Age has no effect on competition beliefs. Women are less likely to favour market competition. The self-employed have a higher probability and part time workers a lower probability than fully employed workers to judge competition a good thing. Managers and army members have more faith in the market system than blue collar workers. High incomes are significantly positively associated with competition beliefs. For marriage status and town size results are ambiguous and do not allow clear-cut conclusions regarding their influence on competition beliefs.

To get a notion of the quantitative importance of respective variables, OLS estimations are performed (see Appendix A, Table A2). The robustness of the central overshooting and convergence result is confirmed with a wide array of different estimation methods and specifications, as discussed below.

Macroeconomic Influences and Robustness

Macroeconomic variables might convey important information on markets and competition which could explain both, the difference and convergence in competition beliefs. To incorporate the effect of macro variables, the standard specification is estimated with the inclusion of the inflation rate (*inflation*), the log of per-capita GDP (ln_pcgdp_wdi), GDP growth rate (*gdp_growth*), unemployment (*unemp_oecd*) and the Gini coefficient of market incomes (*gini_gross_swiid*), each in turn and all simultaneously. Again the robust variance estimator, taking account of within-country clustering, is used. Results for the OECD sample are shown in Table 6, for the full sample in Table 7.

As can be seen in Table 6, inflation has a negative effect on competition beliefs. The other macro variables do not show a statistically significant relation to competition beliefs. In all five models the overshooting and convergence of competition beliefs is confirmed.

Table 6: Results with macroeconomic variables on OECD sample

	OECD	*OECD*	*OECD*	*OECD*	*OECD*
competition_bin10					
wave_3	-0.335*	-0.333*	-0.305^{+}	-0.325^{+}	-0.292^{+}
	(-2.21)	(-2.18)	(-1.91)	(-1.69)	(-1.86)
wave_4	-0.203*	-0.193^{+}	-0.140	-0.107	-0.152
	(-1.97)	(-1.83)	(-0.89)	(-1.01)	(-1.19)
transition	0.659***	0.635***	0.595***	0.704***	0.588***
	(8.68)	(10.38)	(8.54)	(7.80)	(8.36)
wave3_trans	-0.645**	-0.611**	-0.530**	-0.716**	-0.519*
	(-3.20)	(-2.98)	(-2.65)	(-2.64)	(-2.32)
wave4_trans	-0.781**	-0.678**	-0.536*	-0.990**	-0.503*
	(-2.64)	(-3.13)	(-2.18)	(-3.02)	(-2.16)
inflation	-0.003*				
	(-2.51)				
gdp_growth_wdi		0.005			
		(0.38)			

ln_pcgdp_wdi			-0.207		
			(-0.29)		
unemp_oecd				0.032	
				(1.11)	
gini_gross_swiid					-0.012
					(-0.64)
Personal characteristics	Yes	Yes	Yes	Yes	Yes
Income quintiles	Yes	Yes	Yes	Yes	Yes
Marriage status	Yes	Yes	Yes	Yes	Yes
Job-status	Yes	Yes	Yes	Yes	Yes
Job dummies	Yes	Yes	Yes	Yes	Yes
Townsize	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes
_cons	-1.129***	-1.157***	0.974	-1.216***	-0.653
	(-13.19)	(-12.67)	(0.13)	(-9.30)	(-0.88)
N	55485	55485	57114	49348	56373
pseudo R^2	0.052	0.052	0.053	0.057	0.053

Notes: 1) Logit regression with *competition_bin10* as dependent variable. 2) *t*-statistics in parentheses.
3) Standard errors are robust to within country clustering. 4) $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

The estimations on the full sample (Table 7) show no statistical significant effect of any macro variable included. The overshooting and convergence effect persists. Note that the estimations shown in Table 7 do not include job information and information on townsize. Some 26,000 observations are lost with the inclusion of these variables. Also the overshooting and convergence results become somewhat weaker. Results also including these variables are shown in Table A3 in Appendix A.

Table 7: Results with macroeconomic variables on full sample

	full sample	*full sample*	*full sample*	*full sample*	*full sample*
competition_bin10					
wave_3	-0.137	-0.121	-0.120	-0.072	-0.106
	(-0.90)	(-0.78)	(-0.80)	(-0.43)	(-0.65)
wave_4	-0.139	-0.136	-0.104	-0.095	-0.110
	(-1.50)	(-1.53)	(-0.97)	(-1.12)	(-1.04)
transition	0.620***	0.573***	0.607***	0.771***	0.546***
	(6.81)	(5.79)	(6.01)	(7.02)	(6.08)
wave3_trans	-0.588*	-0.531*	-0.579*	-1.076***	-0.444+
	(-2.32)	(-2.18)	(-2.22)	(-3.93)	(-1.87)
wave4_trans	-0.579**	-0.427+	-0.524*	-0.797**	-0.407*
	(-3.04)	(-1.87)	(-2.38)	(-2.67)	(-2.22)
inflation	-0.001				
	(-1.56)				
gdp_growth_wdi		-0.017			
		(-1.18)			
ln_pcgdp_wdi			-0.156		
			(-0.36)		
unemp_oecd				-0.004	
				(-0.18)	
gini_gross_swiid					-0.017
					(-0.99)
Personal characteristics	Yes	Yes	Yes	Yes	Yes

Income quintiles	Yes	Yes	Yes	Yes	Yes
Marriage status	Yes	Yes	Yes	Yes	Yes
Labour market status	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes
_cons	-0.899***	-0.843***	0.693	-1.024***	-0.211
	(-9.59)	(-7.41)	(0.16)	(-9.86)	(-0.32)
N	96038	96038	99668	69516	99137
pseudo R^2	0.049	0.049	0.049	0.057	0.050

Notes: 1) Logit regression with *competition_bin10* as dependent variable. 2) *t*-statistics in parentheses.
3) Standard errors are robust to within country clustering. 4) $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

If all macro variables are included simultaneously, the overshooting and convergence effect persists. This is shown for the full sample in Table 8. Unemployment and the Gini of

Table 8: Results with simultaneously including all macro variables

	full sample	*full sample*	*full sample*	*full sample*	*full sample*
competition_bin10					
wave_3	0.145	0.166	0.168	-0.038	-0.142
	(1.13)	(1.31)	(1.32)	(-0.25)	(-1.11)
wave_4	0.287	0.376+	0.379+	-0.171	-0.321+
	(1.47)	(1.86)	(1.87)	(-0.70)	(-1.78)
transition	0.774***	0.766***	0.762***	0.787***	0.812***
	(5.78)	(6.10)	(6.05)	(6.20)	(6.79)
wave3_trans	-1.054***	-1.034***	-1.031***	-1.304***	-1.217***
	(-3.55)	(-3.52)	(-3.51)	(-3.44)	(-4.20)
wave4_trans	-0.898**	-0.834*	-0.833*	-1.012*	-1.167**
	(-2.67)	(-2.31)	(-2.31)	(-2.45)	(-3.00)
inflation	0.004	0.007	0.007	-0.006	-0.040***
	(0.24)	(0.50)	(0.51)	(-0.32)	(-3.93)
gdp_growth_wdi	0.003	0.008	0.009	-0.014	-0.073***
	(0.26)	(0.70)	(0.71)	(-1.01)	(-4.91)
ln_pcgdp_wdi	-1.948*	-2.214**	-2.211**	0.545	0.525
	(-2.37)	(-2.75)	(-2.74)	(0.43)	(0.53)
unemp_oecd	-0.047*	-0.040+	-0.040+	-0.016	-0.045
	(-2.36)	(-1.86)	(-1.87)	(-0.46)	(-0.88)
gini_gross_swiid	-0.024	-0.035*	-0.035*	-0.024	-0.000
	(-1.59)	(-2.10)	(-2.12)	(-1.52)	(-0.02)
Personal characteristics	Yes	Yes	Yes	Yes	Yes
Income quintiles	No	Yes	Yes	Yes	Yes
Marriage status	No	No	Yes	Yes	Yes
Labour market status	No	No	No	Yes	Yes
Job status	No	No	No	Yes	Yes
Townsize	No	No	No	No	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes
_cons	19.664*	22.801**	22.831**	-5.517	-5.930
	(2.34)	(2.74)	(2.74)	(-0.43)	(-0.59)
N	82074	69154	68983	57664	46978
pseudo R^2	0.050	0.055	0.055	0.060	0.059

Notes: 1) Logit regression with *competition_bin1*0 as dependent variable. 2) *t*-statistics in parentheses.
3) Standard errors are robust to within country clustering. 4) $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

market incomes show some negative association with competition beliefs; the other macro controls show ambiguous effects. Results are very similar for the OECD sample and will not be reported.

There is ample evidence that preferences for redistribution differ between people from post communist countries and those from long time market economies (Murthi and Tiongson 2008, Corneo and Grüner 2002, Alesina and Fuchs-Schündeln 2007). Thus, it is conceivable that the determinants of belief formation are different if socialised under a different system. In order to analyse whether determinants of competition beliefs differ between market economies and transition countries, an unconstrained logit model is estimated with all independent variables being interacted with the transition dummy. The constrained and unconstrained models are compared using the likelihood ration test (LR Test) and the Bayesian Information Criterion (BIC). Both tests refute the unconstrained model if estimated on the OECD sample, but recommend it when the estimation is done on the full sample. Estimation results with robust standard errors for the OECD and the full sample are shown in Table 9.

Table 9. Unrestricted Model - OECD & Full Sample

	(1)	*(2)*	*(1)*	(2)
competition_bin10	*OECD*	*OECD*	*Full sample*	*Full sample*
OECD-Sample				
wave_3	-0.228	-0.161	-0.228	-0.161
	(-1.35)	(-1.01)	(-1.35)	(-1.01)
wave_4	-0.214^{+}	-0.151	-0.214^{+}	-0.151
	(-1.91)	(-1.45)	(-1.91)	(-1.45)
transition	0.614**	0.475*	0.757***	0.585***
	(3.14)	(2.57)	(5.25)	(3.34)
wave3_trans	-0.695**	-0.781*	-0.473*	-0.456^{+}
	(-2.98)	(-2.49)	(-2.12)	(-1.85)
wave4_trans	-0.525*	-0.603**	-0.410*	-0.408*
	(-2.47)	(-2.69)	(-2.38)	(-2.16)
Personal characteristics and interactions	Yes	Yes	Yes	Yes
Income quintiles and interactions	Yes	Yes	Yes	Yes
Marriage status and interactions	No	Yes	No	Yes
Labour market status and interactions	No	Yes	No	Yes
Job status and interactions	No	Yes	No	Yes
Country Dummies	Yes	Yes	Yes	Yes
N	83439	69849	103660	86305
pseudo R^2	0.051	0.056	0.050	0.053

Notes: 1) Logit regression with *competition_bin10* as dependent variable. 2) *t*-statistics in parentheses.
3) Standard errors are robust to within country clustering. 4) $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

The overshooting and convergence hypothesis once more is confirmed. But there are some more interesting results. See the actual coefficients for these estimates, fully reported in

Table A4 in Appendix A. While the effect of gender is independent of cultural influences, the negative effect of age only arises in transition economies. This age effect is consistent with the effect of ideology which is more deeply engrained in older individuals (Alesina and Fuchs-Schündeln 2007, Eble and Koeva 2002) and the devaluation of system specific human capital of which older persons have accumulated more (Doyle and Fidrmuc 2003, Guriev and Zhuravskaya 2009). The negative effect of individual unemployment on competition beliefs only pertains in transition countries. In contrast, the effect of part time employment and self-employment is observed for all countries.

So far competition beliefs have been analysed, using *competition_bin10* as dependent variable. This binary variable has been coded from *competition*, a ten point Likert scaled variable, with cut-off point ten. It might well be that results are driven by the choice of the cut-off point. To exclude this possibility, the basic results (Table 5) are also estimated with modified dependent variables with cut-off point nine, eight, and seven. The overshooting and convergence effect is confirmed for all three alternative dependent variables. Results are presented in Table A5 in Appendix A. The overshooting and convergence hypothesis is confirmed.

All specifications presented so far, have been re-estimated, using ordered logit and ordinary least square on the original *competition* variable. All estimations reproduce the overshooting and convergence result.[10] Basic estimation with OLS are shown in Table A2 in Appendix A.

Competition Beliefs and Support for the Implementation of Markets

A central element of the transition process is the introduction of competitive markets. While competition is a universal phenomenon inherent in evolution, it is often and to a large extent associated with the way a market economy works.[11] It is this prevalence of competition in market economies, as compared to other form of social organisation, which allows for the presupposition that competition beliefs are indicative for individuals' attitudes and beliefs toward free competitive markets. These in turn affect the support for economic reforms during transition. This claim is now empirically substantiated.

Simple correlations between individual competition beliefs and questions regarding markets and market reforms provide first indicative evidence. Correlation coefficients of individual answers are calculated for each country and time point separately. If people think

[10] Results can be obtained from the author upon request.
[11] Independent of a society's economic organisation, there is competition for sexual partners, social prestige and the like.

that success results from hard work rather than luck or connections, this expresses a belief in the functioning of markets and the fairness of market results (Corneo 2001, Corneo and Grüner 2002, Benabou and Tirole 2006). In all countries in the sample, there is a tendency that people with more positive competition beliefs also think that hard work brings success.[12] On average the correlation coefficient is .26 (.16 to .34) in transition countries and .33 (.12 to .54) in established market economies. In wave 2 (1989-1993) there is an item stating that the "country's economic system needs fundamental changes".[13] In transition countries, individuals who feel positive about competition, tend to see a need for fundamental changes with correlation coefficients ranging from .02 to .21. On the contrary, in long time market economies the correlation is largely negative ranging from -0.27 to .07. However, since correlations only offer weak evidence for our claim that competition beliefs are intimately connected to political support for economic reforms, the effect of competition beliefs on the attitudes toward the need for fundamental systemic change is analysed using multivariate estimation.

To analyse individual attitudes toward the need for changes of the economic system, the dependent variable *need_change* is used. It takes on higher values with stronger agreement to the question "This country's economic system needs fundamental changes". The question was only survey in wave 2. Mean values across countries are depicted in Table A6 in Appendix A. Performing ordered logit estimations, the effect of the binary competition variable, used as dependent variable for the analysis of the overshooting and convergence effect is estimated. The first specification only includes personal characteristics, country dummies and the binary variable indicating strong competition beliefs (*competition_bin10*). Then a transition dummy and an interaction term are included; further control variables are added. Results are shown in Table 10. Strong competition beliefs have a positive and significant effect on the probability for holding strong reform attitudes. The interaction term indicates that this effect is stronger in transition countries. These results are reproduced with dummies for all levels of competition beliefs and interactions thereof. Results, which are shown in Table A7 in Appendix A, confirm that it is mainly in transition countries that competition beliefs have an important effect on attitudes toward economic reform. These results are robust to variations of the estimation method (Ordered Logit, Logit and OLS) and coding of the dependent variable (e.g. *need_change_bin5*).

[12] For detailed wording see Item B2 in Appendix B.
[13] Detailed wording of the item and descriptive statistics can be found in the Appendix, Item B3 and Table A6, respectively.

Table 10: The effect of competition beliefs on support for economic reform

	(1)	*(2)*	*(3)*	*(4)*	*(5)*
need_change					
competition_bin10	0.451***	0.243***	0.206***	0.199***	0.181***
	(10.01)	(8.61)	(6.59)	(6.11)	(5.14)
trans_comp10		0.449***	0.483***	0.494***	0.470***
		(9.65)	(9.89)	(9.92)	(8.33)
transition		5.012***	4.998***	4.998***	4.993***
		(51.81)	(50.83)	(50.66)	(49.84)
cut1					
_cons	-3.414***	-3.811***	-3.757***	-3.797***	-3.845***
	(-7.68)	(-43.47)	(-38.55)	(-35.44)	(-31.62)
cut2					
_cons	-1.856***	-2.127***	-2.073***	-2.106***	-2.154***
	(-7.12)	(-25.80)	(-22.50)	(-20.63)	(-18.51)
cut3					
_cons	-0.852***	-1.030***	-1.004***	-1.063***	-1.144***
	(-6.36)	(-12.68)	(-11.04)	(-10.52)	(-9.94)
cut4					
_cons	1.019***	0.982***	1.008***	0.973***	0.928***
	(12.75)	(12.10)	(11.10)	(9.65)	(8.07)
Personal characteristics	Yes	Yes	Yes	Yes	Yes
Income quintiles	No	No	No	Yes	Yes
Marriage status	No	No	No	Yes	Yes
Job-status	No	No	No	Yes	Yes
Job dummies	No	No	No	No	Yes
Townsize	No	No	No	No	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes
N	42475	42475	37148	35737	28461
pseudo R^2	0.081	0.122	0.128	0.132	0.133

Notes: 1) Ordered logit regression with *need_change* as dependent variable. 2) *t*-statistics in parentheses.
3) Standard errors are robust to within country clustering. 4) $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

There is arguably an endogeneity problem if competition beliefs are used as an explanatory variable for reform attitudes. For lack of a suitable instrument, this problem can not be tackled and estimation results might be biased. However, the unconditional correlations together with the regressions show the qualitative relation between competition beliefs and reform attitudes. We conclude that at the onset of transition, optimistic beliefs on the effect of market competition were conducive to strong reform attitudes in transition countries. Those strong reform attitudes very likely contributed to the implementation of rapid and far-reaching pro-market policies.

Why did Competition Beliefs Overshoot?

There are a number of possible accounts why competition beliefs overshoot. Very optimistic beliefs in the merits of competition in transition countries at the onset of transition could simply result from wrong expectations. People in transition countries knew about the relative material wealth in long time market economies and mistakenly believed that once market competition is introduced, their living standard will rise to similar levels. In fact, there is empirical evidence of the public holding biased beliefs on economic issues (Caplan 2002). There are also a number of theoretical approaches that elaborate upon standard economic theory to account for systematic biases. Caplan (2003) reviews these concepts and augments Downs's argument of rational ignorance to rational irrationality.[14] In contrast to mistakes and limited rationality, Doyle and Walsh (2007) claim that voting behaviour in the Czech Republic has been forward looking and the expectations of the electorate largely correct. We now present a simple model that shows how biased expert advice might result in overshooting and convergence of competition beliefs in a setting of full rationality with uncertainty. Our modelling strategy is inspired by Corneo (2006), who put forward the link between media capture and inequality. An empirical investigation of that link is offered by Petrova (2008).

A Simple Model

There are two countries A and B. At time $t = 0$, only the representative agent of country A has experienced a market economy. Country B is about to begin the transition from a planned to a market economy and must decide whether certain goods and services are to be provided by the government or through markets. In the long run, markets are expected to yield a welfare gain given by

$$U = \overline{U} + \omega V,$$

where $\overline{U}$ and V are constants, $V > 0$, and the state of the world ω can take two values, 0 and 1. Markets perform better if the state is 1 rather than 0. The state of the world is unknown to agents; without loss of generality, each state occurs with equal probability.

Long-term utility is not experienced until time $t = 2$. At $t = 0$, agents in country A directly receive a signal about the benefit of markets (first-hand experience). Agents in country B merely receive a report about that signal from a media expert (IMF, big shot, local guru, local pundit, anchorman...). The media industry has access to privileged information about the state of the world through the expert and uses a technology to communicate

[14] His argument boils down to the familiar argument that no rational agent will choose full rationality if its marginal benefit is smaller than marginal cost of information collection and processing.

messages to the representative agent. Specifically, the media expert's superior information about the underlying state ω comes from a signal $s_0 \in \{0,1\}$. With probability $p \in (1/2,1)$, this signal is equal to the true state, while with probability $1-p$ the agents are misinformed about the state. The media expert reports a message $r \in \{0,1\}$ about the state of the world to agent B.

The media expert may be one of three types and her type is her private information. With prior probability μ the expert is pro-market and always reports 1 irrespective of the signal that she observes. With probability η the expert is anti-market and always reports 0. With probability $1-\mu-\eta$ the expert is unbiased and truthfully reports the signal. The expert's type and the signal are independently distributed. Agents' beliefs in country B are formed according to Bayes's rule, as implied by the expert's report and the agents' priors about both the state of the world and the expert's type.

Between time $t=0$ and $t=1$ transition occurs and agent B also experiences a market economy. At $t=1$, both agents A and B observe a new signal s_1, drawn from the same distribution as s_0, and revise their beliefs about the virtues of markets. At $t=2$ the state of the world is realized and agents receive the associated long-term utility gain.

Equilibrium Beliefs at the onset of Transition

The inference problem of agent A at $t=0$ is straightforward: if the agent observes 1, he assigns probability p to the good state $(\omega=1)$, while if the signal is 0 the assigned probability is $1-p$. The inference problem of agent B is more difficult. Because of the possible expert's bias, agent B will not completely believe the media. The agent realizes that the reports of biased media convey no information, while with honest media an optimistic report on the virtues of markets means that the good state has probability p.

Without first-hand experience of markets, agent B assigns probability $q=\Pr(\omega=1|r=1)$ to the good state if the media's report is optimistic $(r=1)$; by Bayes' rule it is given by

$$q=\frac{\Pr(r=1|\omega=1)\Pr(\omega=1)}{\Pr(r=1|\omega=1)\Pr(\omega=1)+\Pr(r=1|\omega=0)\Pr(\omega=0)}.$$

If $\omega=1$, the probability to hear good news from an anti-market expert is zero, while that probability is 1 if the expert is pro-market. If the expert is honest, the probability to hear good news is *p*, i.e. the informativeness of the signal that she has observed. Thus, $\Pr(r=1|\omega=1)=\mu+(1-\mu-\eta)p$. By the same token, $\Pr(r=1|\omega=0)=\mu+(1-\mu-\eta)(1-p)$. Substituting into the above expression yields

$$q = \frac{(1-p)\mu + p(1-\eta)}{1+\mu-\eta}.$$

This probability is smaller than p because the media are not entirely credible. Therefore, rationality puts an upper bound to the extent of beliefs manipulation by means of media reports. The probability q assigned to state 1 is however strictly larger than 1/2, the prior probability of that state: $q \in (1/2, p)$. Conversely, if the media's report is pessimistic, the probability associated by agent B to the good state, $q' = \Pr(\omega = 1 | r = 0)$, is

$$q' = \frac{(1-p)(1-\mu) + p\eta}{1-\mu+\eta}.$$

In this case, one has $q' \in (1-p, 1/2)$.

Transition and Belief Change

At time $t = 1$, both agents, A and B, directly observe signal s_1 and revise their beliefs about the underlying state of the world in a Bayesian fashion. To illustrate, consider first agent A when the independent draws are $s_0 = s_1 = 0$. Then, the probability assigned at $t = 1$ to the good state is

$$\Pr(\omega = 1 | s_0 = 0, s_1 = 0) = \frac{(1-p)^2}{(1-p)^2 + p^2},$$

which is smaller than the probability assigned at time $t = 0$, $1-p$.

Consider now agent B observing $s_1 = 0$ after having received an optimistic message from the expert. In this case, she assigns probability $Q = \Pr(\omega = 1 | r = 1, s_1 = 0)$ to the good state; by Bayes's rule it is given by

$$Q = \frac{(1-p)\mu + p(1-p)(1-\mu-\eta)}{\mu + 2p(1-p)(1-\mu-\eta)}.$$

If instead agent B received $r = 0$ at $t = 0$, the probability that she assigns to the good state after observing a bad signal is

$$Q' = \frac{(1-p)\eta + (1-p)^2(1-\mu-\eta)}{\eta + [(1-p)^2 + p^2](1-\mu-\eta)}.$$

It is straightforward to show that $Q < q$ and $Q' < q'$, i.e. B's beliefs about the long term benefits of markets become less positive, once she obtains signals from first hand experience.

Model and Empirical Findings

In the data we observe that at the beginning of transition individuals from transition countries held more optimistic views about the market system than individuals from western countries. This is consistent with the model only if $s_0 = 0$, in which case agent A expects a long-term benefit $(1-p)V$, which is smaller than the benefit expected by agent B ($q'V$ or qV, depending on the media report). Notice that in the special case where anti-market experts are virtually impossible and thus η goes to zero, q' goes to $(1-p)$.[15] In this case, observing more optimistic beliefs in transition countries implies that $r = 1$ occurred. Since the true signal was 0, we can deduce that the media expert was biased in favour of markets if $\eta \approx 0$.

In the data we also observe that in transition countries attitudes towards markets became less favourable over time. This is consistent with the model only if $s_1 = 0$.

To sum up, the observed overshooting of beliefs about the virtues of markets can be rationalized in terms of media bias along two alternative lines:

1. Pro-market experts reported optimistic messages that were contradicted by experience;
2. Anti-market or honest experts reported realistic messages that were not completely believed by agents because they thought the experts to be biased against the market system.

Is the model also consistent with a convergence of beliefs across countries?

At time 0, the belief gap between agent B and agent A is predicted to be either $q-(1-p)$ or $q'-(1-p)$, depending on the report sent by the media. In the first case, the belief gap becomes

$$Q - \frac{(1-p)^2}{(1-p)^2 + p^2}$$

at time 1, while in the second case it becomes

$$Q' - \frac{(1-p)^2}{(1-p)^2 + p^2}.$$

Belief convergence occurs, if the belief gap between agent B and agent A decreases, i.e.

$$(6) \qquad q-(1-p) > Q - \frac{(1-p)^2}{(1-p)^2 + p^2}$$

or

$$(7) \qquad q'-(1-p) > Q' - \frac{(1-p)^2}{(1-p)^2 + p^2}.$$

[15] At the onset of transition it was often stated that the failure of communism proofed the dominance of the market system. In this historical context an anti-market expert indeed seems virtually impossible.

Inequality (6) and (7) always hold for given assumptions, so that the model predicts convergence, irrespective whether the expert is pro market and transmits a biased signal or whether an honest signal is discounted by the agents.

The path of transition towards a market economy entails the timing of reform policies and the depth of reform, i.e. the scope of privatization. The scope of privatization thereby refers to the decision as to what services (e.g. schooling, health, pensions, utilities) should be provided by markets or the state; a question not only contested in transition countries, but in experienced market economies, too (World Bank 2005). The timing of reform determines the sequencing of measures and accordingly determines the distribution of the cost of reform over time. The model raises the possibility that an expert with access to mass media transmitted a biased report about the desirability of markets, inducing exaggerated competition beliefs. As a result, both, the scope of privatization as well as the timing of reform might have extended beyond the level chosen by a correctly informed electorate.

Conclusion

The introduction of market institutions in former centrally planned economies is expected to foster development and bring about convergence toward the living conditions of older market economies. Transition countries are expected to converge to and in fact do converge to older market economies with respect to a large number of measures of economic activity (World Bank 2002). The current paper shows that not only living conditions, but also beliefs converge. While belief convergence seems natural given the general convergence tendency, it is in fact surprising that initial levels of positive competition beliefs are much higher in transition countries than in experienced market economies.

At the onset of transition there was basically no experience with market competition in these countries. Expert advice was crucial for individual perceptions on the desirability of markets and influenced support for market oriented reforms. It is argued that overly positive beliefs in competition contributed to the possibility of introducing widespread economic reforms in transition countries. It is shown that in transition countries more positive competition beliefs increased demand for fundamental changes in the economic system. Once the basic market institutions were installed, individuals made actual experiences in a competitive market and accordingly updated their beliefs. Average beliefs in transition and established market economies converge. A learning model shows that such belief dynamics can result from rational belief formation, if an outside expert supplies biased information about the desirability of markets to people in transition countries.

Guriev and Zhuravskaya (2009) identify a happiness gap in transition countries. They explain a large part of this gap with decreasing supply of public goods, economic instability and the deterioration of human capital. However, decreasing happiness levels might also arise from disappointed expectations with respect to the results of transition. Köszegi and Rabin (2006) introduce a model where expectations serve as a reference point for reference dependent utility. If outcomes are less positive than expected, utility levels are low. In this sense it is conceivable that a part of the decrease in happiness levels during transition could result from disappointment on the merits of the market and competition, which did not match high expectations, i.e. positive competition beliefs. This interpretation is hypothetical and it is up to future research to substantiate these claims.

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Wyplosz, C., 1993, "After the Honeymoon: On the Economics and the Politics of Economic Transformation", European Economic Review 37, 379–386.

Appendix A

Table A1: Number of observations and survey year

	Wave 2		*Wave 3*		*Wave 4*		
Country	Freq.	Years	Freq.	Years	Freq.	Years	Total Freq.
Austria	1,431	1990	0	.	1,471	1999	2,902
Belarus	973	1990	1,902	1996	906	2000	3,781
Belgium	2,569	1990	0	.	1,865	1999	4,434
Bulgaria	970	1990	982	1997	919	1999	2,871
Canada	1,713	1990	0	.	1,913	2000	3,626
Chile	1,473	1990	992	1996	1,177	2000	3,642
Czech Republic	2,979	1991	1,102	1998	1,870	1999	5,951
Denmark	987	1990	0	.	987	1999	1,974
Estonia	960	1990	993	1996	950	1999	2,903
Finland	566	1990	968	1996	1,016	2000	2,550
France	970	1990	0	.	1,585	1999	2,555
Germany	3,276	1990	1,991	1997	1,928	1999	7,195
Hungary	914	1991	630	1998	932	1999	2,476
Iceland	687	1990	0	.	959	1999	1,646
Ireland	987	1990	0	.	977	1999	1,964
Italy	1,887	1990	0	.	1,905	1999	3,792
Japan	846	1990	958	1995	1,251	2000	3,055
Korea, Rep.	1,235	1990	1,239	1996	1,199	2001	3,673
Latvia	832	1990	1,177	1996	961	1999	2,970
Lithuania	932	1990	953	1997	924	1999	2,809
Mexico	1,472	1990	2,236	1996	1,383	2000	5,091
Netherlands	987	1990	0	.	992	1999	1,979
Norway	1,209	1990	1,120	1996	0	.	2,329
Poland	1,816	1990	1,035	1997	1,043	1999	3,894
Portugal	1,115	1990	0	.	961	1999	2,076
Romania	1,061	1993	1,182	1998	981	1999	3,224
Russia	1,739	1990	1,849	1995	2,263	1999	5,851
Slovakia	1,513	1991	1,052	1998	1,254	1999	3,819
Slovenia	914	1992	970	1995	982	1999	2,866
Spain	3,801	1990	1,156	1995	2,277	2000	7,234
Sweden	1,010	1990	1,003	1996	2,004	1999	4,017
Turkey	992	1990	1,859	1996	1,127	2001	3,978
United Kingdom	1,454	1990	0	.	968	1999	2,422
United States	1,752	1990	1,502	1995	1,199	1999	4,453
Total	48,022	1990	28,851	1996	43,129	1999	120,002

Table A2. Ordered least square estimations to gauge the quantitative relevance of estimates

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
competition						
age	0.001	-0.006	-0.008	-0.009	-0.008	-0.006
	(0.24)	(-1.37)	(-1.36)	(-1.39)	(-1.32)	(-0.95)
age_sqr	-0.000	0.000	0.000	0.000	0.000	0.000
	(-0.81)	(1.23)	(1.35)	(1.45)	(1.32)	(1.06)
female	-0.318***	-0.304***	-0.298***	-0.295***	-0.338***	-0.328***
	(-11.77)	(-11.13)	(-10.89)	(-12.09)	(-12.20)	(-11.05)
wave_3	-0.223+	-0.253+	-0.251+	-0.164	-0.173	-0.320**
	(-1.89)	(-1.84)	(-1.84)	(-1.47)	(-1.47)	(-3.10)
wave_4	-0.274**	-0.282**	-0.280**	-0.216**	-0.210*	-0.265**
	(-3.41)	(-3.09)	(-3.08)	(-2.88)	(-2.55)	(-3.31)
transition	0.329***	0.376***	0.373***	0.394***	0.422***	0.393***

	(4.50)	(5.29)	(5.29)	(6.08)	(6.66)	(6.34)
wave3_trans	-0.383*	-0.384*	-0.385*	-0.412*	-0.363+	-0.224
	(-2.39)	(-2.18)	(-2.20)	(-2.54)	(-1.87)	(-1.39)
wave4_trans	-0.424**	-0.412**	-0.409**	-0.448**	-0.443**	-0.348*
	(-3.12)	(-2.86)	(-2.84)	(-3.26)	(-2.93)	(-2.26)
inc_quint1		-0.290***	-0.277***	-0.270***	-0.220***	-0.247***
		(-5.88)	(-5.25)	(-5.71)	(-4.60)	(-4.75)
inc_quint2		-0.120***	-0.117***	-0.129***	-0.106***	-0.105**
		(-3.88)	(-3.72)	(-4.84)	(-3.83)	(-3.34)
inc_quint4		0.160***	0.160***	0.137***	0.096**	0.084*
		(5.44)	(5.51)	(5.46)	(3.13)	(2.36)
inc_quint5		0.445***	0.443***	0.413***	0.349***	0.345***
		(12.41)	(12.59)	(12.67)	(9.04)	(7.64)
stat_married			0.021	0.031	0.024	0.012
			(0.50)	(0.79)	(0.60)	(0.27)
stat_divorced			-0.027	-0.009	-0.016	-0.032
			(-0.58)	(-0.21)	(-0.35)	(-0.66)
stat_widowed			-0.057	-0.043	-0.042	-0.034
			(-1.08)	(-0.85)	(-0.79)	(-0.58)
jobstat_part				-0.121**	-0.110**	-0.143**
				(-3.05)	(-2.80)	(-3.51)
jobstat_self				0.151*	0.086	0.085+
				(2.72)	(1.39)	(1.72)
jobstat_retired				-0.056	-0.027	-0.053
				(-1.18)	(-0.59)	(-1.34)
jobstat_wife				-0.022	0.020	0.055
				(-0.35)	(0.42)	(1.35)
jobstat_student				0.103*	0.061	0.027
				(2.22)	(0.71)	(0.28)
jobstat_unemp				-0.305***	-0.284***	-0.322***
				(-5.94)	(-4.40)	(-5.13)
jobstat_other				-0.055	-0.003	-0.088
				(-0.73)	(-0.04)	(-0.86)
job_manager					0.481***	0.561***
					(10.48)	(12.30)
job_office					0.277***	0.267***
					(8.27)	(8.54)
job_farmer					-0.045	-0.053
					(-0.81)	(-1.11)
job_military					0.472***	0.449***
					(5.66)	(5.01)
job_never					0.135+	0.196**
					(2.02)	(2.87)
townsize_2						-0.028
						(-0.56)
townsize_3						0.133+
						(1.95)
townsize_4						0.028
						(0.49)
townsize_5						-0.006
						(-0.11)
townsize_6						0.103*
						(2.07)
townsize_7						0.053
						(1.09)
townsize_8						0.064
						(1.13)
_cons	8.133***	8.230***	8.245***	8.242***	8.098***	8.031***
	(71.76)	(65.78)	(61.73)	(58.20)	(56.90)	(57.70)
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	119765	103660	103444	100544	86305	71948

Notes: 1) OLS regression with *competition* as dependent variable. 2) *t*-statistics in parentheses.
3) Standard errors are robust to within country clustering. 4) $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A3. Logit estimations with macro controls on the full sample

	full sample	*full sample*	*full sample*	*full sample*	*full sample*
competition_bin10					
wave_3	-0.329*	-0.312*	-0.301*	-0.325+	-0.319*
	(-2.19)	(-2.13)	(-2.04)	(-1.69)	(-2.05)
wave_4	-0.187+	-0.153	-0.136	-0.107	-0.176
	(-1.70)	(-1.41)	(-1.20)	(-1.01)	(-1.45)
transition	0.548***	0.502***	0.554***	0.704***	0.537***
	(7.61)	(6.60)	(6.88)	(7.80)	(6.69)
wave3_trans	-0.198	-0.168	-0.271	-0.716**	-0.217
	(-0.85)	(-0.79)	(-1.07)	(-2.64)	(-0.82)
wave4_trans	-0.442*	-0.269	-0.422+	-0.990**	-0.377+
	(-2.05)	(-1.17)	(-1.81)	(-3.02)	(-1.68)
inflation	-0.001*				
	(-2.29)				
gdp_growth_wdi		-0.023			
		(-1.52)			
ln_pcgdp_wdi			-0.213		
			(-0.68)		
unemp_oecd				0.032	
				(1.11)	
gini_gross_swiid					-0.003
					(-0.17)
Personal characteristics	Yes	Yes	Yes	Yes	Yes
Income quintiles	Yes	Yes	Yes	Yes	Yes
Marriage status	Yes	Yes	Yes	Yes	Yes
Job-status	Yes	Yes	Yes	Yes	Yes
Job dummies	Yes	Yes	Yes	Yes	Yes
Townsize	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes
N	70319	70319	71948	49348	71207
pseudo R^2	0.048	0.048	0.048	0.057	0.049

Notes: 1) Logit regression with *competition_bin10* as dependent variable. 2) *t*-statistics in parentheses.
3) Standard errors are robust to within country clustering. 4) $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A4. Unrestricted model – OECD and full sample, reporting all coefficients

	OECD	*OECD*	*full sample*	*full sample*
competition_bin10				
wave_3	-0.228	-0.161	-0.228	-0.161
	(-1.35)	(-1.01)	(-1.35)	(-1.01)
wave_4	-0.214^{+}	-0.151	-0.214^{+}	-0.151
	(-1.91)	(-1.45)	(-1.91)	(-1.45)
transition	0.614**	0.475*	0.757***	0.585***
	(3.14)	(2.57)	(5.25)	(3.34)
wave3_trans	-0.695**	-0.781*	-0.473*	-0.456^{+}
	(-2.98)	(-2.49)	(-2.12)	(-1.85)
wave4_trans	-0.525*	-0.603**	-0.410*	-0.408*
	(-2.47)	(-2.69)	(-2.38)	(-2.16)
age	0.000	-0.004	0.000	-0.004
	(0.12)	(-0.77)	(0.12)	(-0.78)
trans_age	0.016*	0.017^{+}	0.008	0.009
	(2.06)	(1.67)	(1.20)	(0.93)
age_sqr	0.000*	0.000*	0.000*	0.000*
	(2.12)	(2.36)	(2.12)	(2.37)
trans_agesqr	-0.000***	-0.000**	-0.000***	-0.000*
	(-4.16)	(-2.87)	(-3.68)	(-2.49)
female	-0.258***	-0.227***	-0.258***	-0.227***
	(-7.53)	(-6.42)	(-7.56)	(-6.44)
trans_female	0.072	0.066	0.049	0.005
	(1.50)	(1.23)	(1.07)	(0.11)
inc_quint1	-0.074	-0.099	-0.074	-0.099
	(-0.78)	(-1.26)	(-0.78)	(-1.27)
trans_inc1	0.017	0.060	0.072	0.129
	(0.16)	(0.59)	(0.66)	(1.25)
inc_quint2	-0.041	-0.061	-0.041	-0.061
	(-0.64)	(-1.19)	(-0.64)	(-1.19)
trans_inc2	-0.072	-0.065	0.002	0.015
	(-0.95)	(-0.94)	(0.02)	(0.22)
inc_quint4	0.059	0.036	0.059	0.036
	(1.22)	(0.84)	(1.23)	(0.85)
trans_inc4	-0.053	-0.031	0.020	0.026
	(-0.77)	(-0.44)	(0.27)	(0.35)
inc_quint5	0.186**	0.146**	0.186**	0.146**
	(3.22)	(2.89)	(3.23)	(2.90)
trans_inc5	-0.061	-0.066	0.107	0.093
	(-0.60)	(-0.53)	(1.27)	(1.18)
stat_married		0.002		0.002
		(0.04)		(0.04)
trans_stat_married		0.035		0.037
		(0.72)		(0.66)
stat_divorced		0.030		0.030
		(0.51)		(0.51)
trans_stat_divorced		0.019		0.025
		(0.27)		(0.32)
stat_widowed		-0.001		-0.001
		(-0.01)		(-0.01)
trans_stat_widowed		0.022		-0.002
		(0.22)		(-0.03)
jobstat_part		-0.121**		-0.121**
		(-2.61)		(-2.62)
trans_jobstat_part		0.011		0.042
		(0.12)		(0.67)
jobstat_self		0.139*		0.139*
		(2.00)		(2.00)
trans_jobstat_self		-0.006		-0.032
		(-0.07)		(-0.32)
jobstat_retired		0.079		0.079
		(1.62)		(1.62)

trans_jobstat_retired		0.035		-0.024
		(0.51)		(-0.34)
jobstat_wife		0.062		0.062
		(1.32)		(1.32)
trans_jobstat_wife		0.146		0.166^{+}
		(1.47)		(1.92)
jobstat_student		-0.118		-0.118
		(-0.80)		(-0.80)
trans_jobstat_student		-0.167		0.183
		(-0.47)		(0.85)
jobstat_unemp		-0.101		-0.101
		(-1.38)		(-1.39)
trans_jobstat_unemp		0.327**		0.220*
		(3.20)		(2.06)
jobstat_other		0.036		0.036
		(0.25)		(0.26)
trans_jobstat_other		-0.126		-0.065
		(-0.59)		(-0.33)
job_manager		0.326***		0.326***
		(6.62)		(6.64)
trans_job_manager		0.154		0.088
		(1.34)		(0.82)
job_office		-0.018		-0.018
		(-0.39)		(-0.39)
trans_job_office		0.131		0.185*
		(1.49)		(2.51)
job_farmer		0.017		0.017
		(0.27)		(0.27)
trans_job_farmer		-0.357***		-0.300**
		(-3.70)		(-3.22)
job_military		0.237^{+}		0.237^{+}
		(1.84)		(1.85)
trans_job_military		0.161		0.154
		(0.88)		(0.92)
job_never		-0.063		-0.063
		(-0.89)		(-0.89)
trans_job_never		0.016		-0.017
		(0.12)		(-0.17)
_cons	-1.140***	-1.052***	-1.140***	-1.052***
	(-15.16)	(-10.59)	(-15.21)	(-10.62)
Country Dummies	Yes	Yes	Yes	Yes
N	83439	69849	103660	86305
pseudo R^2	0.051	0.056	0.050	0.053

Notes: 1) Logit regression with *competition_bin10* as dependent variable. 2) *t*-statistics in parentheses.
3) Standard errors are robust to within country clustering. 4) $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A5: Robustness check: different cut-offs, OECD and full sample

	OECD	*OECD*	*OECD*	*full sample*	*full sample*	*full sample*
	comp_bin9	comp_bin8	comp_bin7	comp_bin9	comp_bin8	comp_bin7
wave_3	-0.205	-0.204^{+}	-0.180*	-0.204	-0.202^{+}	-0.180*
	(-1.60)	(-1.84)	(-2.09)	(-1.59)	(-1.83)	(-2.09)
wave_4	-0.158*	-0.232***	-0.209***	-0.153*	-0.229***	-0.207***
	(-2.30)	(-3.82)	(-3.54)	(-2.25)	(-3.78)	(-3.51)
transition	0.573***	0.445***	0.272**	0.519***	0.435***	0.298***
	(7.04)	(4.90)	(3.06)	(7.59)	(6.75)	(5.26)
wave3_trans	-0.611**	-0.363^{+}	-0.185	-0.450*	-0.341*	-0.252*
	(-2.90)	(-1.68)	(-0.83)	(-2.52)	(-2.27)	(-1.98)
wave4_trans	-0.482**	-0.349^{+}	-0.340*	-0.419**	-0.316*	-0.338**
	(-2.75)	(-1.92)	(-2.08)	(-3.17)	(-2.47)	(-3.01)
age	-0.004	-0.003	-0.008	-0.008	-0.006	-0.009^{+}
	(-0.81)	(-0.64)	(-1.35)	(-1.58)	(-1.25)	(-1.75)

age_sqr	0.000	0.000	0.000	0.000^{+}	0.000	0.000^{+}
	(1.32)	(1.00)	(1.57)	(1.65)	(1.30)	(1.70)
female	-0.275***	-0.286***	-0.265***	-0.281***	-0.287***	-0.270***
	(-10.57)	(-11.11)	(-10.32)	(-12.11)	(-12.34)	(-11.99)
inc_quint1	-0.153**	-0.180***	-0.252***	-0.122**	-0.166***	-0.235***
	(-3.25)	(-4.43)	(-7.32)	(-2.92)	(-4.75)	(-7.90)
inc_quint2	-0.099**	-0.117***	-0.133***	-0.080**	-0.099***	-0.120***
	(-3.09)	(-4.69)	(-5.55)	(-2.88)	(-4.65)	(-5.79)
inc_quint4	0.074**	0.122***	0.119***	0.089***	0.132***	0.133***
	(3.02)	(5.12)	(5.21)	(3.62)	(6.02)	(6.21)
inc_quint5	0.267***	0.366***	0.407***	0.307***	0.384***	0.422***
	(9.39)	(10.92)	(11.67)	(10.83)	(14.15)	(14.02)
stat_married	0.065^{+}	0.059	0.041	0.062*	0.049	0.039
	(1.82)	(1.33)	(0.88)	(2.10)	(1.30)	(0.97)
stat_divorced	0.040	0.024	-0.043	0.053	0.046	-0.015
	(0.82)	(0.46)	(-0.86)	(1.29)	(1.05)	(-0.34)
stat_widowed	0.049	0.039	-0.005	0.024	0.012	-0.027
	(1.05)	(0.77)	(-0.10)	(0.57)	(0.26)	(-0.57)
jobstat_part	-0.153***	-0.143***	-0.136**	-0.137***	-0.124***	-0.104*
	(-3.37)	(-3.53)	(-2.92)	(-3.41)	(-3.62)	(-2.45)
jobstat_self	0.182***	0.116**	0.071	0.172***	0.120**	0.077^{+}
	(3.46)	(2.69)	(1.60)	(3.43)	(3.03)	(1.89)
jobstat_retired	0.005	-0.009	-0.028	-0.029	-0.040	-0.052
	(0.13)	(-0.21)	(-0.65)	(-0.84)	(-1.08)	(-1.36)
jobstat_wife	0.013	0.012	-0.018	0.026	0.029	0.000
	(0.34)	(0.32)	(-0.34)	(0.71)	(0.81)	(0.01)
jobstat_student	-0.024	0.019	0.068	-0.008	0.044	0.110*
	(-0.41)	(0.45)	(1.32)	(-0.17)	(1.18)	(2.27)
jobstat_unemp	-0.165***	-0.198***	-0.248***	-0.151**	-0.176***	-0.229***
	(-3.83)	(-5.78)	(-5.51)	(-3.22)	(-4.78)	(-5.67)
jobstat_other	0.048	-0.074	-0.035	0.002	-0.085	-0.070
	(0.76)	(-1.14)	(-0.57)	(0.03)	(-1.58)	(-1.22)
_cons	-0.102	0.801***	1.493***	0.018	0.899***	1.547***
	(-0.93)	(6.87)	(11.49)	(0.16)	(8.00)	(13.23)
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	80528	80528	80528	100544	100544	100544
pseudo R^2	0.050	0.047	0.046	0.048	0.045	0.044

Notes: 1) Logit regression with *competition_bin9, _bin8 _bin7* as dependent variable.
2) *t*-statistics in parentheses. 3) Standard errors are robust to within country clustering.
4) $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A6: Descriptive Statistic of *need_change_bin1* by country (only surveyed in wave 2)

	need_change	*need_change_bin1*	***Freq.***
country	1989-1993	1989-1993	
Belgium	3.425	0.143	2,405
Bulgaria	4.655	0.732	952
Canada	4.216	0.392	1,682
Chile	4.300	0.545	1,465
Czech Republic	4.492	0.603	2,968
Denmark	4.347	0.528	992
Estonia	4.689	0.740	971
Finland	3.695	0.204	558
France	3.615	0.207	932
Germany	3.497	0.383	3,299
Hungary	4.591	0.687	935
Iceland	3.946	0.272	690
Ireland	4.175	0.383	988
Italy	4.111	0.360	1,897
Japan	3.247	0.078	797
Korea, Rep.	3.990	0.340	1,235
Latvia	4.811	0.831	864
Lithuania	4.412	0.522	944
Mexico	4.319	0.537	1,458
Netherlands	2.918	0.064	939
Norway	3.812	0.281	1,229
Poland	4.406	0.628	1,822
Portugal	4.009	0.346	1,043
Romania	4.340	0.500	1,051
Russia	4.725	0.769	1,901
Slovakia	4.363	0.510	1,513
Slovenia	4.391	0.513	896
Spain	4.203	0.416	3,559
Sweden	4.197	0.455	973
United Kingdom	4.058	0.336	1,413
United States	4.087	0.320	1,752
Total	4.124	0.443	44,123

Table A7: The Effect of competition belief (dummies) on support for economic reform

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
need_change						
comp_bin9	-0.427***	-0.395***	-0.320***	-0.272***	-0.280***	-0.262***
	(-10.77)	(-10.88)	(-6.15)	(-4.86)	(-4.62)	(-3.74)
comp_bin8	-0.604***	-0.574***	-0.460***	-0.424***	-0.422***	-0.409***
	(-17.49)	(-11.16)	(-6.61)	(-5.67)	(-5.26)	(-4.53)
comp_bin7	-0.601***	-0.544***	-0.378***	-0.320**	-0.310**	-0.293*
	(-11.84)	(-7.32)	(-3.92)	(-3.28)	(-2.98)	(-2.56)
comp_bin6	-0.435***	-0.395***	-0.182	-0.145	-0.138	-0.122
	(-6.24)	(-4.13)	(-1.38)	(-1.04)	(-0.95)	(-0.74)
comp_bin5	-0.467***	-0.418***	-0.183	-0.183	-0.181	-0.182
	(-5.48)	(-3.58)	(-1.16)	(-1.10)	(-1.04)	(-0.89)
comp_bin4	-0.385***	-0.325**	-0.055	-0.007	-0.004	0.008
	(-4.01)	(-2.59)	(-0.37)	(-0.05)	(-0.03)	(0.05)
comp_bin3	-0.266*	-0.215	0.010	0.035	0.039	0.033
	(-2.32)	(-1.48)	(0.06)	(0.19)	(0.20)	(0.16)

comp_bin2	-0.130	-0.086	0.134	0.202	0.212	0.245
	(-1.23)	(-0.66)	(0.91)	(1.37)	(1.39)	(1.38)
comp_bin1	0.381***	0.415***	0.660***	0.593***	0.615***	0.659***
	(3.73)	(3.54)	(5.61)	(5.04)	(5.17)	(4.79)
transition		5.120***	5.442***	5.459***	5.468***	5.439***
		(47.32)	(52.87)	(50.69)	(47.42)	(45.27)
comp_trans9			-0.143*	-0.175*	-0.172*	-0.177+
			(-2.09)	(-2.48)	(-2.24)	(-1.89)
comp_trans8			-0.255***	-0.306***	-0.309***	-0.287**
			(-3.58)	(-3.79)	(-3.58)	(-2.99)
comp_trans7			-0.460***	-0.520***	-0.539***	-0.506***
			(-3.84)	(-4.21)	(-4.16)	(-3.54)
comp_trans6			-0.643***	-0.678***	-0.695***	-0.693***
			(-3.92)	(-3.95)	(-3.90)	(-3.33)
comp_trans5			-0.818***	-0.802***	-0.810***	-0.721**
			(-3.75)	(-3.49)	(-3.40)	(-2.59)
comp_trans4			-1.013***	-1.043***	-1.071***	-0.938***
			(-4.99)	(-4.89)	(-4.88)	(-3.94)
comp_trans3			-0.775***	-0.774***	-0.784**	-0.581*
			(-3.43)	(-3.31)	(-3.24)	(-2.14)
comp_trans2			-0.810***	-0.820***	-0.796***	-0.676**
			(-3.69)	(-3.94)	(-3.71)	(-3.19)
comp_trans1			-0.833***	-0.768***	-0.800***	-0.851***
			(-4.55)	(-4.16)	(-4.36)	(-4.02)
cut1						
_cons	-3.893***	-4.214***	-4.095***	-4.007***	-4.029***	-4.059***
	(-8.79)	(-17.73)	(-16.30)	(-15.01)	(-14.47)	(-12.79)
cut2						
_cons	-2.333***	-2.526***	-2.404***	-2.318***	-2.333***	-2.363***
	(-9.01)	(-18.62)	(-16.43)	(-13.20)	(-13.10)	(-11.36)
cut3						
_cons	-1.325***	-1.424***	-1.301***	-1.244***	-1.284***	-1.348***
	(-9.90)	(-15.61)	(-14.42)	(-10.70)	(-10.78)	(-8.55)
cut4						
_cons	0.557***	0.600***	0.726***	0.782***	0.766***	0.739***
	(6.71)	(7.00)	(8.19)	(6.68)	(5.99)	(4.37)
Personal characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Income quintiles	No	No	No	Yes	Yes	Yes
Marriage status	No	No	No	No	Yes	Yes
Job-status	No	No	No	No	Yes	Yes
Job dummies	No	No	No	No	No	Yes
Townsize	No	No	No	No	No	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	42475	42475	42475	37148	35737	28461
pseudo R^2	0.085	0.124	0.126	0.131	0.136	0.137

Notes: 1) Ordered logit regression with *need_change* as dependent variable. 2) *t*-statistics in parentheses. 3) Standard errors are robust to within country clustering. 4) $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. 5) comp_bin indicate competition dummies, comp_trans the interaction of transition with respective competition dummy.

Appendix B

Item B1: Model specifications of extended models

(1) $$B^{*}_{ict} = \alpha + \beta T_c + \gamma_t W_t + \delta_t (T_c * W_t) + \lambda' X_{ict} + \varepsilon_{ict}$$

(2) $$\Pr(B_{ict} = 1) = \Pr(B^{*}_{ict} > 0)$$

The augmented model with macro-variables:

(3) $$B^{*}_{ict} = \alpha + \beta T_c + \gamma_t W_t + \delta_t (T_c * W_t) + \omega' M_{ct} + \lambda' X_{ict} + \varepsilon_{ict}$$

(4) $$\Pr(B_{ict} = 1) = \Pr(B^{*}_{ict} > 0)$$

The augmented model with country fixed effects:

(5) $$B^{*}_{ict} = \alpha + \beta T_c + \gamma_t W_t + \delta_t (T_c * W_t) + \phi_c + \lambda' X_{ict} + \varepsilon_{ict}$$

(6) $$\Pr(B_{ict} = 1) = \Pr(B^{*}_{ict} > 0)$$

Item B2: Original wording of item on fairness of the market place

Question:

Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can chose any number in between. Agreement: Hard work brings success.

Responses:

1 'In the long run, hard work usually brings a better life'

…

10 'Hard work doesn't generally bring success - it's more a matter of luck and connections'

Item B3: Original wording of item for attitude toward reform: *need_change_bin1*

Question:

I am going to read out some statements about the government and the economy. For each one, could you tell me how much you agree or disagree?

This country's economic system needs fundamental changes

Responses:

5 'Agree completely'

4 'Agree somewhat'

3 'Neither agree nor disagree'

2 'Disagree somewhat'

1 'Disagree completely'

Appendix C

Figure C1a: average levels of competition beliefs over time in transition countries

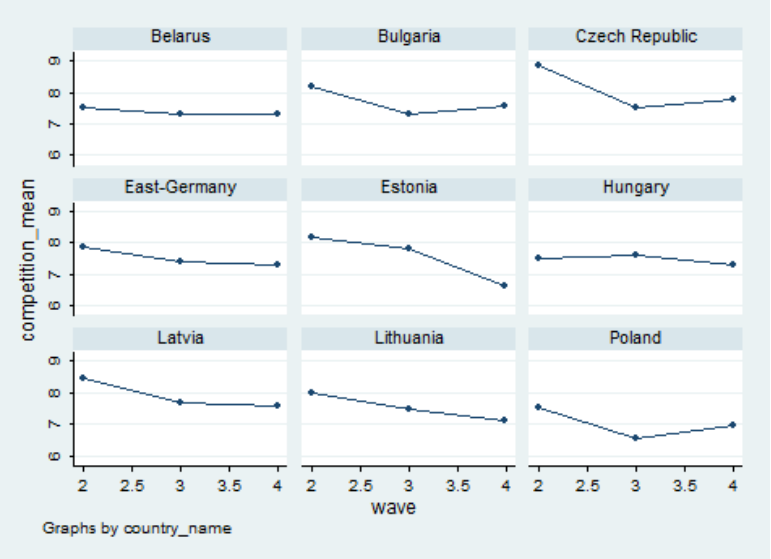


Figure C1b: average levels of competition beliefs over time in transition countries

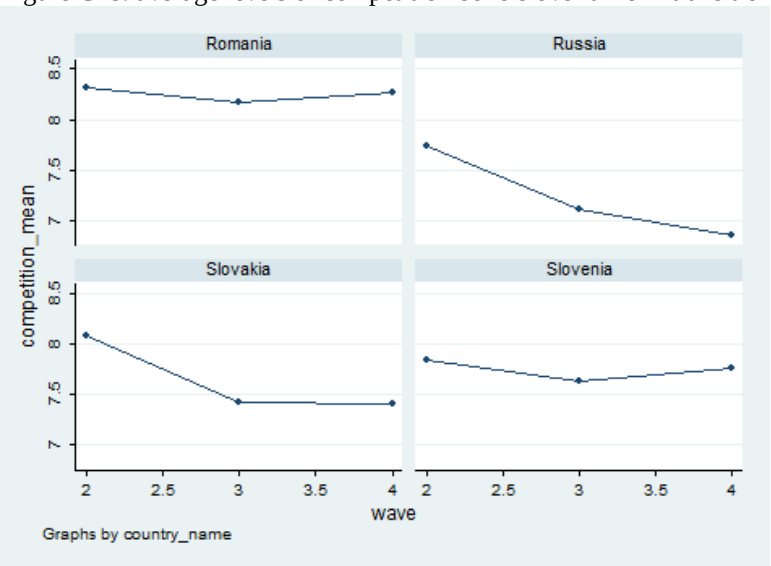


Figure C2a: average levels of competition beliefs over time in OECD countries

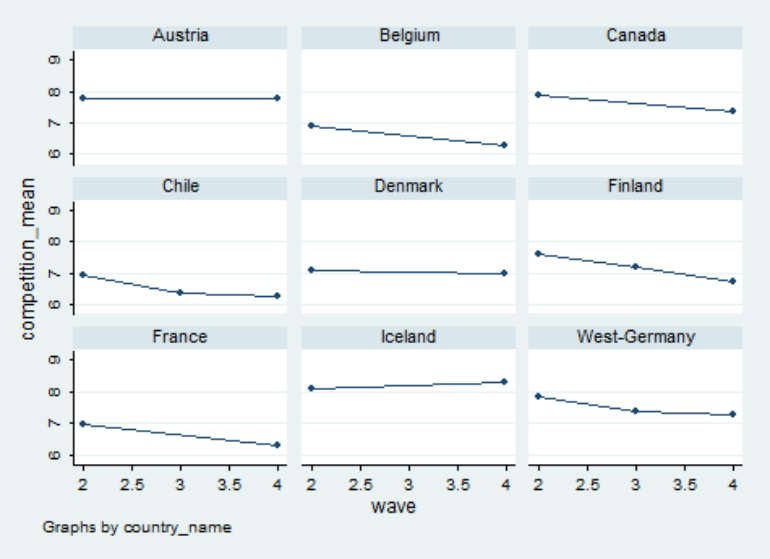


Figure C2b: average levels of competition beliefs in OECD countries

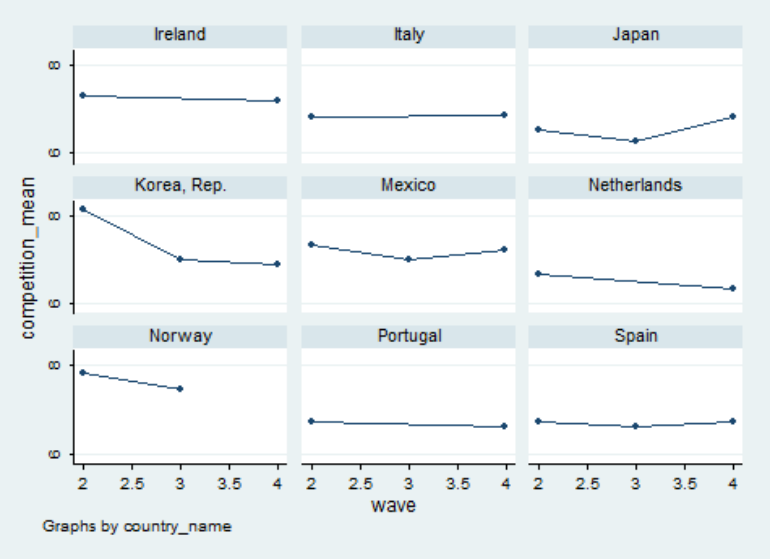
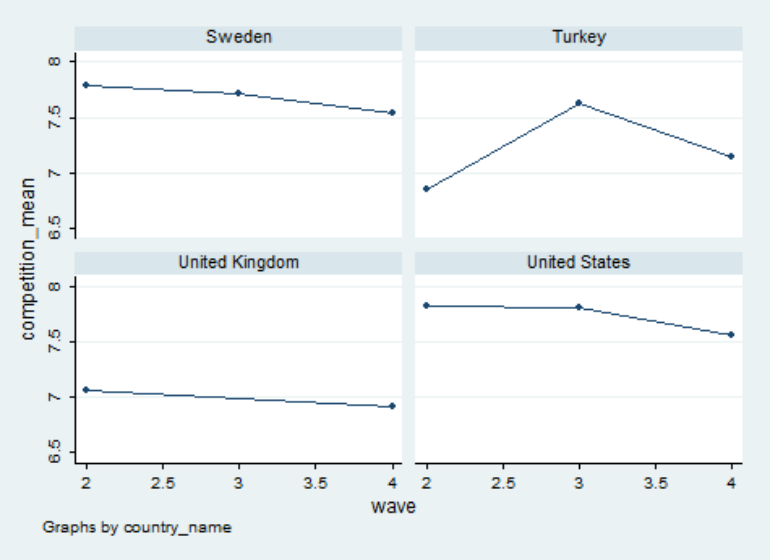


Figure C2c: average levels of competition beliefs in OECD countries



Preferences for Redistribution around the World

1. Introduction

Government social spending greatly varies across countries. For OECD countries in 2007, social expenditure as percentage of GDP was as high as 27.3% in Sweden and 25.2% in Germany, and as low as 7.2% in Mexico and 7.5% in South-Korea. Why are countries so different with respect to the resources they use for social expenditure? There are certainly a multitude of economic, historic, legal and cultural factors determining the extent of state social spending (e.g. Becker 1983, Persson and Tabellini 1999, Shelton 2007). Still, in a democracy, the preferences of the electorate should also have an important effect on redistributive policies of the state. Assuming that the extent of state social spending is to a large degree driven by the electorate's preferences, a better understanding of the determinants of these preferences is necessary in order to understand cross country differences.

The present analysis shows that income, education, social class and beliefs in self-determination have a significant effect on preferences for income equality throughout the world. Preferences for income inequality, which are interpreted as preferences for redistribution, are analyzed for OECD and non-OECD countries separately, overall comprising more than 350,000 observations from 100 countries. The contribution of the present paper to the empirical literature on determinants for individual preferences for redistribution is twofold. On the one hand, the analysis includes data for more countries over a longer period of time than used in this type of analysis so far. On the other hand this study tries to simultaneously test various determinants of redistributive preferences, which so far have been mainly tested individually. If each hypothesis being tested individually finds empirical support, this implies that each individual analysis suffers from missing variables bias. Also substitutive and complementary relations between the determinants are unaccounted for. It is the rule rather than the exception of empirical work with pre-existing data that not all relevant questions can be answered simultaneously with a given data set. This is also true for the present study. While it succeeds in grouping hypotheses that so far have been answered separately, there are a number of important determinants identified in the literature, which can not be considered, since no information is provided in the data used. Respondents' race, the ethnic composition of the home community and past and future expected social mobility are examples of determinants that have been proven important for preferences of redistribution but cannot be accounted for with the data used in this paper.

The next section will discuss theoretical and empirical contributions to the literature on what determines preferences for redistribution. In section 3 some general methodological

issues will be discussed. Also the dependent variables most commonly used in the literature as proxy for preferences for redistribution will be reviewed. Section 4 will introduce the data set and present the empirical strategy of the present analysis. In section 5 the results for the sample of OECD countries will be presented and discussed. Also a wide array of robustness checks will be considered. In section 6 the result for the non-OECD sample will be presented. Finally, section 7 wraps up the results and concludes.

2. Determinants for Preferences for Redistribution

The present section discusses the theoretical arguments and empirical analysis of preferences for redistribution in the literature. I will refer heavily to Corneo (2004) and Alesina and Giuliano (2009) who provide a selective and thorough review of some of the most important contributions. For analytical clearness, I follow Corneo (2004) in categorizing the determinants for redistribution in three groups. The first group comprises the individual and socio-economic characteristics that shape material self-interest. The second group refers to interdependent preferences which result in distributional externalities. The third and final group captures beliefs about a fair or just world and individual responsibility.[1]

An individual is expected to vote for redistribution if her disposable income increases with redistribution. This logic is implied in the models of Romer (1975), Robert (1977) and Meltzer and Richard (1981). Since the distance between median and mean income rises with rising inequality, the median voter's preferred level of redistribution rises with income inequality.[2] Net gains from redistribution are inversely related to income. In empirical work either absolute or relative individual or household income is used to account for this effect. For example Corneo (2001), Corneo and Grüner (2002) and Isaksson and Lindskog (2009) use relative individual income, while Alesina and Giuliano (2009), Fong (2001), Luttmer (2001) and Murthi and Tiongson (2009) use absolute income levels or categories of income levels in their respective empirical specifications. Ravallion and Lokshin (2000) use the real value of household consumption as a proxy for current economic welfare.

Not only current income but also lifetime income and thus the possibility of upward and downward social mobility will be considered by a rational actor when determining the individually optimal level of income redistribution. Hirschman and Rothschild (1973), Piketty (1995) and Benbeou and Ok (2001) analyze how prospects, observations or experience of

[1] Note that fairness can also be understood as a variety of interdependent preferences.
[2] This reasoning implies that more unequal societies should experience higher levels of redistribution. The empirical test and explanations why the hypothesis is mostly rejected have produced a large body of research.

income mobility might affect the individual desire for redistribution.[3] A proxy for life-time income is educational attainment which, to the best of my knowledge, is included in basically every empirical analysis of preferences for redistribution. Actual mobility experience is mostly measured by comparison of the respondents own standard of living, level of income, educational attainment or occupational status with those of her parents (Corneo 2001, Corneo und Grüner 2002, Alesina and Giuliano 2009). Alesina and LaFerrara (2005) use panel income data to construct a measure of expected future income. They also use a survey item from the General Social Survey (GSS) which states that "… people like me […] have a good chance of improving our standard of living…". This question simultaneously refers to the respondents prospects of social mobility and the functioning and fairness of the economic system. Both, social mobility and beliefs about the allocation mechanism in society are important determinants and are often treated jointly. In the present paper both issues will be treated separately. The beliefs about the fairness of the market system will be discussed below.

There are a number of socio-economic characteristics like labour-market status and marriage status that influence the material payoffs associated with income redistribution. Often these characteristics are only included to control for possible missing variable bias. However, since this paper wants to provide a comprehensive view on the determinants of preferences for income equality, they are included in the discussion.

The unemployed are excluded from the labour market and in general earn no or little market income. They are expected to receive higher transfers if more income is redistributed and accordingly prefer more redistribution. In addition, the experience of unemployment could constitute a major trauma. Alesina and Giuliano (2009) argue that negative life events might induce more risk-aversion or reduce optimistic beliefs about upward mobility and empirically show a statistical positive and significant effect of such adverse life events on the willingness to redistribute.

Aspects of material self-interest extend beyond direct pecuniary effects and include insurance effects. Among others, Varian (1980) and Sinn (1995) show that income redistribution in the welfare state constitutes social insurance against income risks. For the self-employed, it is often argued that they are less risk averse and thus demand less insurance against income shocks as it is provided by a redistributive system of taxes and transfers (Guillaud 2008, Alesian and LaFerrara 2005). Accordingly, the self-employed should prefer

[3] The categorization of social mobility is contested; e.g. Corneo (2001) and Corneo and Grüner (2002) take social mobility and related perceptions on the fairness of the marketplace together as effects of public values as opposed to material self-interest.

less redistribution. Corneo (2004) cautions that the interpretation of self-employment as a proxy for low risk-aversion is very ad-hoc. Ceteris paribus the demand for insurance against income risks could also be higher since the self-employed experience higher income volatility.

Marriage is the foundation for the family, which traditionally used to be the fundamental insurance provider in case of sickness or unemployment. As such the family constitutes a basic insurance mechanism. The insurance effect of marriage is discussed in Hess (2004). Accordingly, a married individual should have a lower demand for social insurance as compared to a single individual, since marriage provides some form of insurance against labour market risks. Individuals living in marriage should exhibit lower preferences for redistribution.

The insurance argument also applies for religion. Religious communities provide solace and often even material compensation in the case of adverse life events. While the insurance effect of religion might vary with denomination, the central hypothesis is that religious individuals of all denominations have a substitute for social insurance and accordingly demand less of it (Clarke and Lelkes 2005, Deheja et al. 2007). The inverse relation between religiosity and intensity of preferences for social insurance is empirically substantiated by Scheve and Stasavage (2006).

The aforementioned characteristics influence an individual's material well-being, not only in a pecuniary sense, but also in the sense of providing optimal levels of insurance. However, Fong et al. (2005) show that individual motives for income redistribution can not be fully explained by selfishly rational determinants alone. Instead they propose that "strong reciprocity"[4] is the reason why people support the welfare state[5]. Since strong reciprocity is an unfamiliar concept, I will proceed to disentangle the concept into interdependent preferences and beliefs about fairness and individual responsibility.

Corneo (2004) identifies two channels for interdependencies between actors for externalities to arise: status concerns and altruism. In a matching model where an agent's individual income determines his marriage prospects, Corneo and Grüner (2000) derive the social rivalry effect: even individuals that would profit from income redistribution may oppose it, because income redistribution would also improve the income position of poorer individuals, thereby increasing the competition in the marriage market and reducing the chance of a good match. Corneo (2001) and Corneo and Grüner (2002) use individual

[4] „Strong reciprocity is a propensity to share and cooperate with others similarly disposed, even at personal cost, and a willingness to punish those who violate cooperative and other social norms, even when punishing is personally costly and cannot be expected to entail net personal gains in the future" (Fong et al. 2005, p. 285).
[5] On reciprocity see Sobel (2005).

occupational prestige scores they match to income groups to show the empirical relevance of the social rivalry effect.

A related issue to social rivalry is social identity. Shayo (2009) constructs a model of social identity and shows the existence of an equilibrium in which members of the lower class identify with the nation as a whole and vote for less redistribution as compared to the optimal level given their class interest alone. He also provides empirical support for the social identity hypothesis using the same data as the present study. Klor and Shayo (2010) experimentally study the effect of social identity on redistributive preferences and show that identification with a group can counteract individual pecuniary interest in the selection of redistributive schemes.[6]

Luttmer (2001) analyses the effect of group loyalty on the taste for redistribution. What he terms group loyalty could also be framed as racial identity and accordingly be related to the just discussed effects of social identity. In Luttmer's approach group membership is defined by race. He empirically shows that racial group loyalty increases the demand for redistribution as the share of welfare recipients from the in-group in the community rises. At the same time there is an exposure effect: welfare support decreases with a rising number of recipients in the community. Luttmer's contribution is part of a larger literature that analyzes the effects of ethnic and racial diversity on economic performance in general (see Alesina and La Ferrara 2005) and on redistributive preferences especially. The literature on ethnic diversity and support for redistribution is reviewed by Stichnoth and Van der Straeten (forthcoming). While for the U.S. there is some agreement on a pure race effect, the effect of ethnical heterogeneity and fractionalization for attitudes toward redistribution is contested. Most studies that rely on observational data only provide weak or no evidence for an effect of ethnic heterogeneity on preferences for redistribution. These studies report correlations and statistical associations but can not determine causation. Dahlberg et al. (2011) use a nation-wide policy intervention that produced an exogenous variation in immigrant shares in communities across Sweden, to identify the effect of ethnic heterogeneity on natives' preferences for redistribution. They find, "that an increasing share of immigrants leads to lower preferred levels of social benefits. This negative effect on preferences for redistribution is especially pronounced for individuals in the upper tail of the income and wealth distributions." (p. 29). Fong and Luttmer (2009) provide experimental evidence for the effect of racial group loyalty on charitable giving, using a large representative sample of the American population. They find no effect of race per se, but strong effects for those

[6] A related, but theoretically not substantiated argument is presented by Solt (2011). He states that nationalism is consciously used to accommodate the poor with larger income differences.

respondents that identify with their respective group and conclude that "subjective racial identification is a stronger predictor of racial bias in giving than the objective race of the respondent" (p. 85). The same authors use a similar experiment to disentangle the effects of fairness and race (Fong and Luttmer 2011). They show that fairness considerations of donors depend on perceptions of moral worthiness of recipients, i.e. "beliefs about whether or not the poor are individually responsible for their own bad outcomes, […] whether the poor are lazy or industrious" (p. 372). No direct effect of race or racial composition is found. However, the experiment shows that worthiness perceptions are racially biased.

In the following influence of perceptions of moral worth of welfare recipients, individual responsibility in shaping life events and beliefs about the fairness of societal allocation mechanisms will be considered. Bénabou and Tirole (2006) and Alesina and Angeletos (2005) show how beliefs in the fairness of the allocation system in a society (beliefs in a "just society") can account for large differences in redistributive policies. Fairness beliefs refer to the perceived relation between effort and compensation, income or success. A system is considered just or fair, if individual responsibility, i.e. individual effort and not luck or family background determine outcomes. Naturally, these beliefs also influence the expectations about own future income and prospective social mobility. Fong (2006) uses quantitative sensitivity analysis to disentangle whether the effect of beliefs in a fair society on redistributive preferences works through the expectation of own upward mobility or through the belief in moral worthiness of respondents. She finds the latter explanation to be more robust. Most empirical work using survey data tries to account for these beliefs. Corneo (2001) and Corneo and Grüner (2002) include an item in their analysis asking respondents for the importance of hard work and a wealthy family background for getting ahead in life. Variables capturing beliefs about the importance of family background, luck and hard work for social upward mobility are also included by Alesina and La Ferrara (2005) and Fong (2001).[7] These results have been substantiated by a series of economic experiments. Fong (2007) shows that altruistic giving is conditioned on the apparent worthiness of the recipients. Durante and Putterman (2007) find that the support for redistribution is lower if the initial distribution is determined by the performance in a task. In an experiment performed by Krawczyk (2010), redistributive transfers dropped by 20% if task performance and not luck determined outcomes. However, if outcomes were determined by luck, the distribution of winning probabilities of the underlying lottery did not have an effect on levels of redistribution. Rey-Biel et al. (2011) confirm the importance of fairness beliefs and in

[7] For a discussion see Corneo (2004).

addition show that the priors of these fairness beliefs differ across countries. If the income generating process is unknown to experimental subjects, in the U.S. bad outcomes are attributed to a lack of effort while in Spain bad luck is perceived as the decisive reason.

Bavetta et al. (2007) and Patti and Navarra (2010) embrace the importance of fairness beliefs for the support for redistribution. However, they argue that fairness beliefs themselves are endogenous and to a large degree depend on the perception of individual freedom and autonomy. If individuals belief that they are in control of their life, they also tend to accept the outcomes as fair and accordingly will have weaker preferences for redistribution.

3. Methodological issues and hypothesis formulation

In the present subsection some methodological issues will be discussed. Firstly, some general problems with survey data will be pointed out. Secondly, the dependent variable used to analyze preferences for redistribution will be discussed and compared to other measures used in the literature.

While survey data is increasingly being used by economists, there is still some concern regarding data quality and the reliability of self-reported outcomes and attitudes. As pointed out by Bertrand and Mullainathan (2001) there are framing-, priming- and interviewer bias, to name just the most likely sources of bias, prevalent in individual survey data. However, it is unlikely that similar framing and priming biases pertain across different surveys. For empirical findings based on survey data it is thus desirable to reproduce results across different data sets using similar items. The dependent variable, in the present case the implicit or explicit stated preference for redistribution, is in general operationalized differently across data sets. While this might seem like an obstacle to comparability, the reproduction of qualitative results with only similar but not the same dependent variables in fact corroborate the underlying relation: respective results are obviously robust to the formulation of the dependent variable.

In Table 1 there is an overview over the items used in the research on preferences for redistribution. While not exhaustive, the most important measures are presented. The first two items simply ask about the government reducing income differences. Question (1) from the International Social Survey Program (ISSP) does neither provide a reference level nor an implied trade-off. In contrast, the wording of the European Social Survey (ESS) item (2) seems to suggest that the actual income differences present in the surveyed country should be reduced. The ESS measure also lacks an implied trade-off. Item three from the General Social Survey (GSS) also refers to the reduction of income differences by the government. The

wording suggest that people should refer to the actual given income difference in their country. The question also details how such a redistributive policy could be financed. Question (5) from the GSS asks about the appropriate extend of welfare spending with reference to the given situation. The item (4) from the GSS and item (7) from the World Values Survey (WVS) do not refer directly to redistributive policies and pecuniary transfers. Instead they evaluate the appropriate relation between the state and its citizens and the degree of self-responsibility. Both items obviously refer to the given situation.

Table 1. Overview: survey items used to measure preferences for redistribution

Data	Item	used in publications
(1) ISSP	"It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes." (1) "Strongly agree" to (5) "Strongly disagree"	Corneo (2001); Corneo and Grüner (2002); Guillaud (2008);
(2) ESS	"The government should take measures to reduce differences in income levels?". (1)"Agree strongly" to (5) "Disagree strongly"	Rueda and Pontusson (2010); Luttmer and Singhal (2010); Jaeger (2008); Senik et al. (2009); Lübker (2007)
(3) GSS	"Some people think that the government in Washington ought to reduce the income differences between the rich and the poor, perhaps by raising the taxes of wealthy families or by giving income assistance to the poor. Others think that the government should not concern itself with reducing this income difference between the rich and the poor". (1) "Should" to (7) "Should not"	Alesina and La Ferrara (2005); Keely and Tan 2008; Guiso et al. (2006).
(4) GSS	"Some people think that the government in Washington should do everything to improve the standard of living of all poor Americans (they are at point 1 on this card). Other people think it is not the government's responsibility, and that each person should take care of himself (they are at point 5). Where are you placing yourself in this scale?"	Alesina and Giuliano (2009) [They claim that Alesina and La Ferrara 2005 and many others use the same item, but in fact do not]
(5) GSS	"Are we spending too much, too little, or about the right amount on welfare?"	Luttmer (2001); Alesina and La Ferrara (2005); Keely and Tan (2008)
(6) WVS	"Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between. Sentences: 'Incomes should be made more equal' (1) vs. 'We need larger income differences as incentives' (10)."	Murthi and Tiongson (2008)[8]; Shayo (2009); Klor and Shayo (2010)
(7) WVS	"Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between. 'People should take more	Alesina and Giuliano (2009)

[8] Murthi and Tiongson (2008) provide an overview over data sets used to analyze the socialist legacy with respect to redistributive preferences in member countries of the former Soviet Union.

	responsibility to provide for themselves' (1) vs. 'The government should take more responsibility to ensure that everyone is provided for' (10)."	

Note: ISSP (International Social Survey Program); GSS (General Social Survey Program); ESS (European Social Survey); WVS (World Values Survey)

Finally, item (6) from the WVS is the main dependent variable in the present paper. The question clearly refers to the status quo and does not only ask whether income differences should be reduced, but also allows for the possibility of larger income differences. However, with referring to "larger income differences as incentives" the question does not only elicit preferences about the desirable income distribution, but also includes beliefs about the efficiency cost of redistribution. It could be argued that by mentioning incentives in the context of larger income differences, respondents are somewhat primed on the efficiency costs of redistribution, probably biasing downward the reported desire for more equal incomes. The question does not mention policies or associated costs. It is thus more a question on the preference for income equality than for income redistribution. However, since redistribution is not the only, but certainly the most common policy of achieving more equal income distributions, the items is taken as an indirect measure for preferences of redistribution.

3.2. Hypothesis Formulation

We will now formulate the central hypotheses and introduce the respective variables.[9] As discussed in section 2 there are a number of individual characteristics which have a direct influence on individual self-interest in a narrow sense. Individuals with higher incomes will have to contribute more and accordingly prefer less redistribution.

H1: With rising income, support for redistribution diminishes.

There are five income dummies indicating an individual's gross household income (*inc_quint1- inc_quint5*). The third quintile will be used as reference category. Accordingly, lower quintiles (1, 2) should have a positive, higher quintiles (4, 5) a negative effect on the support for redistribution.

Educational levels are a proxy for lifetime income with more education increasing lifetime income.

H2: With higher educational achievements, the support for redistribution diminishes.

There are five dummies indicating educational achievement (*edu_no-edu_uni*). No education is the reference category. Accordingly, every educational level should have a negative effect on the preference for redistribution.

[9] Summary statistics are presented in Table 4 below. Variable coding is detailed in Appedix II, Table B1.

Insurance effects are also considered to reflect self-interested behaviour. The self-employed should have lower risk-aversion and accordingly demand less social insurance against income shocks.

H3: The self-employed have weaker preferences for redistribution.

There are a number of job-status dummies. The reference category is full employment. The dummy indicating self-employment is called *jobstat_self* and should have a negative effect on the preference for redistribution.

Marriage was also considered as a basic insurance scheme. A married person should demand lower levels of social insurance and accordingly less redistribution.

H4: The married have weaker preferences for redistribution.

The marriage status is indicated by four dummies (*stat_*) with being single being the reference category. The dummy for being married, *stat_married*, should have a negative effect on the support for redistribution.

The insurance argument is also applied in the context of religion. Religious people have some substitute for social insurance and accordingly should demand less of it.

H5: Being religious diminishes the support for redistribution.

Religiosity is measured using the frequency of church attendance. Three dummies are coded with never visiting religious services as base category. The dummies *religion_some* and *religion_reg* indicate some and regular attendance to religious services.

We now proceed to the augmented hypotheses using additional focus variables.

The social rivalry effect states that individuals might oppose redistribution because it might jeopardize their position in the social hierarchy. This effect is captured by including self-reported social class of the respondents.

H6: The higher the social class, the lower the preference for redistribution.

Social class is captured by four dummies with the working class (*class_working*) as reference category. Belonging to the middle and upper class (*class_middle, class_upper*) should have a negative effect, belonging to the lower class (*class_lower*) a positive effect on the preferences for redistribution. Social class is a coarse measure to capture the social rivalry effect. Some problems will be discussed in the results section (section 5).

The argument based on social identity states that nationalism (i.e. a strong/stronger identification with the nation) might moderate class interest.

H7: Higher levels of national pride come with low preferences for redistribution.

The dummy *proud_bin1* indicates respondents which are very proud to be citizens of their respective nation. Accordingly, *proud_bin1* should have a negative effect on the preference for redistribution.

It has already been discussed that the categorization of the variable measuring an individual's belief about the relation of work and success is ambivalent. The variable could indicate fairness considerations, but it could also proxy beliefs about individual possibilities for upward mobility.

H8a: The belief that hard work will result in success will diminish the support for redistribution.

H8b: The belief that success is a matter of luck will increase the support for redistribution.

The original ten point Likert-scaled variable is recoded in three dummies. The reference category is made up of all individuals indicating non-extreme values (3 to 8). The dummy *success_work* indicates the belief that effort results in success and accordingly should have a negative effect. The opposite belief, captured by the dummy *success_luck* should have a positive effect on the preference for redistribution.

The belief in the moral worth of recipients and the fairness of the social distribution system is captured by a question about the reasons for being poor.

H9a: Respondents who believe that being poor is caused by laziness have weaker preferences for redistribution.

H9b: Respondents who believe that being poor is caused by an unfair society have stronger preferences for redistribution.

The dummy *poor_lazy* indicates the belief that the poor are poor because of laziness. On the other hand *poor_unfair* indicates that the reason for poverty is an unfair society.

A related item asks about the control in life. While this question is not related to poverty, it evaluates whether respondents feel responsible for their actions and associated outcomes. It seem very likely that respondents project their self-evaluation on other, i.e. if they feel responsible for their outcomes, they also belief that others are responsible too.

H10a: Respondents who feel in control of their life have a lower preference for redistribution.

H10b: Respondents who do not feel in control of their life have a higher preference for redistribution.

The original ten-point Likert-scaled variable is recoded. There is one dummy indicating the feeling of control (*control_yes)* and another one indicating the absence of this feeling

(control_no). Following hypothesis H10, *control_no* is expected to have a positive and *control_yes* a negative effect on the preferences for redistribution.

If altruism is directed toward the poor, the altruistic individual will experience an increase in utility if the position of the poor is improved. Since redistribution raises the income of the poor, an altruistic individual should have a higher probability to redistribute.

H11: More altruistic individuals have stronger preferences for redistribution.

There is no direct measure for altruism. Accordingly, the dummy *child_unselfish* is used to proxy for altruism. The dummy *child_unselfish* indicates that the respondent finds unselfishness and important child quality. This dummy should have a positive effect on the preference for redistribution.

Finally, gender differences in redistributive preferences should be considered. Empirical research consistently shows gender differences in risk aversion and altruism (Andreoni and Versterlund 2001, Gneezy et al. 2009). Women are generally found to be more risk averse and more altruistic. Higher risk aversion increases the demand for social insurance.

H12: *Women have stronger preferences for redistribution.*

Gender is measured with the dummy *female*, indicating the respondent to be a woman.

4. Data and Empirical Strategy

4.1. Data

The individual level data is taken from the European Value Studies and the World Values Survey, together referred to as WVS. The World Values Survey Network provides a harmonized file of European – and World Values Surveys (WVS 2009), extending over five survey waves carried out around 1981, 1990, 1995, 2000 and 2005.[10] In addition, the European Values Survey 2008 provides a sixth round of survey data (EVS 2010).[11] In each wave the survey has been conducted over a period of about three years. The individual level data from the WVS is augmented with macroeconomic data from the OECD (OECD 2008) and the World Bank Development Indicators (WDI, WDI 2011). The Gini coefficient of household adult-equivalent gross- and net income is included to characterize the income distribution. Income distribution data is taken from the Standardized World Income Inequality Data set (SWIID, SWIID 2009).[12] All macro data is matched to each observation according to

[10] For details see http://www.worldvaluessurvey.org/.
[11] More information on the EVS at http://www.europeanvaluesstudy.eu/.
[12] The SWIID and details are provided at http://www.siuc.edu/~fsolt/swiid/swiid.html

the country and year the survey was conducted. In general the year is the time point of reference.[13]

I analyze the statistical relation between the preferences for redistribution and a host of individual and country specific characteristics. The preference for redistribution is elicited with the following survey item:

> "Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 10 means you agree completely with the statement on the left; 1 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between. Sentences:
> 'Incomes should be made more equal' (10) vs. 'We need larger income differences as incentives' (1)."

The original variable was recoded so that higher values indicate a stronger preference for equal incomes, i.e. a stronger preference for redistribution. The dependent variable is accordingly named *equal_income*. The distribution of responses is reported in Table 2

Table 2. Distribution of dependent variable *equal_income*

equal_income	*Freq.*	*Percent*	*Cum.*
incentives to individual effort 1	16,237	10.01	10.01
2	9,460	5.83	15.83
3	22,495	13.86	29.7
4	18,539	11.42	41.12
5	14,455	8.91	50.03
6	21,394	13.18	63.21
7	12,942	7.98	71.19
8	14,950	9.21	80.4
9	10,563	6.51	86.91
incomes more equal 10	21,246	13.09	100
Total	162,281	100	

Note: Sample of 34 OECD countries

In a first step the sample is restricted to the 34 OECD countries. Table 3 shows the mean of *equal_income* by country and wave. The data set contains a total of 200,996 observations for the OECD. Valid information for the dependent variable *equal_income* is available for 162,281 observations. The mean value of *equal_income* over all observations is 5.51 and thus basically the median value (5.5). A possible interpretation is that on average people are happy with the distribution of incomes in the OECD. This interpretation does not consider substantial variation across countries. The mean preference for redistribution is strongest in Israel (1. rank) and Switzerland (2. rank) and has the lowest levels in Denmark

[13] Every survey wave was conducted over a period of about three years (for details see Appendix I, Table A1). For ease of exposition, we just present country-wave tables.

(34. rank) and Poland (33. rank). However, a lot of country averages are close to the median value.

Table 3. Mean of *equal-income* by country and wave

country \ wave	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	*Total*
Australia	.	5.405	.	5.330	.	5.375
Austria	5.565	.	6.439	.	7.519	6.514
Belgium	5.080	.	5.496	.	5.388	5.285
Canada	4.217	.	5.664	5.352	.	5.118
Chile	4.999	5.795	6.979	6.217	.	5.933
Czech Republic	4.126	4.797	5.513	.	6.338	5.060
Denmark	4.482	.	.	.	4.094	4.250
Estonia	3.228	5.481	4.119	.	5.147	4.581
Finland	4.384	6.842	6.398	6.020	6.384	6.158
France	5.736	.	6.149	5.957	5.778	5.922
Germany	4.251	6.053	.	6.604	7.097	5.755
Greece	.	.	.	.	6.546	6.546
Hungary	5.186	7.199	.	.	6.379	6.180
Iceland	5.295	.	5.342	.	5.629	5.422
Ireland	4.614	.	4.888	.	5.849	5.105
Israel	.	.	7.229	.	.	7.229
Italy	5.084	.	4.981	5.063	5.125	5.059
Japan	5.308	5.548	5.282	4.853	.	5.241
South-Korea	5.853	4.326	4.450	4.413	.	4.765
Luxembourg	.	.	4.174	.	4.681	4.467
Mexico	5.019	5.131	5.869	4.888	.	5.209
Netherlands	4.913	.	4.821	5.370	5.237	5.105
New Zealand	.	5.653	.	5.541	.	5.604
Norway	4.984	5.731	.	5.926	5.329	5.474
Poland	3.289	4.289	4.911	4.219	5.681	4.407
Portugal	6.691	.	.	.	6.017	6.310
Slovakia	4.691	5.428	.	.	5.868	5.309
Slovenia	5.256	6.516	6.947	6.312	7.349	6.537
Spain	5.956	5.437	5.937	5.347	6.038	5.817
Sweden	4.535	5.080	.	4.913	6.186	5.207
Switzerland	.	6.159	.	7.367	6.322	6.622
Turkey	6.419	5.928	6.903	6.028	6.545	6.515
UK	4.551	5.937	5.394	5.585	5.562	5.360
USA	4.263	5.565	5.282	4.815	.	4.942
Total	4.892	5.584	5.758	5.557	5.950	5.516

The true model determining the preferences for redistribution is unknown. To assure robustness of results a wide set of economic and socio-economic variables will be considered in the estimation procedure. The descriptive statistics of all individual-level dependent and explanatory variables are depicted in Table 4.[14] In the OECD sample 52% of respondents are female. Mean age is 44 years, 62% of the respondents are married (*stat_married*) and 74%

[14] The coding of variables is detailed in Appendix II, Table B1.

have one or more children living in their household (*child_present*). For each set of dummy variables the respective reference category is marked with an "X" in column 7 of Table 4.

Table 4. Descriptive Statistics of dependent and explanatory micro variables, OECD sample

Variable	*Obs.*	*Mean*	*Std. Dev.*	*Min*	*Max*	
equal_income	162281	5.516	2.850	1	10	
equal_income_bin2	162281	0.196	0.397	0	1	
equal_income_bin9	162281	0.158	0.365	0	1	
female	200996	0.529	0.499	0	1	
age	196980	44.287	17.303	14	108	
age_sqr	196980	2260.769	1671.357	196	11664	
edu_no	134886	0.063	0.243	0	1	X
edu_prime	134886	0.243	0.429	0	1	
edu_somesec	134886	0.233	0.423	0	1	
edu_sec	134886	0.300	0.458	0	1	
edu_uni	134886	0.161	0.367	0	1	
stat_married	199087	0.623	0.485	0	1	X
stat_divorced	199087	0.068	0.252	0	1	
stat_widowed	199087	0.075	0.264	0	1	
stat_single	199087	0.233	0.423	0	1	
jobstat_full	195215	0.411	0.492	0	1	X
jobstat_part	195215	0.076	0.265	0	1	
jobstat_self	195215	0.068	0.252	0	1	
jobstat_retired	195215	0.184	0.387	0	1	
jobstat_wife	195215	0.127	0.333	0	1	
jobstat_student	195215	0.060	0.237	0	1	
jobstat_unemp	195215	0.056	0.230	0	1	
jobstat_other	195215	0.019	0.135	0	1	
inc_quint1	167295	0.197	0.398	0	1	
inc_quint2	167295	0.284	0.451	0	1	
inc_quint3	167295	0.239	0.427	0	1	X
inc_quint4	167295	0.176	0.381	0	1	
inc_quint5	167295	0.103	0.304	0	1	
religion_never	192830	0.4025255	0.490408	0	1	X
religion_some	192830	0.2682881	0.4430696	0	1	
religion_reg	192830	0.3291863	0.469919	0	1	
class_upper	124261	0.189	0.392	0	1	
class_middle	124261	0.355	0.479	0	1	
class_working	124261	0.317	0.465	0	1	X
class_lower	124261	0.139	0.346	0	1	
proud_bin1	187352	0.491	0.500	0	1	
trust	192212	0.350	0.477	0	1	
child_unselfish	196035	0.279	0.448	0	1	
poor_lazy	126313	0.276	0.447	0	1	

poor_unfair	126313	0.402	0.490	0	1
control_no	191298	0.046	0.210	0	1
control_yes	191298	0.240	0.427	0	1
success_work	92474	0.278	0.448	0	1
success_luck	92474	0.098	0.298	0	1
child_present	185577	0.744	0.436	0	1
politic_left_bin2	163905	0.0763979	0.2656345	0	1
politic_right_bin9	163905	0.0818096	0.2740752	0	1

To control for macro-conditions the log of per-capita GDP (*ln_pcgdp_wdi*) and a number of other macro variables are included in the estimations. Further macro variables are the unemployment rate (*unemp_wdi*), the growth rate of GDP (*gdp_growth_wdi*), the relation of imports and exports to GDP (*trade_wdi*), the stock of foreign direct investments in million U.S. dollars (*fdi_wdi*), the Gini of equivalent household gross incomes (*gini_gross*), the gross-gini ten years ago (g*ini_gross_lag10*) and social expenditures as a fraction of GDP ten years ago (*socexp_gdp_lag10*). Summary statistics are presented in Table 5.

Table 5. Summary statistics of macro controls, OECD sample

Variable	*Obs.*	*Mean*	*Std. Dev.*	*Min*	*Max*
ln_pcgdp_wdi	200060	9.977	0.466	8.720	11.200
unemp_wdi	168259	7.434	3.737	0.600	22.700
gdp_growth_wdi	198154	1.901	3.941	-14.574	10.653
trade_wdi	199052	76.710	43.873	16.864	326.764
fdi_wdi (Mio$)	188301	-6876.2	26346.6	-113165.0	68497.2
gini_gross	185365	42.183	6.161	25.757	59.423
gini_gross_lag10	182439	41.199	6.288	25.381	55.736
socexp_gdp_lag10	104669	16.758	7.565	0.000	31.588

Note: Data from OECD (2008), SWIID (2009) and WDI (2011)

4.2. Empirical Strategy

The preference for redistribution is measured with an item from a survey questionnaire. Since the dependent variable is a ten-point Likert-scaled variable, an ordinal logit model will be employed. No exogenous source of variation can be identified, so that estimates show statistical associations rather than causality. A causal effect of most analyzed determinants has been shown under experimental conditions as discussed in section 2. In the present study, the individual and joint statistical effect of respective determinants should be corroborated, using different and bigger data samples as has been the case so far.

In a first step, a set of six models, stepwise including more control variables, is estimated. Luttmer and Singhal (2011) empirically show that culture has an important effect on preferences for redistribution. To account for unobserved cultural determinants, country

fixed effects are included in all regressions. In addition, time induced variation is controlled for with the inclusion of year fixed effects. The basic model is shown in equation (1).

$$
\begin{aligned}
(1) \qquad & R^{*}_{ict} = \lambda' X_{ict} + \gamma_c C_c + \delta_t T_c + \varepsilon_{ict} \\
& R_{ict} = 1 \qquad \text{if} \qquad R^{*}_{ict} \leq \alpha_1 \\
& R_{ict} = 2 \qquad \text{if} \quad \alpha_1 < R^{*}_{ict} \leq \alpha_2 \\
& \quad \vdots \\
& R_{ict} = 10 \qquad \text{if} \quad \alpha_9 < R^{*}_{ict}
\end{aligned}
$$

The preference for redistribution R_{ict} of individual *i* in country *c* at time *t* is explained by a set of economic and socioeconomic control variables X_{ict} and country and time fixed effects *C* and *T*. In addition to country fixed effects, robust standard errors correcting for clustering at the country level are included (Moulton 1990). This correction augments standard errors so that the p-values for the estimates can be considered conservative.

In the first model (M1) X_{ict} only consists of respondent's sex, age and age squared. The second model (M2) includes information on educational achievements. Model 3 (M3) adds information on gross household income. In model four (M4) the respondents labour market status and marriage status are included. Since information on educational achievement is missing for a large number of cases, education is excluded in the specification of M4. The next model, M5 again includes education in addition to labour market- and marriage status. Model M6 finally adds dummies for the frequency of attendance to religious services. These six models together make up the basic configuration. It includes all variables that were hypothesised to influence narrowly defined material self-interest.

In the next step the basic configuration is augmented with the focus variables, one at a time. Accordingly, model M1 to M6 will be rerun, estimating in turn the social rivalry effect, the social identity hypothesis, the influence of altruism, the effect of beliefs about the fairness of the distribution system, of beliefs about the moral worth of the poor and about the degree of self-control in life. Finally, all hypotheses will be tested jointly. To this end, model M1, M4 and M6 will each be estimated including all focus variables and subsets thereof.

To check for robustness, the three just outlines estimation steps will be repeated including additional micro- and macro controls. Additional micro controls are political orientation and the information whether children are present in the household. Respective macro controls are the log of per-capita GDP, the unemployment rate, the growth rate, the stock of foreign direct investment, the fraction of trade to GDP, the Gini of gross household incomes, the Gini of gross incomes ten years ago and social expenditure as a fraction of GDP

ten years ago. This comprises the analysis of the OECD sample which constitutes the main contribution of this paper. The analysis will then be replicated on the sample of available non-OECD countries.

A note on the use of language: results are derived using ordered logit models. These results are correctly interpreted in a probabilistic manner. Also, no exogenous variation is present that would allow a causal interpretation of results. Still the verbal discussion of results will not always correctly express this interpretation, but instead describe the effect of an independent variable on a dependent variable. When done so, it is strictly for stylistic reasons. Readers should always be aware that results present statistical, probabilistic associations.

5. Results for the OECD sample

In this section the results for the OECD sample are presented. The estimations for the six models in the basic configuration are shown in Table 6. These results will be used to consider the hypotheses H1 to H5 which are based on the assumption of agents motivated by narrowly defined self-interest.

In line with hypothesis H1, respondents with higher (lower) incomes have a lower (higher) probability to support redistribution and vice versa. Educational achievements also have the expected effects as formulated in H2. Higher educational achievements significantly reduce the probability of strong preferences for redistribution. Regarding hypothesis H3 on

Table 6. Basic: Ordered logit estimations of Model M1 – M6

	M1	*M2*	*M3*	*M4*	*M5*	***M6***
equal_income						
age	-0.002	-0.001	0.007*	0.015***	0.013***	0.013***
	(-0.94)	(-0.33)	(2.44)	(5.17)	(4.35)	(4.28)
age_sqr	0.000*	0.000	-0.000**	-0.000***	-0.000***	-0.000***
	(2.35)	(0.35)	(-2.80)	(-5.44)	(-4.94)	(-4.85)
female	0.189***	0.149***	0.136***	0.150***	0.137***	0.148***
	(8.54)	(5.56)	(5.13)	(6.60)	(5.70)	(6.34)
edu_prime		-0.171***	-0.137***		-0.147***	-0.141***
		(-4.76)	(-3.68)		(-4.06)	(-3.31)
edu_somesec		-0.399***	-0.304***		-0.316***	-0.314***
		(-6.33)	(-4.37)		(-4.80)	(-4.44)
edu_sec		-0.484***	-0.329***		-0.352***	-0.351***
		(-6.51)	(-4.23)		(-4.85)	(-4.57)
edu_uni		-0.683***	-0.448***		-0.458***	-0.455***
		(-7.56)	(-4.61)		(-4.99)	(-4.76)
inc_quint1			0.304***	0.337***	0.260***	0.260***
			(8.90)	(5.69)	(7.23)	(6.97)
inc_quint2			0.159***	0.198***	0.136***	0.132***
			(6.16)	(6.43)	(6.08)	(5.82)
inc_quint4			-0.163***	-0.162***	-0.159***	-0.157***
			(-7.24)	(-7.19)	(-6.61)	(-6.46)
inc_quint5			-0.411***	-0.475***	-0.407***	-0.412***

			(-8.03)	(-9.27)	(-7.89)	(-7.76)
stat_married				-0.061*	-0.058*	-0.060*
				(-2.28)	(-2.49)	(-2.56)
stat_divorced				-0.063*	-0.050+	-0.058*
				(-2.55)	(-1.84)	(-2.09)
stat_widowed				-0.032	-0.045	-0.045
				(-0.84)	(-1.08)	(-1.10)
jobstat_part				0.059*	0.032	0.028
				(2.06)	(1.26)	(1.17)
jobstat_self				-0.217***	-0.255***	-0.252***
				(-4.62)	(-4.85)	(-4.85)
jobstat_retired				0.104*	0.051+	0.049
				(2.46)	(1.66)	(1.53)
jobstat_wife				0.042	-0.060	-0.057
				(1.10)	(-1.45)	(-1.40)
jobstat_student				-0.017	-0.018	-0.012
				(-0.49)	(-0.46)	(-0.30)
jobstat_unemp				0.222***	0.116**	0.106**
				(3.53)	(2.99)	(2.70)
jobstat_other				0.144*	0.047	0.038
				(2.29)	(0.95)	(0.73)
religion_some						-0.085***
						(-4.29)
religion_reg						-0.050+
						(-1.84)
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	162002	119838	101444	133313	97514	94779

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Note: constants for each cut-off not reported.

self-employment, it is noted that less risk adverse individuals demand less social insurance against income shocks. If the self-employed are less risk averse, and their lower risk aversion is not overcompensated by higher income volatility, self-employment should reduce the probability to opt for high levels of redistribution. This is confirmed by the estimation results for *jobstat_self*. In H4 it is hypothesised that marriage might be a substitute for social insurance provided by redistributive schemes. Results indicate at significance levels of 5% that marriage reduces the likelihood of respondents to support redistribution. Membership in a religious community could also function as a substitute for social insurance. As formulated in hypothesis H5, more religious individuals should demand less redistribution. This is in part confirmed by the results. Individuals who attend religious services have lower probabilities to support redistribution. However, while the coefficient for some attendance is highly significant, the coefficient for regular attendance is only weakly significant.

Next, we will turn our attention to the focus variables. The basic configuration is augmented with the focus variables, one at a time, and model M1-M6 are re-estimated. The coefficients obtained for the respective focus variable and the sample size for each estimation are presented in Table 7 to 9. As can be seen from Table 7 estimation results indicate the presence of the social rivalry effect (H6). After controlling for income, an individual's social

class still has significant explanatory power. Being member of a higher class significantly reduces the probability of having strong preferences for redistribution. The insignificant coefficients for membership in the lowest class in model M3, M5 and M6 are in line with the social rivalry effect, if one assumes that the status differential between the lower class and the working class is sufficiently small compared to the status differentials between the working class and middle and higher class, respectively. However, there are some caveats to this interpretation of social class. While income is controlled for, social class is certainly highly correlated with a large number of other, unobserved individual characteristics of material wealth. The effect of social class might rather measure the effect of pecuniary self-interest associated with different forms of unobserved wealth than considerations of social status. Corneo (2001) and Corneo and Grüner (2002), use international occupational prestige scores to capture individuals' social position and derive the social rivalry effect. This approach can not be replicated here, since detailed information about respondents' occupation is not available.

Table 7 also depicts the coefficients for nationalism. As formulated in hypothesis H7 on social identity, individuals with a stronger feeling toward their nation should have weaker preferences for redistribution. As can be seen from the results, being very proud of your nation in fact significantly reduces the probability of strong redistributive preferences.

Table 7. Focus Variables: social rivalry effect and social identity

	M1	*M2*	*M3*	*M4*	*M5*	*M6*
class_upper	-0.633***	-0.572***	-0.457***	-0.443***	-0.453***	-0.456***
	(-13.00)	(-11.04)	(-7.58)	(-8.89)	(-7.43)	(-7.45)
class_middle	-0.280***	-0.252***	-0.223***	-0.224***	-0.227***	-0.226***
	(-8.09)	(-6.57)	(-5.51)	(-6.42)	(-5.60)	(-5.35)
class_lower	0.234***	0.130+	0.095	0.179**	0.080	0.103
	(4.29)	(1.83)	(1.34)	(3.14)	(1.06)	(1.32)
N	103440	69274	60553	86923	57210	54807
proud_bin1	-0.104***	-0.125***	-0.136***	-0.136***	-0.144***	-0.141***
	(-4.26)	(-4.51)	(-4.73)	(-5.60)	(-4.69)	(-4.51)
N	150880	110768	94197	124600	90405	88460

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

The next table (Table 8) depicts the coefficients for the variables associated with the fairness of the allocation system, moral worthiness of the poor and individual control and responsibility. First note that there are relatively few observations for the variable that measures the belief in the relation between hard work and success, i.e. the fairness of the distributive system (*success_work, success_work*). As can be seen from the estimated coefficients, individuals who think that hard work brings success, i.e. the system is fair (*success_work*), have a lower probability to demand redistribution. This is stated in

hypothesis H8a. In contrast, the belief that the system is unfair, i.e. success is determined by luck (*success_luck*), does not increase the probability of strong preferences for redistribution. Accordingly, hypothesis H8b is not supported.

Table 8. Focus Variables: just world beliefs, moral worth and self-control

	M1	*M2*	*M3*	*M4*	*M5*	***M6***
success_work	-0.234***	-0.152*	-0.152*	-0.229***	-0.146+	-0.151+
	(-4.82)	(-2.05)	(-2.06)	(-4.65)	(-1.85)	(-1.94)
success_luck	0.095	0.081	0.005	0.016	0.023	0.019
	(1.15)	(0.72)	(0.05)	(0.19)	(0.19)	(0.16)
N	90884	50519	44329	75491	41016	40296
poor_lazy	-0.154***	-0.191***	-0.163***	-0.133***	-0.157***	-0.158***
	(-6.10)	(-6.19)	(-5.02)	(-5.07)	(-4.60)	(-4.54)
poor_unfair	0.338***	0.361***	0.366***	0.306***	0.354***	0.356***
	(10.03)	(10.13)	(10.28)	(9.63)	(10.23)	(10.32)
N	114044	74349	61228	91975	58122	57388
control_no	0.325***	0.251***	0.214***	0.244***	0.201***	0.201**
	(4.34)	(3.52)	(3.38)	(3.50)	(3.34)	(3.18)
control_yes	-0.166***	-0.155***	-0.145**	-0.161***	-0.152**	-0.158***
	(-4.75)	(-3.91)	(-3.13)	(-4.03)	(-3.17)	(-3.44)
N	154332	113238	95686	127891	92905	91834

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

An associated variable considers the moral worth of the poor. Are people poor because they where lazy or does their poverty result from an unfair society? As can be seen in Table 8, the belief that poverty results from laziness (*poor_lazy*) has a strongly significant, negative effect on the support for redistribution. In contrast to the result for the belief in a just allocation system (*success_luck*), the belief that poverty results from an unfair society (*poor_unfair*), increases the probability for strong preferences for redistribution. Accordingly, hypothesis H9a and H9b are both supported by the data.

The perceived level of individual autonomy and control is also considered as an important explanatory determinant for the support of redistribution. The results shown in Table 8 support this point of view. The belief that one has “free choice and control” over ones life, decreases the support for redistribution. In contrast, the feeling that own actions can not change outcomes, has a significant positive effect on the probability for strong preferences for redistribution. Hypotheses H10a and H10b are both corroborated. Fong (2001) arrives at similar conclusions and states “that the belief about the prevalence of poverty is usually significant whether or not we control for self- and exogenous-determination beliefs, but it is not as robust to sample size and specification changes as the self and exogenous-determination beliefs” (Fong 2001, p. 242). Following hypothesis H11, higher levels of altruism should be associated with stronger support for redistribution. The results for the respective variable (*child_unselfish*) presented in Table 9, do not allow a final conclusion. All

estimated coefficients are positive. However, for the two models with most observations (not controlling for education) results are insignificant. The appropriate answer to H11 remains ambiguous.

Table 9. Focus Variables: altruism

	M1	*M2*	*M3*	*M4*	*M5*	*M6*
child_unselfish	0.016	0.056*	0.068**	0.031	0.072**	0.072**
	(0.65)	(2.46)	(2.91)	(1.18)	(3.16)	(3.10)
N	157353	116334	98573	129380	94650	92633

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Do the estimation results considered in H1-H5 and discussed earlier, change if focus variables are included? Table 10 provides a quick overview. The symbol indicates the sign of a significant coefficient; a zero indicates an insignificant estimate. In column six the first symbol refers to some attendance of religious services, the second one to regular attendance. As can be seen, the results for income, education and self-employment are robust to the inclusion of any of the focus variables. Being married does not show a statistical significant effect on preferences for redistribution if social identity or moral worth of the poor is taken into account. The effect for some religious activity is also not robust to the inclusion of beliefs about moral worth (*poor_lazy* and *poor_unfair*).

Table 10. Result Overview (H1-H5)

	income	*education*	*self-employed*	*married*	*religious*
class_	-	-	-	-	-/-
proud_bin1	-	-	-	0	-/0
hard_work	-	-	-	-	-/0
poor_	-	-	-	0	0/0
control	-	-	-	-	-/0
child_unselfish	-	-	-	-	-/0

We now turn to the central part of the analysis. How do the focus variables perform in explaining the preferences for redistribution, if included jointly in the estimation equation? The biggest obstacle to this exercise is data availability: simultaneously including all focus variables and socio-economic controls dramatically reduces sample size. To see whether the estimated effects are driven by sample attrition, the three models, M1, M4 and M6 are used to estimate the cumulated effects of all focus variables. These configurations with six specifications each will be referred to as cumulated M1, cumulated M4 and cumulated M6. Model M1 only includes respondents' gender and age; M4 adds marriage status, job-status and income. Model M6 includes all socioeconomic controls used in the basic configuration. Since *hard_work (*i.e. *success_luck, success_work)*, the variable measuring the belief in the fairness of the allocation mechanism, is missing for a considerable number of observations,

M1, M4 and M6 with cumulated focus variables will be estimated with and without this variable. Since the sample size is bigger, we only present those results without *hard_work*. For M1 and M4 only the estimates of the focus variables will be depicted (Table 11 and 12), for M6 all estimated coefficients will be shown (Table 13). In the cumulated configurations, at first the dummies for social class are included. Then stepwise the variables for nationalism (*proud_bin1*), individual autonomy and control (*control_*), moral worth of the poor (*poor_*) and altruism (*child_unselfish*) are included. In addition to all these focus variables, a measure of individual *trust* is added in model (6). Trust might capture unobserved ethnical heterogeneity of the respondents social environment or her degree of reciprocity and the like and is only included as a robustness check.

As can be seen from inspection of Table 11 and Table 12, the estimates obtained for the focus variables are qualitatively very similar for cumulated M1 and M4. The social rivalry effect is present in all estimations; the social identity hypothesis is also accepted in Table 11 and 12. The feeling of autonomy and control decreases the support for redistribution, the lack thereof increases support. If the poor are viewed as morally unworthy and responsible for their poverty due to laziness, the probability to have strong preferences for redistribution decreases. If on the other hand, an unfair society is seen as the reason for poverty, stronger support for redistribution becomes more likely. Finally, the degree of altruism as measured by (the admittedly imperfect measure) *child-unselfish* does not have an effect on the preferences for redistribution. The effect of altruism as formulated in hypothesis H11 was ambivalent already in the last step. Given the present negative results, hypothesis H11 has to be rejected. However, I do not want to conclude that altruism has no effect on preferences for redistribution, but rather posit that the measure used is not a good proxy for individual altruism.

Table 11. Ordered Logit estimation: cumulate M1

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
equal_income						
class_upper	-0.633***	-0.643***	-0.645***	-0.672***	-0.676***	-0.681***
	(-13.00)	(-12.42)	(-12.30)	(-11.09)	(-11.10)	(-11.33)
class_middle	-0.280***	-0.291***	-0.297***	-0.338***	-0.343***	-0.349***
	(-8.09)	(-8.13)	(-8.40)	(-10.02)	(-9.91)	(-9.92)
class_lower	0.234***	0.250***	0.235***	0.187***	0.186***	0.182***
	(4.29)	(4.52)	(4.25)	(3.39)	(3.31)	(3.30)
proud_bin1		-0.108***	-0.101**	-0.069*	-0.068*	-0.068*
		(-3.36)	(-2.83)	(-2.24)	(-2.17)	(-2.19)
control_no			0.278***	0.293***	0.307***	0.305***
			(4.47)	(4.15)	(4.18)	(4.03)
control_yes			-0.115***	-0.150***	-0.147***	-0.145***
			(-3.39)	(-3.92)	(-3.83)	(-3.80)
poor_lazy				-0.112**	-0.111**	-0.113**

				(-3.14)	(-3.12)	(-3.23)
poor_unfair				0.293***	0.298***	0.291***
				(9.52)	(9.64)	(9.42)
child_unselfish					0.013	0.017
					(0.53)	(0.73)
trust						-0.003
						(-0.10)
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	103440	96517	92147	58456	57602	55346

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 12. Ordered Logit estimation: cumulate M4

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
equal_income						
class_upper	-0.443***	-0.454***	-0.464***	-0.499***	-0.503***	-0.509***
	(-8.89)	(-8.72)	(-8.24)	(-7.52)	(-7.54)	(-7.75)
class_middle	-0.224***	-0.237***	-0.243***	-0.282***	-0.288***	-0.295***
	(-6.42)	(-6.47)	(-6.51)	(-7.56)	(-7.49)	(-7.59)
class_lower	0.179**	0.192***	0.176**	0.126*	0.122*	0.120*
	(3.14)	(3.34)	(3.11)	(2.19)	(2.09)	(2.11)
proud_bin1		-0.137***	-0.130***	-0.088**	-0.088**	-0.087**
		(-4.25)	(-3.65)	(-2.75)	(-2.70)	(-2.79)
control_no			0.248***	0.270***	0.283***	0.284***
			(4.23)	(3.62)	(3.61)	(3.57)
control_yes			-0.132***	-0.165***	-0.161***	-0.157***
			(-3.43)	(-3.87)	(-3.78)	(-3.79)
poor_lazy				-0.089*	-0.088*	-0.090*
				(-2.37)	(-2.36)	(-2.51)
poor_unfair				0.274***	0.279***	0.272***
				(7.75)	(7.86)	(7.78)
child_unselfish					0.015	0.018
					(0.59)	(0.71)
trust						0.004
						(0.11)
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	86923	81302	78563	48481	47653	45812

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

The estimates for cumulate model M6 are shown in Table 13. Note that the sample size is comparatively small. In specification (6) there are only 21,160 observations left.[15] It is obvious that income and education still have the hypothesized effect. Being self-employed has a significantly negative effect (both in M6 and in M4). Being married, however, does not result in robust effects. While estimates in M6 are mostly insignificant, unreported estimates for being married (*stat_married*) in M4 even change their sign. I conclude that marriage is not a robust determinant for the preferences for redistribution.

[15] There are still 22 countries in the sample of specification 6: Australia, Austria, Belgium, Chile, Czech Republic, Estonia, Finland, France, Germany, Italy, Luxembourg, Mexico, New Zealand, Norway, Poland, Slovakia, Spain, Sweden, Turkey, United Kingdom, United States.

Table 13. Ordered Logit estimation: cumulate M6

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
equal_income						
age	0.015***	0.015***	0.014***	0.007	0.007	0.006
	(3.51)	(3.31)	(3.33)	(1.10)	(1.14)	(0.94)
age_sqr	-0.000***	-0.000***	-0.000***	-0.000	-0.000	-0.000
	(-3.95)	(-3.71)	(-3.81)	(-1.19)	(-1.22)	(-1.00)
female	0.146***	0.148***	0.152***	0.176***	0.175***	0.174***
	(4.92)	(4.83)	(4.96)	(5.30)	(5.21)	(5.14)
edu_prime	-0.095*	-0.086+	-0.073+	-0.094	-0.088	-0.066
	(-2.32)	(-1.81)	(-1.66)	(-1.16)	(-1.10)	(-0.78)
edu_somesec	-0.233**	-0.227*	-0.211*	-0.284*	-0.281*	-0.271*
	(-2.75)	(-2.53)	(-2.46)	(-2.36)	(-2.36)	(-2.21)
edu_sec	-0.274**	-0.268**	-0.252**	-0.372*	-0.372*	-0.366*
	(-2.90)	(-2.65)	(-2.58)	(-2.52)	(-2.54)	(-2.41)
edu_uni	-0.281*	-0.298*	-0.283*	-0.518**	-0.518***	-0.501**
	(-2.46)	(-2.52)	(-2.47)	(-3.25)	(-3.30)	(-3.13)
stat_married	-0.079*	-0.057+	-0.068*	-0.038	-0.035	-0.017
	(-2.56)	(-1.93)	(-2.37)	(-0.99)	(-0.92)	(-0.39)
stat_divorced	-0.071+	-0.062	-0.065	0.003	0.008	0.029
	(-1.85)	(-1.53)	(-1.61)	(0.04)	(0.11)	(0.43)
stat_widowed	-0.033	-0.018	-0.036	0.006	0.009	0.025
	(-0.61)	(-0.35)	(-0.73)	(0.08)	(0.14)	(0.40)
jobstat_part	0.063	0.075+	0.075+	-0.042	-0.040	-0.051
	(1.45)	(1.77)	(1.73)	(-0.57)	(-0.55)	(-0.72)
jobstat_self	-0.167***	-0.163***	-0.149**	-0.204**	-0.205**	-0.216***
	(-3.74)	(-3.77)	(-3.18)	(-3.11)	(-3.11)	(-3.37)
jobstat_retired	0.093*	0.097*	0.105*	0.128+	0.130+	0.127+
	(2.23)	(2.24)	(2.43)	(1.93)	(1.94)	(1.80)
jobstat_wife	-0.033	-0.033	-0.031	-0.103+	-0.102+	-0.110+
	(-0.76)	(-0.76)	(-0.77)	(-1.91)	(-1.91)	(-1.95)
jobstat_student	0.072	0.089*	0.092*	0.029	0.029	0.034
	(1.46)	(2.14)	(2.15)	(0.52)	(0.52)	(0.63)
jobstat_unemp	0.075+	0.062	0.062	0.067	0.069	0.074
	(1.70)	(1.52)	(1.53)	(1.08)	(1.11)	(1.19)
jobstat_other	-0.065	-0.072	-0.058	-0.030	-0.035	-0.009
	(-0.92)	(-1.12)	(-0.92)	(-0.30)	(-0.36)	(-0.09)
inc_quint1	0.148**	0.162**	0.147**	0.156+	0.155+	0.146+
	(3.18)	(3.25)	(2.66)	(1.78)	(1.79)	(1.67)
inc_quint2	0.066*	0.074**	0.069*	0.052	0.052	0.055
	(2.41)	(2.59)	(2.22)	(1.39)	(1.41)	(1.42)
inc_quint4	-0.111***	-0.112***	-0.109***	-0.078	-0.078	-0.087+
	(-3.97)	(-3.84)	(-3.66)	(-1.56)	(-1.55)	(-1.82)
inc_quint5	-0.291***	-0.284***	-0.280***	-0.253***	-0.254***	-0.249***
	(-6.45)	(-6.64)	(-6.60)	(-4.04)	(-4.07)	(-4.08)
religion_some	-0.102***	-0.101***	-0.097***	-0.069+	-0.066+	-0.059+
	(-4.95)	(-5.02)	(-4.58)	(-1.95)	(-1.87)	(-1.68)
religion_reg	-0.063*	-0.054+	-0.052	-0.009	-0.006	-0.000
	(-1.99)	(-1.67)	(-1.59)	(-0.17)	(-0.12)	(-0.01)
class_upper	-0.456***	-0.467***	-0.463***	-0.363***	-0.365***	-0.380***
	(-7.45)	(-7.80)	(-7.35)	(-6.41)	(-6.49)	(-6.94)
class_middle	-0.226***	-0.237***	-0.238***	-0.239***	-0.242***	-0.249***
	(-5.35)	(-5.55)	(-5.45)	(-5.23)	(-5.33)	(-5.40)
class_lower	0.103	0.101	0.083	0.014	0.011	0.011
	(1.32)	(1.28)	(1.07)	(0.14)	(0.11)	(0.11)
proud_bin1		-0.121**	-0.119*	-0.032	-0.031	-0.035
		(-2.84)	(-2.52)	(-0.61)	(-0.59)	(-0.67)
control_no			0.184***	0.133*	0.139*	0.135*
			(4.33)	(2.22)	(2.27)	(2.30)
control_yes			-0.128**	-0.152*	-0.153*	-0.149**
			(-2.77)	(-2.49)	(-2.52)	(-2.61)

poor_lazy				-0.062	-0.061	-0.065
				(-1.26)	(-1.25)	(-1.37)
poor_unfair				0.368***	0.365***	0.359***
				(8.32)	(8.47)	(8.84)
child_unselfish					0.092**	0.095**
					(2.58)	(2.97)
trust						0.041
						(1.28)
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	54807	51349	50143	21688	21672	21160

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Comparing the resulting estimates from cumulative M6 with those of cumulative M1 and M4, the social rivalry effect remains significant and important. Nationalism (*proud_bin1*), which is used to test the hypothesis on social identity (H7), still has a negative coefficient. However, results are insignificant for specification (4), (5) and (6). The perception of individual control and autonomy in life increases, the absence of this perception decreases the probability for strong preferences for redistribution. The belief that society is unfair has a significant positive effect on the support for redistribution. In contrast, the belief that poverty is caused by laziness of the poor does not have a significant effect on redistributive preferences. While the influence of altruism, as formulated in hypothesis H11 was already rejected, estimations now show a significant positive effect of altruism on the support of redistribution. These results clearly differ from those obtained for the cumulated models M1 and M4. Now, is this difference due to sample attrition or do the additional control variables drive these results? In unreported regressions I add educational achievements to the cumulated M1 specifications and obtain qualitatively similar results as those from M6 cumulated.[16] However, if cumulated M1 is estimated without using the information of educational achievements but restricting the sample to only include those observations with valid information on education, results for altruism (*child_unselfish*) are likewise significant. The same is true if the sample is restricted to only include those cases used in specification 6 of M6 cumulated. From this I derive that the differences between cumulated M1 and M4 on the one hand, and cumulated M6 on the other, derive mainly from sample attrition. Still, only those results will be considered robust which show a significant effect in all estimations of cumulated M1, M4 and M6. Altruism, as measured here, will accordingly not be considered a robust determinant for preferences of redistribution.

As already mentioned, the hard-work variable, measuring the belief in the fairness of the distribution system, has been excluded from the estimations of cumulated M1, M4 and M6 as presented in Table 11, 12 and 13. Including the *hard-work* variable (*success_luck*,

[16] Regression results are available from the author upon request.

success_work) does not change the conclusions on hypothesis H1-H7 and H9-H11, but drastically reduces the number of observations. What about the variable itself and the associated hypotheses H8a and H8b? Table 14 reports the estimated coefficients for the two hard-work dummies. It can be seen that the belief that success is only determined by luck never has a statistical significant effect. In contrast, believing that hard work results in success, i.e. that the distribution system is fair, significantly reduces the probability for strong support for redistribution in the estimation of cumulated M1 and M4.

Table 14. Estimates for *hard-work* from Cumulated M1 M4 M6

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
M1 success_work	-0.211***	-0.191***	-0.179***	-0.155**	-0.153**	-0.147**
	(-3.90)	(-3.60)	(-3.65)	(-2.93)	(-2.89)	(-2.93)
M1 success_luck	0.055	0.060	0.062	0.039	0.057	0.054
	(0.62)	(0.71)	(0.77)	(0.59)	(0.91)	(0.86)
N	76287	71873	69108	46704	45880	44018
M4 success_work	-0.215***	-0.188***	-0.182***	-0.160**	-0.158**	-0.147**
	(-3.87)	(-3.49)	(-3.60)	(-2.82)	(-2.78)	(-2.80)
M4 success_luck	0.019	0.029	0.025	0.007	0.025	0.024
	(0.21)	(0.33)	(0.29)	(0.09)	(0.36)	(0.34)
N	64225	60369	58870	38814	38008	36452
M6 success_work	-0.150+	-0.113	-0.110	-0.050	-0.047	-0.039
	(-1.67)	(-1.39)	(-1.48)	(-0.52)	(-0.49)	(-0.41)
M6 success_luck	-0.001	0.024	0.007	0.044	0.046	0.050
	(-0.01)	(0.20)	(0.06)	(0.47)	(0.49)	(0.50)
N	34896	32277	31327	12520	12520	12251

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

If sample size is reduced and/or additional controls included, these results are no longer statistically significant. In contrast, Alesina and Giuliano (2009) find that the belief that success is determined by luck has a significant positive effect on preferences for redistribution. This finding most likely results from the use of a different dependent variable (*responsibility*) and the inclusion of *hard-work* as a numeric variable.

The gender effect, hypothesized in H12, is strongly significantly and robustly present in all estimations based on the OECD sample. Accordingly, women are found to have a higher probability of strong preferences for redistribution than men.

5.2 Robustness checks for the OECD sample

To further assure robustness of results, the three analytical steps outlined above (estimation of basic configuration, individual estimation of each focus variable, estimation of cumulated models), have been repeated without controlling for time effects, with the inclusion of some additional micro and macro controls and the use of standard OLS estimation

techniques.[17] The results based on OLS are qualitatively similar. To get a feeling for the size of respective effects, the models of cumulated M6 have been re-estimated using OLS. For some coefficients the level of significance is slightly higher or lower. However, no modification of the conclusions derived from the ordered logit results is necessary. Results for the OLS estimations are shown in Table A2 in the Appendix I. The same holds true for the ordered logit estimations without year fixed effects. Results remain qualitatively similar. Only for the estimation of the cumulated models, the variable indicating the belief that poverty results from laziness (*poor_lazy*) does not produce any significant results.

Also the inclusion of additional control variables in the ordered logit estimations does not alter results. We briefly discuss the estimated coefficients for the additional controls. A dummy that indicates the presence of children in the household (*child_present*) has a mostly negative but insignificant coefficient. In contrast, the political attitude of the respondent has a statistically significant and robust effect (Alesina and Giuliano 2009). People who position themselves on the left (right) of the political spectrum have a significantly higher (lower) probability for strong preferences for redistribution than those in the middle. In the political science literature it is sometimes stated that political attitudes are formed prior to preferences over actual policies (Jaeger 2008). However, this timing of preference formation is hard to prove. Also the explanatory value of political attitudes is not obvious. For this reasons, political attitudes are not included in the main analysis.[18] The inclusion of macro controls also leave results qualitatively unchanged. At first, only the log of per capita GDP is included. While some estimated coefficients for this macro variable are significant, the sign changes and depends on the specification. The log of per capita GDP is then supplemented with additional macro controls. These are the ratio of trade to GDP and the stock of foreign net investments, the growth rate of GDP and the unemployment rate, social expenditure over GDP, social expenditure over GDP ten years ago, the Gini coefficient of gross household incomes and ten year lags thereof. All these macro variables do not exhibit a systematic statistical relation with preferences for redistribution and do not change the conclusion with respect to hypothesis H1-H12.

In sum, for the OECD we find that higher income and education levels reduce the support for redistribution (H1 and H2 corroborated). Being self-employed also reduced the probability for strong redistributive preferences (H3 corroborated). Being married and more actively involved in religious activities do not result in a robust effect on preferences for

[17] Neither the estimates without year fixed effects, nor most OLS estimates, nor the regressions with additional controls will be reported and can be obtained from the author upon request.
[18] Individual satisfaction with own financial situation is another variable that has a strong statistical relation with redistributive preferences, but is not included due to questionable explanatory meaning.

redistribution (H4 and H5 not corroborated). The social rivalry effect is found to be an important determinant for redistributive preferences (H6 corroborated). Social identity in the form of national pride is shown to have a statistical effect on preferences for redistribution over a large group of specifications. However, results are not fully robust so that hypothesis H7 is not supported. Regarding the fairness of the distribution system the belief that success is a matter of luck rather than hard work does not have any effect on support for redistribution (H8b not corroborated). The contrary believe that hard work brings success shows a statistical association in most, but not all specifications. Accordingly, hypothesis H8a can not be substantiated. The idea that poverty results from laziness does not have a robust association with support for redistribution (H9a not corroborated). On the contrary, people who think that poverty is the results of an unfair society have a systematically higher probability for strong preferences for redistribution (H9b corroborated). The feeling of autonomy and control over ones life decreases support for redistribution (H10a corroborated). The lack of autonomy and control does have a positive effect on redistributive preferences. However, since results are not robust over all specifications hypothesis H10b is not corroborated. A significant positive effect of altruism is found for some, but nor for all specifications, so that hypothesis H11 is not supported. Finally, respondent's sex is found to be a highly robust predictor for the support of redistribution. In line with hypothesis H12, women show significant stronger preferences for redistribution than men in all performed estimations.[19]

6. Results for non-OECD countries

Exploiting the merits of the WVS data, the analysis is now performed with the large sample of non-OECD countries. For these countries the mean of the dependent variable *equal-income* by country and wave is presented in Table 15. There are 196,712 valid observations in 66 countries. The sample is quite heterogeneous. Following World Bank categories, about ten percent of the observations come from high income countries, about 82% from middle income countries and about eight percent from low income countries. Per capita GDP in constant international 2005 Dollar is as low as 247$ for Zimbabwe and up to 26,000$ for Northern Cyprus and Northern Ireland. The mean per capita GDP over all available country-year observations is 6,617$ as compared to 23,793$ for the OECD sample. The average preferences for redistribution is lower in these non-OECD countries as compared

[19] Basically all empirical studies find the positive association of female gender on preferences for redistribution. These findings are in line with those on gender effects in altruism (Andreoni and Versterlund 2001) and competition (Gneezy et al. 2009).

to the OECD countries, as can be seen at the end of Table 15. Algeria has the lowest average preference for redistribution in the sample, Northern Cyprus the highest.

Table 15. Mean of *equal-income* by country and wave

country \ wave	*2*	*3*	*4*	*5*	*6*	*Total*
Albania	.	6.115	5.041	.	6.094	5.796
Algeria	.	.	2.911	.	.	2.911
Andorra	.	.	.	4.856	.	4.856
Argentina	3.995	5.044	6.101	5.671	.	5.257
Armenia	.	4.604	.	.	4.692	4.642
Azerbaijan	.	5.103	.	.	6.310	5.636
Bangladesh	.	3.893	3.439	.	.	3.669
Belarus	3.652	4.374	5.734	.	5.367	4.753
Bosnia	.	5.504	4.897	.	6.678	5.765
Brazil	5.140	5.289	.	5.325	.	5.242
Bulgaria	4.282	5.604	4.637	5.326	3.465	4.567
Burkina Faso	.	.	.	3.922	.	3.922
China	3.127	5.958	4.737	5.227	.	4.938
Colombia	.	4.798	.	5.500	.	5.150
Croatia	.	5.995	6.572	.	6.803	6.476
Cyprus	.	.	.	5.728	6.043	5.877
Dominican Rep.	.	3.288	.	.	.	3.288
Egypt	.	.	2.768	4.239	.	3.505
El Salvador	.	4.173	.	.	.	4.173
Ethiopia	.	.	.	4.386	.	4.386
Georgia	.	3.401	.	4.126	3.313	3.586
Ghana	.	.	.	3.237	.	3.237
Guatemala	.	.	.	3.928	.	3.928
Hong Kong	.	.	.	6.222	.	6.222
India	5.012	7.345	6.822	6.210	.	6.230
Indonesia	.	.	3.821	3.632	.	3.697
Iran	.	.	5.336	6.833	.	6.201
Iraq	.	.	5.575	.	.	5.575
Jordan	.	.	3.736	4.031	.	3.882
Kosovo	.	.	.	.	6.564	6.564
Kyrgyz Republic	.	.	5.557	.	.	5.557
Latvia	3.696	4.532	.	.	4.406	4.285
Lithuania	3.665	5.766	5.857	.	5.622	5.268
Macedonia	.	5.888	5.687	.	.	5.784
Malaysia	.	.	.	4.337	.	4.337
Mali	.	.	.	3.465	.	3.465
Malta	3.159	.	.	.	4.279	4.041
Moldova	.	.	.	.	5.962	5.962
Montenegro	.	.	.	.	5.249	5.249
Morocco	.	.	3.254	5.652	.	4.084
Nigeria	3.341	4.223	4.751	.	.	4.262
Northern Cyprus	.	.	.	.	6.919	6.919
Northern Ireland	4.128	.	5.354	.	5.956	5.310
Pakistan	.	3.738	7.174	.	.	6.027
Peru	.	4.371	3.484	3.521	.	3.746
Philippines	.	5.000	4.443	.	.	4.722
Puerto Rico	.	4.773	3.514	.	.	4.287
Moldova	.	3.970	4.296	5.198	.	4.504
Romania	4.540	4.716	7.313	6.337	7.436	6.133

Russia	4.006	4.536	3.918	4.600	4.568	4.299
Rwanda	.	.	.	5.029	.	5.029
Saudi Arabia	.	.	4.283	.	.	4.283
Serbia	.	5.783	5.497	4.903	6.437	5.672
Singapore	.	.	4.043	.	.	4.043
South Africa	5.267	5.942	5.580	5.334	.	5.536
Taiwan	.	4.942	.	4.150	.	4.455
Thailand	.	.	.	3.933	.	3.933
Trinidad and Tobago	.	.	.	3.817	.	3.817
Uganda	.	.	3.807	.	.	3.807
Ukraine	.	4.329	3.604	4.116	3.339	3.921
Tanzania	.	.	6.032	.	.	6.032
Uruguay	.	5.850	.	5.647	.	5.750
Venezuela	.	5.446	5.421	.	.	5.433
Vietnam	.	.	4.670	5.012	.	4.878
Zambia	.	.	.	4.772	.	4.772
Zimbabwe	.	.	4.161	.	.	4.161
Total	4.348	4.986	4.776	4.860	5.428	4.904
OECD-Total	4.892	5.584	5.758	5.557	5.950	5.516

The descriptive statistics of the dependent and explanatory variables for this sample is relegated to the Appendix I, Table A3. Table 16 depicts the distribution of the preferences for redistribution (*equal-income*) for the non-OECD sample and for the OECD sample to allow comparison. While in the OECD only 10% of respondents demand higher income differences as incentives, in the non-OECD sample 20% of respondents do so. Apparently, there is a perception that incentive costs of redistribution are high in these countries. One reason might be that in less developed economies incentives are perceived as more important due to an economy wide inefficient use of labour (e.g. over-employment in the public sector in resource-abundant countries).

Table 16. Distribution of *equal-income* in the non-OECD and OECD Sample

	NON-OECD Sample			*OECD Sample*		
equal_income	Freq.	Percent	Cum.	Freq.	Percent	Cum.
incentives to individual efforts (1)	38,824	19.74	19.74	16,237	10.01	10.01
2	15,899	8.08	27.82	9,460	5.83	15.83
3	24,979	12.7	40.52	22,495	13.86	29.7
4	18,864	9.59	50.11	18,539	11.42	41.12
5	14,974	7.61	57.72	14,455	8.91	50.03
6	23,618	12.01	69.73	21,394	13.18	63.21
7	11,480	5.84	75.56	12,942	7.98	71.19
8	12,114	6.16	81.72	14,950	9.21	80.4
9	9,879	5.02	86.74	10,563	6.51	86.91
incomes more equal (10)	26,081	13.26	100	21,246	13.09	100
Total	196,712	100		162,281	100	

Employing the same econometric approach as used above, we directly turn to the estimation results for the non-OECD sample. A first surprise is that sample attrition, i.e. sample size reduction due to the inclusion of more explanatory variables, is less of a problem in the present sample as compare to the OECD sample.[20] The estimation results for the basic configuration are shown in Table 17. Income (H1) and education (H2) have the expected significant effect. However, self-employment (H3), marriage (H4) and religion (H5) do not show any statistical relation to preferences for redistribution. Instead, being unemployed or retired has a significant positive effect on preferences for redistribution.

Table 17. Basic: Ordered logit estimations of Model M1 – M6

	M1	*M 2*	*M 3*	*M 4*	*M 5*	***M 6***
equal_income						
age	-0.007**	-0.006*	-0.006*	-0.001	0.002	0.001
	(-2.77)	(-2.13)	(-2.45)	(-0.56)	(0.95)	(0.46)
age_sqr	0.000***	0.000*	0.000*	0.000	-0.000	-0.000
	(4.08)	(2.28)	(2.53)	(1.21)	(-1.19)	(-0.65)
female	0.080***	0.045**	0.045**	0.040*	0.032*	0.032+
	(5.13)	(3.00)	(3.05)	(2.18)	(2.00)	(1.92)
edu_prime		-0.132**	-0.113**		-0.114**	-0.088*
		(-3.07)	(-2.93)		(-3.01)	(-2.34)
edu_somesec		-0.379***	-0.330***		-0.340***	-0.324***
		(-6.91)	(-7.09)		(-7.11)	(-6.79)
edu_sec		-0.499***	-0.435***		-0.444***	-0.409***
		(-6.38)	(-6.76)		(-6.77)	(-7.54)
edu_uni		-0.683***	-0.582***		-0.591***	-0.551***
		(-7.79)	(-8.17)		(-8.09)	(-8.31)
inc_quint1			0.097	0.173*	0.088	0.072
			(1.53)	(2.44)	(1.38)	(1.40)
inc_quint2			0.121***	0.169***	0.125***	0.110***
			(3.83)	(4.93)	(3.97)	(4.28)
inc_quint4			-0.144***	-0.187***	-0.139**	-0.114***
			(-3.35)	(-4.51)	(-3.29)	(-3.90)
inc_quint5			-0.281***	-0.336***	-0.270***	-0.274***
			(-5.27)	(-6.13)	(-5.06)	(-4.82)
stat_married				0.024	-0.001	0.006
				(0.92)	(-0.04)	(0.27)
stat_divorced				-0.013	-0.034	-0.018
				(-0.34)	(-1.05)	(-0.60)
stat_widowed				0.118**	0.076*	0.078*
				(2.83)	(2.04)	(2.10)
jobstat_part				0.060	0.061+	0.060+
				(1.51)	(1.67)	(1.83)
jobstat_self				0.017	-0.048	-0.034
				(0.53)	(-1.45)	(-1.05)
jobstat_retired				0.147***	0.148***	0.152***
				(3.80)	(3.83)	(3.95)
jobstat_wife				0.122***	0.019	0.038
				(4.02)	(0.63)	(1.38)
jobstat_student				0.077*	0.082*	0.064*
				(2.20)	(2.46)	(2.25)

[20] At first sight, less item non-response might be interpreted as indication of better data quality. However, higher item response could also result from forged data not obtained in the field, but invented by the interviewer. On issues of survey data quality in developing countries see Judge and Schechter (2009).

jobstat_unemp				0.144***	0.093***	0.096***
				(5.60)	(4.03)	(3.94)
jobstat_other				0.208**	0.117	0.148*
				(2.84)	(1.59)	(2.16)
religion_some						-0.027
						(-1.06)
religion_reg						0.024
						(0.89)
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	196375	185164	165805	171618	161772	152181

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

The importance of income, education, unemployment and retirement can also be observed in the estimations including each focus variable individually. The estimation results for each focus variable individually, will now be discussed. As can be seen in Table 18 the social rivalry effect and the social identity effect are both supported by the data.

Table 18. Focus Variables: social rivalry effect and social identity

	M1	*M 2*	*M 3*	*M 4*	*M 5*	*M 6*
class_upper	-0.364***	-0.243***	-0.152***	-0.246***	-0.159***	-0.176***
	(-8.38)	(-6.87)	(-3.60)	(-5.29)	(-3.80)	(-4.21)
class_middle	-0.166***	-0.109***	-0.084***	-0.127***	-0.081***	-0.083***
	(-6.67)	(-5.38)	(-3.99)	(-5.02)	(-3.98)	(-4.18)
class_lower	0.119***	0.058*	0.043	0.074*	0.040	0.044
	(3.83)	(2.05)	(1.46)	(2.43)	(1.34)	(1.49)
N	141119	135917	123584	124289	119964	113310
proud_bin1	-0.096**	-0.108***	-0.116***	-0.109***	-0.116***	-0.106***
	(-2.98)	(-3.44)	(-3.75)	(-3.51)	(-3.70)	(-3.55)
N	188226	177470	159257	164817	155342	145957

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

As reported in Table 19, the perception of a fair allocation system does not result in a meaningful relation with preferences for redistribution. Respondents believing that hard work results in success (*success_work*) have weaker preferences for redistribution. However, respondents who think that success is a matter of luck (*success_luck*) also have significantly less support for redistribution. This relation is contrary to the hypothesized one and is difficult to make sense of. The beliefs in the moral worth of the poor show the same effects as in the OECD sample. If poverty is thought to be the result of laziness (*poor_lazy*), support for redistribution decreases. If, on the other hand an unfair society is seen as the reason for poverty (*poor_unfair*), the probability for strong redistributive preferences is higher.

Table 19. Focus Variables: just world beliefs, moral worth and self-control

	M1	*M 2*	*M 3*	*M 4*	*M 5*	*M 6*
success_work	-0.176*	-0.154*	-0.158*	-0.179*	-0.155*	-0.191**
	(-2.40)	(-2.04)	(-2.11)	(-2.46)	(-2.05)	(-2.66)
success_luck	-0.315***	-0.323***	-0.326***	-0.327***	-0.329***	-0.358***
	(-7.52)	(-7.15)	(-6.51)	(-6.75)	(-6.16)	(-6.29)
N	108642	98101	88022	94240	84878	76042

poor_lazy	-0.114*	-0.138**	-0.131**	-0.093*	-0.134**	-0.131**
	(-2.45)	(-3.04)	(-3.17)	(-2.27)	(-3.22)	(-3.00)
poor_unfair	0.148**	0.154**	0.156**	0.148**	0.155**	0.147**
	(2.79)	(3.03)	(3.05)	(2.88)	(3.06)	(2.84)
N	93619	84335	74767	80398	72235	67693
control_no	0.155+	0.127	0.128	0.137+	0.126	0.098
	(1.80)	(1.52)	(1.57)	(1.71)	(1.56)	(1.24)
control_yes	-0.331***	-0.313***	-0.310***	-0.319***	-0.307***	-0.312***
	(-9.35)	(-8.84)	(-8.61)	(-8.76)	(-8.44)	(-8.33)
N	189674	179751	161243	165991	157317	148660

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

As is the case in OECD countries, individuals who feel autonomous and in control of their life (*control_yes*) have a lower probability for strong preferences for redistribution. However, the opposite is not true. Lacking the feeling of control and autonomy does not robustly increase the support for redistribution. Finally, altruism as captured by *child-unselfish* has the hypothesized positive effect on preferences for redistribution (Table 20).

Table 20. Focus Variables: altruism

	M1	*M 2*	*M 3*	*M 4*	*M 5*	*M 6*
child_unselfish	0.038*	0.050**	0.047*	0.039*	0.049**	0.045*
	(2.14)	(2.70)	(2.54)	(2.15)	(2.58)	(2.39)
N	192107	180927	161791	167697	157877	148321

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Turning to the cumulated models, the results for the estimation of cumulated M1 in Table 21 show a robust effect of the social rivalry effect. The social identity effect has some statistical backing but is not significant for all estimations. This however, might be driven by sample attrition, since with the inclusion of *poor-lazy* and *poor-unfair* about two third of the observations are lost. Control over life and autonomy have the expected effect, albeit the effect is weak for individuals lacking the feeling of control. Perceptions about the reasons of poverty (laziness and unfair society) and altruism have no effect whatsoever.

Table 21. Ordered logit estimation cumulate M1

	M1	*M2*	*M3*	*M4*	*M5*	***M6***
equal_income						
age	-0.008**	-0.008**	-0.007**	-0.009+	-0.010+	-0.011*
	(-2.90)	(-2.90)	(-2.79)	(-1.77)	(-1.89)	(-2.09)
age_sqr	0.000***	0.000***	0.000***	0.000*	0.000**	0.000**
	(3.68)	(3.72)	(3.74)	(2.57)	(2.67)	(2.85)
female	0.074***	0.070***	0.059***	0.065***	0.067***	0.071***
	(4.78)	(4.57)	(4.22)	(3.43)	(3.45)	(3.61)
class_upper	-0.364***	-0.362***	-0.329***	-0.401***	-0.394***	-0.385***
	(-8.38)	(-8.28)	(-7.77)	(-5.87)	(-5.80)	(-5.64)
class_middle	-0.166***	-0.166***	-0.156***	-0.202***	-0.198***	-0.187***
	(-6.67)	(-6.88)	(-6.88)	(-5.40)	(-5.28)	(-5.00)
class_lower	0.119***	0.106***	0.087**	0.138***	0.141***	0.139***
	(3.83)	(3.35)	(2.98)	(4.16)	(4.28)	(4.03)
proud_bin1		-0.105**	-0.085*	-0.046	-0.046	-0.046
		(-2.81)	(-2.31)	(-1.03)	(-1.01)	(-0.99)

control_no			0.093	0.162*	0.158*	0.149*
			(1.17)	(2.34)	(2.30)	(2.21)
control_yes			-0.331***	-0.322***	-0.332***	-0.332***
			(-8.90)	(-6.44)	(-6.64)	(-6.77)
poor_lazy				-0.156	-0.166	-0.153
				(-1.63)	(-1.62)	(-1.51)
poor_unfair				0.061	0.049	0.065
				(0.59)	(0.45)	(0.59)
child_unselfish					0.023	0.015
					(1.02)	(0.65)
trust						0.128***
						(4.36)
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	141119	136492	132046	46650	45718	44227

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

The estimation results for cumulated M6, with all socioeconomic controls from the basic configuration, by and large corroborate the findings from cumulated M1. The social rivalry effect is important (*class_upper-class_lower*); the social identity effect has some support. Feelings of individual control (*control_yes, control_no*) significantly affect preferences for redistribution. The view that poverty results from an unfair society (*poor_unfair*) has no effect on support for redistribution. Neither has altruism (*child_unselfish*). The perception that poverty results from laziness (*poor_lazy*) however has a weakly significant, negative effect on the support for redistribution. Finally, income and education have the expected negative effects. The effect of unemployment is not robust, the positive and significant effect of retirement is. It is also noteworthy that the effect of gender is not robust in the sample of non-OECD countries.

Table 22. Ordered logit estimation cumulate M6

	M1	*M2*	*M3*	*M4*	*M5*	***M6***
equal_income						
age	-0.000	-0.001	-0.000	0.001	0.000	-0.000
	(-0.10)	(-0.27)	(-0.08)	(0.16)	(0.01)	(-0.02)
age_sqr	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(-0.32)	(-0.10)	(-0.20)	(-0.39)	(-0.25)	(-0.32)
female	0.022	0.019	0.013	-0.001	0.000	0.000
	(1.37)	(1.13)	(0.80)	(-0.06)	(0.01)	(0.00)
edu_prime	-0.071+	-0.069+	-0.045	-0.024	-0.031	-0.043
	(-1.83)	(-1.78)	(-1.31)	(-0.55)	(-0.71)	(-1.00)
edu_somesec	-0.280***	-0.282***	-0.253***	-0.298***	-0.304***	-0.307***
	(-5.88)	(-5.93)	(-5.74)	(-4.67)	(-4.71)	(-4.88)
edu_sec	-0.329***	-0.334***	-0.308***	-0.331***	-0.338***	-0.343***
	(-6.56)	(-6.73)	(-6.78)	(-5.74)	(-5.85)	(-6.31)
edu_uni	-0.459***	-0.468***	-0.437***	-0.480***	-0.477***	-0.497***
	(-7.78)	(-8.15)	(-8.30)	(-6.56)	(-6.40)	(-6.41)
stat_married	0.017	0.023	0.015	0.064	0.065	0.069
	(0.68)	(0.87)	(0.58)	(1.40)	(1.37)	(1.44)
stat_divorced	-0.008	-0.005	-0.007	0.041	0.042	0.057
	(-0.18)	(-0.10)	(-0.17)	(0.50)	(0.50)	(0.69)
stat_widowed	0.133**	0.125**	0.119**	0.193**	0.190**	0.197**
	(3.11)	(2.78)	(2.77)	(2.72)	(2.63)	(2.72)
jobstat_part	0.064+	0.067+	0.070+	-0.003	0.002	-0.016

	(1.77)	(1.88)	(1.93)	(-0.04)	(0.02)	(-0.24)
jobstat_self	-0.023	-0.015	-0.005	-0.104*	-0.101*	-0.097*
	(-0.69)	(-0.46)	(-0.17)	(-2.33)	(-2.25)	(-2.03)
jobstat_retired	0.120**	0.123**	0.119**	0.138*	0.139*	0.151*
	(2.95)	(2.89)	(2.88)	(2.32)	(2.26)	(2.45)
jobstat_wife	0.053+	0.050+	0.044+	0.024	0.028	0.025
	(1.88)	(1.88)	(1.66)	(0.44)	(0.51)	(0.47)
jobstat_student	0.085**	0.086**	0.080*	0.038	0.040	0.044
	(2.66)	(2.61)	(2.37)	(0.60)	(0.61)	(0.65)
jobstat_unemp	0.089***	0.091***	0.089***	0.047	0.042	0.046
	(3.60)	(3.72)	(3.66)	(0.95)	(0.82)	(0.91)
jobstat_other	0.139+	0.134+	0.088	0.027	0.016	0.008
	(1.74)	(1.70)	(1.37)	(0.29)	(0.17)	(0.08)
inc_quint1	0.076	0.076	0.071	0.135+	0.143+	0.141+
	(1.50)	(1.48)	(1.44)	(1.72)	(1.79)	(1.83)
inc_quint2	0.099***	0.102***	0.098***	0.136***	0.137**	0.132**
	(3.76)	(3.86)	(3.83)	(3.34)	(3.23)	(3.25)
inc_quint4	-0.096***	-0.094**	-0.091**	-0.099*	-0.100*	-0.108*
	(-3.44)	(-3.27)	(-3.16)	(-2.22)	(-2.20)	(-2.40)
inc_quint5	-0.246***	-0.246***	-0.230***	-0.168*	-0.163*	-0.157*
	(-4.37)	(-4.28)	(-4.23)	(-2.25)	(-2.16)	(-2.11)
religion_some	-0.026	-0.018	-0.012	0.023	0.021	0.023
	(-1.08)	(-0.75)	(-0.50)	(0.57)	(0.51)	(0.55)
religion_reg	0.012	0.017	0.025	0.059	0.064	0.074+
	(0.43)	(0.63)	(0.98)	(1.53)	(1.62)	(1.95)
class_upper	-0.176***	-0.172***	-0.143***	-0.213**	-0.209**	-0.196**
	(-4.21)	(-4.10)	(-3.56)	(-2.83)	(-2.75)	(-2.69)
class_middle	-0.083***	-0.083***	-0.069***	-0.107***	-0.103***	-0.090**
	(-4.18)	(-4.39)	(-3.85)	(-3.82)	(-3.64)	(-3.21)
class_lower	0.044	0.032	0.017	0.071	0.074	0.072
	(1.49)	(1.05)	(0.55)	(1.51)	(1.54)	(1.40)
proud_bin1		-0.111**	-0.089**	-0.064	-0.065	-0.064
		(-3.26)	(-2.60)	(-1.21)	(-1.19)	(-1.19)
control_no			0.094	0.198**	0.194**	0.189**
			(1.14)	(2.96)	(2.89)	(2.85)
control_yes			-0.320***	-0.309***	-0.321***	-0.318***
			(-8.02)	(-5.42)	(-5.47)	(-5.60)
poor_lazy				-0.179+	-0.195+	-0.191+
				(-1.79)	(-1.78)	(-1.77)
poor_unfair				0.097	0.078	0.090
				(0.81)	(0.59)	(0.69)
child_unselfish					0.037	0.028
					(1.26)	(0.98)
trust						0.168***
						(5.75)
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	113310	109556	106760	34680	33849	32850

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

7. Conclusion

The present study corroborates earlier findings on determinants of preferences for redistribution using survey data in breadth (across countries) and depth (across time) so far not applied to this question. Accordingly, it is possible to distinguish determinants that are valid either only in OECD countries or only in non-OECD countries or universally in one hundred nations around the world. Also, different hypotheses on determinants of preferences

for redistribution are jointly tested to prevent missing variable bias and get an idea about possible substitutive relations between respective potential determinants.

In line with basic economic reasoning and previous empirical research, discussed in section 2, the analysis confirms that higher incomes and higher educational attainments reduce the support for redistribution. This result is highly robust and true on a global scale. A similar robust and universal validity is found for the social rivalry effect and the perception of individual control and autonomy. There is some support for the social identity hypothesis, which states that national identification might decrease the support for redistribution. The social identity hypothesis however is not robust to all variations in specification and sample size.

In the OECD being self-employed is a significant and robust predictor for weaker preferences for redistributions. Also important are subjective beliefs about the reasons for poverty. While the idea that poverty results from laziness is not robust to all specifications, the belief that poverty results from an unfair society consistently, significantly and robustly increases support for redistribution. The effect of altruism has some weak, but not robust support from the data. While the belief that success is a matter of luck has no effect, the belief that hard work results in success decreases support for redistribution in most, but not in all estimated models. The same is true for religious activity and marriage which are both hypothesised to provide some substitute for social insurance. However, while there are significant results for some specifications, theses are not robust over all steps of the analysis.

Besides the already mentioned commonalities, there are considerable differences for non-OECD countries: Self-employment, marriage and religion show no statistical effect whatsoever. Beliefs about the reasons for poverty have significant effects if individually added to the socioeconomic controls. However, these effects are not robust to the inclusion of additional focus variables. This is also true for our measure of altruism. Individually included, altruism has a significant positive effect on the support for redistribution. There is however no effect if additional focus variables are added. Both, the opinion that success is the result of hard work and that it is a matter of luck, significantly decrease the support for redistribution. The meaning of this is hard to interpret. Finally, in the non-OECD countries a robust positive effect of retirement emerges from the data.

The present study identifies income, education, social class and the subjective perception of autonomy and control over life as universal determinants for preferences about income inequality and implicitly about redistribution. An important next step is to understand how individual preferences translate into redistributive policies.

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Appendix I

Table A1. Year – wave structure of WVS/EVS data.

year	*1*	*2*	*3*	*4*	*5*	*6*	*Total*
1981	14,827	0	0	0	0	0	14,827
1982	8,008	0	0	0	0	0	8,008
1983	467	0	0	0	0	0	467
1984	1,932	0	0	0	0	0	1,932
1989	0	2,336	0	0	0	0	2,336
1990	0	50,805	0	0	0	0	50,805
1991	0	7,417	0	0	0	0	7,417
1992	0	1,035	0	0	0	0	1,035
1993	0	1,103	0	0	0	0	1,103
1994	0	0	780	0	0	0	780
1995	0	0	16,671	0	0	0	16,671
1996	0	0	33,122	0	0	0	33,122
1997	0	0	14,173	0	0	0	14,173
1998	0	0	12,600	0	0	0	12,600
1999	0	0	1,254	41,367	0	0	42,621
2000	0	0	0	18,025	0	0	18,025
2001	0	0	0	31,573	0	0	31,573
2002	0	0	0	6,300	0	0	6,300
2003	0	0	0	2,544	0	0	2,544
2004	0	0	0	2,325	933	0	3,258
2005	0	0	0	0	18,385	0	18,385
2006	0	0	0	0	32,050	0	32,050
2007	0	0	0	0	24,447	0	24,447
2008	0	0	0	0	7,076	55,878	62,954
2009	0	0	0	0	0	9,988	9,988
Total	25,234	62,696	78,600	102,134	82,891	65,866	417,421

Note: Numbers indicate numbers of observations surveyed in the respective year, full sample.

Table A2. OLS estimation of Cumulate M6 (as shown in Table 13)

	M1	*M2*	*M3*	*M4*	*M5*	*M6*
age	0.024**	0.023**	0.022**	0.009	0.009	0.008
	(3.50)	(3.39)	(3.58)	(1.08)	(1.11)	(0.92)
age_sqr	-0.000***	-0.000**	-0.000***	-0.000	-0.000	-0.000
	(-3.82)	(-3.67)	(-3.97)	(-1.03)	(-1.05)	(-0.85)
female	0.230***	0.233***	0.238***	0.289***	0.286***	0.286***
	(5.77)	(5.70)	(5.82)	(6.72)	(6.57)	(6.49)
edu_prime	-0.109*	-0.091	-0.076	-0.097	-0.090	-0.060
	(-2.13)	(-1.52)	(-1.37)	(-0.83)	(-0.78)	(-0.50)
edu_somesec	-0.305*	-0.291*	-0.271*	-0.378*	-0.374*	-0.362*
	(-2.72)	(-2.47)	(-2.42)	(-2.22)	(-2.23)	(-2.10)
edu_sec	-0.377**	-0.365*	-0.345*	-0.544*	-0.545*	-0.539*
	(-2.97)	(-2.68)	(-2.66)	(-2.62)	(-2.65)	(-2.53)
edu_uni	-0.398*	-0.422*	-0.405*	-0.783**	-0.786**	-0.761**
	(-2.53)	(-2.63)	(-2.61)	(-3.39)	(-3.44)	(-3.27)
stat_married	-0.135**	-0.103*	-0.120**	-0.071	-0.067	-0.038
	(-3.16)	(-2.54)	(-3.01)	(-1.36)	(-1.28)	(-0.64)
stat_divorced	-0.114+	-0.101	-0.105+	-0.001	0.007	0.043
	(-1.95)	(-1.61)	(-1.72)	(-0.01)	(0.06)	(0.37)
stat_widowed	-0.063	-0.039	-0.066	-0.023	-0.016	0.009
	(-0.74)	(-0.48)	(-0.87)	(-0.23)	(-0.16)	(0.10)

jobstat_part	0.107	0.122^{+}	0.121^{+}	-0.070	-0.065	-0.083
	(1.64)	(1.95)	(1.90)	(-0.61)	(-0.58)	(-0.75)
jobstat_self	-0.231***	-0.238***	-0.216**	-0.302**	-0.303**	-0.321**
	(-4.07)	(-4.08)	(-3.35)	(-3.30)	(-3.26)	(-3.57)
jobstat_retired	0.147*	0.148*	0.157*	0.181^{+}	0.183^{+}	0.177
	(2.30)	(2.24)	(2.37)	(1.77)	(1.78)	(1.62)
jobstat_wife	-0.077	-0.082	-0.077	-0.196^{+}	-0.194^{+}	-0.207*
	(-0.98)	(-1.04)	(-1.05)	(-2.04)	(-2.04)	(-2.09)
jobstat_student	0.110	0.144*	0.149*	0.059	0.058	0.070
	(1.41)	(2.27)	(2.32)	(0.60)	(0.60)	(0.71)
jobstat_unemp	0.112^{+}	0.092	0.096^{+}	0.078	0.081	0.087
	(1.85)	(1.65)	(1.72)	(0.85)	(0.87)	(0.95)
jobstat_other	-0.094	-0.098	-0.078	-0.060	-0.068	-0.029
	(-0.82)	(-0.94)	(-0.75)	(-0.38)	(-0.44)	(-0.18)
inc_quint1	0.214**	0.234**	0.213*	0.222^{+}	0.222^{+}	0.208
	(3.06)	(3.18)	(2.65)	(1.75)	(1.78)	(1.66)
inc_quint2	0.108*	0.120*	0.113*	0.078	0.080	0.083
	(2.48)	(2.65)	(2.33)	(1.35)	(1.39)	(1.39)
inc_quint4	-0.188***	-0.192***	-0.186***	-0.139	-0.138	-0.152^{+}
	(-3.81)	(-3.80)	(-3.73)	(-1.67)	(-1.65)	(-1.92)
inc_quint5	-0.480***	-0.475***	-0.459***	-0.442***	-0.442***	-0.435***
	(-5.85)	(-5.86)	(-5.80)	(-4.07)	(-4.07)	(-4.09)
religion_some	-0.167***	-0.161***	-0.152***	-0.110^{+}	-0.105^{+}	-0.094
	(-5.12)	(-5.09)	(-4.70)	(-1.92)	(-1.85)	(-1.63)
religion_reg	-0.098*	-0.083^{+}	-0.079	-0.020	-0.016	-0.007
	(-2.16)	(-1.77)	(-1.66)	(-0.27)	(-0.22)	(-0.09)
class_upper	-0.701***	-0.713***	-0.705***	-0.569***	-0.572***	-0.595***
	(-7.08)	(-7.39)	(-7.01)	(-6.15)	(-6.24)	(-6.75)
class_middle	-0.353***	-0.367***	-0.368***	-0.380***	-0.384***	-0.397***
	(-5.37)	(-5.52)	(-5.44)	(-4.81)	(-4.91)	(-5.05)
class_lower	0.126	0.118	0.094	-0.018	-0.022	-0.025
	(1.12)	(1.03)	(0.83)	(-0.12)	(-0.15)	(-0.16)
proud_bin1		-0.188*	-0.182*	-0.039	-0.038	-0.043
		(-2.62)	(-2.32)	(-0.47)	(-0.45)	(-0.51)
control_bin2			0.167**	0.105	0.113	0.111
			(2.91)	(1.35)	(1.43)	(1.47)
control_bin9			-0.197***	-0.235**	-0.237**	-0.231**
			(-4.10)	(-3.28)	(-3.32)	(-3.52)
poor_lazy				-0.090	-0.089	-0.094
				(-1.20)	(-1.19)	(-1.28)
poor_unfair				0.581***	0.576***	0.569***
				(9.91)	(10.12)	(10.66)
child_unselfish					0.153*	0.157**
					(2.64)	(2.98)
trust						0.057
						(1.06)
_cons	6.072***	6.116***	4.950***	6.653***	6.608***	6.528***
	(24.54)	(22.77)	(13.59)	(21.12)	(20.82)	(19.65)
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	54807	51349	50143	21688	21672	21160

Notes: OLS regression with equal-income as dependent variable; *t* statistics in parentheses; $^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A3. Descriptive Statistics – non-OECD Sample

Variable	*Obs.*	*Mean*	*Mean-OECD*	*Std. Dev.*	*Min*	*Max*
equal__income	196712	4.904	5.516	3.083	1	10
equal_income_bin2	196712	0.183	0.196	0.387	0	1
equal_income_bin9	196712	0.278	0.158	0.448	0	1
female	216425	0.523	0.529	0.499	0	1
age	215024	40.132	44.287	15.910	15	100
age_sqr	215024	1863.701	2260.769	1450.041	225	10000
edu_no	201334	0.145	0.063	0.352	0	1
edu_prime	201334	0.182	0.243	0.386	0	1
edu_somesec	201334	0.246	0.233	0.431	0	1
edu_sec	201334	0.273	0.300	0.445	0	1
edu_uni	201334	0.155	0.161	0.362	0	1
stat_married	212825	0.631	0.623	0.483	0	1
stat_divorced	212825	0.047	0.068	0.211	0	1
stat_widowed	212825	0.069	0.075	0.254	0	1
stat_single	212825	0.253	0.233	0.435	0	1
jobstat_full	210296	0.350	0.411	0.477	0	1
jobstat_part	210296	0.067	0.076	0.250	0	1
jobstat_self	210296	0.109	0.068	0.311	0	1
jobstat_retired	210296	0.119	0.184	0.324	0	1
jobstat_wife	210296	0.143	0.127	0.350	0	1
jobstat_student	210296	0.080	0.060	0.271	0	1
jobstat_unemp	210296	0.114	0.056	0.318	0	1
jobstat_other	210296	0.020	0.019	0.139	0	1
inc_quint1	192161	0.295	0.197	0.456	0	1
inc_quint2	192161	0.289	0.284	0.453	0	1
inc_quint3	192161	0.237	0.239	0.425	0	1
inc_quint4	192161	0.129	0.176	0.336	0	1
inc_quint5	192161	0.049	0.103	0.215	0	1
religion_never	202663	0.265	0.403	0.441	0	1
religion_some	202663	0.273	0.268	0.446	0	1
religion_reg	202663	0.462	0.329	0.499	0	1
class_upper	156427	0.176	0.189	0.381	0	1
class_middle	156427	0.370	0.355	0.483	0	1
class_working	156427	0.282	0.317	0.450	0	1
class_lower	156427	0.172	0.139	0.377	0	1
proud_bin1	206690	0.595	0.491	0.491	0	1
trust	207038	0.236	0.350	0.425	0	1
child_unselfish	212013	0.290	0.279	0.454	0	1
poor_lazy	99260	0.282	0.276	0.450	0	1
poor_unfair	99260	0.533	0.402	0.499	0	1
control_no	204380	0.080	0.046	0.272	0	1
control_yes	204380	0.269	0.240	0.444	0	1
success_work	111851	0.394	0.278	0.489	0	1
success_luck	111851	0.124	0.098	0.329	0	1

Appendix II –Variable Coding

Table B1. Variable coding

Question	
Variable	Coding
female	coded 1 of respondent reports sex “female”
age	-in WVS age is provided in variable *x003* -in EVS age is calculated: *age=year of survey – year born*
Education (WVS: x025): “What is the highest educational level that you have attained?”	
edu_no	coded 1 if respondent states: (1) 'Inadequately completed elementary education'
edu_prime	coded 1 if respondent states: (2) 'Completed (compulsory) elementary education' or (3) 'Incomplete secondary school: technical/vocational type/(Compulsory) elementary education and basic vocational qualification'
edu_somesec	coded 1 if respondent states: (4) 'Complete secondary school: technical/vocational type/Secondary, intermediate vocational qualification' or (5) 'Incomplete secondary: university-preparatory type/Secondary, intermediate general qualification'
edu_sec	coded 1 if respondent states: (6) 'Complete secondary: university-preparatory type/Full secondary, maturity level certificate' or (7) 'Some university without degree/Higher education - lower-level tertiary certificate'
edu_uni	coded 1 if respondent states: (8) 'University with degree/Higher education - upper-level tertiary certificate'
Education (EVS: v336): “What is the highest level you have completed in your education?”	
edu_no	coded 1 if respondent states: (0) 'Pre-primary education or none education'
edu_prime	coded 1 if respondent states: (1) 'Primary education or first stage of basic education'
edu_somesec	coded 1 if respondent states: (2) 'Lower secondary or second stage of basic education'
edu_sec	coded 1 if respondent states: (3) ' (Upper) secondary education' or (4) 'Post-secondary non-tertiary education'
edu_uni	coded 1 if respondent states: (5) 'First stage of tertiary education' or (6) 'Second stage of tertiary education'
Income (WVS: x047): “Here is a scale of incomes. We would like to know in what group your household is, counting all wages, salaries, pensions and other incomes that come in.”	
inc_quint1	coded 1 if respondent states: (1) "Lower step" or (2) "second step"
inc_quint2	coded 1 if respondent states: (3) "Third step" or (4) "Fourth step"
inc_quint3	coded 1 if respondent states: (5) "Fifth step" or (6) "Sixth step"
inc_quint4	coded 1 if respondent states: (7) "Seventh step" or (8) "Eighth step"
inc_quint5	coded 1 if respondent states: (9) "Ninth step" or (10) "Tenth step"
Income (EVS: v353): “Here is a list of incomes and we would like to know what group your household is, counting all wages, salaries, pensions and other incomes that come in.”	
inc_quint1	coded 1 if respondent states: (1) "Lower step" or (2) "second step" or (3) "Third step"
inc_quint2	coded 1 if respondent states: (4) " Fourth step" or (5) "Fifth step"
inc_quint3	coded 1 if respondent states: (6) " Sixth step" or (7) "Seventh step"
inc_quint4	coded 1 if respondent states: (8) or (9)
inc_quint5	coded 1 if respondent states: (10) or (11) or (12)
Marriage status (WVS: x007 EVS: v313) “Are you currently…”	
stat_married	coded 1 if respondent states: married or registered partnership
stat_single	coded 1 if respondent states: 'Single/Never married' or never registered

	partnership
stat_divorced	coded 1 if respondent states: separated or divorced
stat_widowed	coded 1 if respondent states: widowed
Labour market status (WVS: x028): Are you employed now or not? IF YES: About how many hours a week? If more than one job: only for the main job	
jobstat_full	coded 1 if respondent states: (1) 'Full time'
jobstat_part	coded 1 if respondent states: (2) 'Part time'
jobstat_self	coded 1 if respondent states: (3) 'Self employed'
jobstat_retired	coded 1 if respondent states: (4) 'Retired'
jobstat_wife	coded 1 if respondent states: (5) 'Housewife'
jobstat_student	coded 1 if respondent states: (6) 'Students'
jobstat_unemp	coded 1 if respondent states: (7) 'Unemployed'
jobstat_other	coded 1 if respondent states: (8) 'Other'
Labour market status (EVS: v337): Are you yourself gainfully employed at the moment or not? Please select from the card the employment status that applies to you	
jobstat_full	coded 1 if respondent states: (1) ’30 hours a week or more’
jobstat_part	coded 1 if respondent states: (2) ‘Less than 30 hours a week’
jobstat_self	coded 1 if respondent states: (3) 'Self employed'
jobstat_retired	coded 1 if respondent states: (5) 'Retired/pensioned'
jobstat_wife	coded 1 if respondent states: (6) 'Housewife not otherwise employed'
jobstat_student	coded 1 if respondent states: (7) 'Student'
jobstat_unemp	coded 1 if respondent states: (8) 'Unemployed'
jobstat_other	coded 1 if respondent states: (9) ‘Disabled’ or 10 'Other'
Religion (WVS: f028 EVS: v109): Apart from weddings, funerals and christenings, about how often do you attend religious services these days?	
religion_never	coded 1 if respondent states: 'Less often' or 'Never, practically never'
religion_some	coded 1 if respondent states: 'Only on special holy days/Christmas/Easter days' or 'Other specific holy days' or 'Once a year'
religion_reg	coded 1 if respondent states: 'More than once a week' or 'Once a week' or 'Once a month'
Fairness of the allocation mechanism (only WVS: e040): How would you place your views on this scale? 1 means you agree completely with the statement on the left; (10) means you agree completely with the statement on the right; and if your views fall somewhere in between, you can chose any number in between. (1) 'In the long run, hard work usually brings a better life' , … (10) 'Hard work doesn’t generally bring success - it’s more a matter of luck and connections'	
hard_work	numeric variable coded 1 to 10 as e040
success_work	coded 1 if respondent states: (1) 'In the long run, hard work usually brings a better life' or (2)
success_luck	coded 1 if respondent states: (10) 'Hard work doesn’t generally bring success - it’s more a matter of luck and connections' or (9)
Social Class (only WVS: x045): People sometimes describe themselves as belonging to the working class, the middle class, or the upper or lower class. Would you describe yourself as belonging to the: (1) 'Upper class' (2) 'Upper middle class' (3) 'Lower middle class' (4) 'Working class' (5) 'Lower class' Social Class (only WVS: x046): Socio-economic status of respondent. (1) 'AB Upper/Upper middle class', (2) 'C1 Middle, no manual workers', (3) 'C2 Middle, manual workers', (4) 'DE Manual workers/Unskilled, unemployed'	
class_upper	coded 1 if respondent states: (1) 'Upper class' or (2) 'Upper middle class'
class_middle	coded 1 if respondent states: (3) 'Lower middle class' or (2) 'C1 Middle, no manual workers'
class_working	coded 1 if respondent states: (4) 'Working class' or (3) 'C2 Middle, manual

	workers'
class_lower	coded 1 if respondent states: (5) 'Lower class' or (4) 'DE Manual workers / Unskilled, unemployed'
Social Identity (WVS: g006): How proud are you to be [Nationality]? Social Identity (EVS: v256): How proud are you to be a [COUNTRY] citizen?	
proud_bin1	coded 1 if respondent states: (1) 'Very proud'
Moral worth of the poor (WVS: e131): Why, in your opinion, are there people in this country who live in need? Here are two opinions: Which comes closest to your view? (1) 'Poor because of laziness and lack of will power', (2) 'Poor because of an unfair society', (3) 'Other answer'	
poor_lazy	coded 1 if respondent states: (1) 'Poor because of laziness and lack of will power'
poor_unfair	coded 1 if respondent states: (2) 'Poor because of an unfair society'
Moral worth of poor (WVS: e190 EVS: v67): Why are there people in this country who live in need? Here are four possible reasons. Which one reason do you consider to be most important? (1) 'Unlucky', (2) 'Laziness or lack of willpower', (3) 'Injustice in society', (4) 'Part modern progress', (5) 'None of these'	
poor_lazy	coded 1 if respondent states: (2) 'Laziness or lack of willpower'
poor_unfair	coded 1 if respondent states: (3) 'Injustice in society'
Subjective freedom and autonomy (WVS: a173; EVS: v65): Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where 1 means "none at all" and 10 means "a great deal" to indicate how much freedom of choice and control you feel you have over the way your life turns out.	
control	coded like original variable
control_no	coded 1 if respondent states: (1) "none at all" or (2)
control_yes	coded 1 if respondent states: (10) "a great deal" or non
Altruism (WVS: a041 EVS: v179): Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five.	
child_unselfish	coded 1 if respondent states: unselfishness
Trust (WVS: a165 EVS: v62): Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?	
trust	coded 1 if respondent states: (1) 'Most people can be trusted'
Child present (WVS: x011): Have you had any children? If yes, how many? Child present (EVS: v321): How many children do you have?	
child_present	coded 1 if respondent states: one or more

Income Inequality and Symbolic Values:
an explorative analysis

1. Introduction

There is an age old controversy between Weber's assertion that culture is the force underlying economic developments and Marx's postulate that the material conditions and especially the distribution of productive capital influence what people think, feel and do, their culture. Scholars of economics have long disregarded cultural aspects altogether. However, in recent years the question is shifting from "if" culture affects economics to "how" culture does so (Sen 2004). To do so, in empirical work culture is often narrowly defined to only embrace slow changing characteristics with a strong correlation across generations (e.g. Guiso et al. 2006, Fernandez 2011). These cultural traits are then independent of individual behaviour and accordingly exogenous to economic outcomes so that their effect can be empirically estimated. Methodological problems notwithstanding, the effects of some aspects of culture – like trust, religiosity or gender relations - on economic outcomes is increasingly well understood.

There is now a growing literature that aims to understand the co-evolution of individual traits that determine behaviour and economic outcomes. These individual characteristics (preferences, values, norms and beliefs) overall constitute important elements of a broader concept of culture.[1] Bisin and Verdier (2000, 2001) analyze determinants of the long term distribution of cultural traits if parents can consciously socialize their offspring. Corneo (2010) and Corneo and Jeanne (2009, 2010) introduce a theory of symbolic values to capture cultural and other non-pecuniary aspects of behaviour and derive "the prevailing norms of behavior" and their interaction with economic outcomes. Lindbeck and Nyberg (2006) claim that welfare state arrangements decrease work ethics. In this study it is assumed that economic outcomes like the distribution of wage income and the level of redistribution shape future preferences and attitudes.

Once the importance of cultural traits is established, it is natural to ask for their determinants. In the sequel, we present a systematic analysis of the relation between symbolic values, which arguably affect economic outcomes, and income inequality. Potential negative effects of income inequality will be discussed in section 2. Section 3 focuses on symbolic values, related concepts and their increasing importance in economic research. In section 4 we introduce the empirical strategy and the data used. Section 5 to 11 present results for different categories of symbolic values and provide reference to related literatures. Section 12 more deeply explores the influence of lagged inequality values. Section 13 finally concludes.

[1] The analysis of norms is not new to economics and has been a first step in the inclusion of social structure in economic models. Elster (1989) provides an overview over early developments.

2. Consequences of Inequality

While global inequality between countries is decreasing (Sala-i-Martin 2002), within country income inequality has been rising in most countries at least since the 1970s (Atkinson 2003, Smeeding 2005, Neckerman and Torche 2007). Traditionally, in economics income inequality has been perceived as an incentive for effort and risk-taking with a fundamental trade off between equality and economic efficiency (Okun, 1975). However, there is increasing evidence that economic inequality is associated with considerable costs for society. Unequal income distributions are related to a wide set of negative social outcomes. Among others, income inequality is attributed to negatively affect happiness (Alesina et al. 2004), public health (Kondo et al. 2009, Subramanian and Kawachi 2004), poverty (e.g. Ferreira and Ravallion 2008), crime (e.g. Kelly 2000), corruption (You and Khagram 2005) and the functioning of the democratic political system per se.[2] Birdsall (2001) differentiates in this context between "constructive" and "destructive" inequality.

In general, economic development and growth have been perceived as means to improve social outcomes and economists have for a long time focused on development and growth. Accordingly, considerable attention has been paid to the effect of income inequality on economic growth and development. Ehrhart (2009) provides a review on proposed explanations for possibly negative effects of initial income and wealth inequality on future growth rates. He names three purely economic mechanisms as opposed to politico-economic explanations: With a more uneven distribution of income, the domestic market is smaller and has a lower potential for economies of scale. Under imperfect capital markets increasing income inequality results in an increasing number of individuals, which do not have access to credit, leaving investment opportunities unused. An unequal distribution of wealth also results in rising fertility, thereby lowering investment in human capital. In the politico-economic perspective higher inequality of incomes might result in higher redistributive taxation and reduce political stability, both deterring private investment. According to Ehrhart (2009) only the argument on the raise in fertility and the increasing political instability find empirical support. Ferreira and Ravallion (2008) provide evidence for the effects of inequality on global poverty.

The importance of income inequality as a policy variable does not result from its instrumental character alone. Corneo and Fong (2008) empirically show that individuals attach considerable value to a fair (not necessarily equal) income distribution. Cordoba and

[2] Neckerman and Torche (2007) discuss causes and consequences of inequality. Wilkinson and Pickett (2009) present an extensive list of social problems associated with high income inequality.

Verdier (2008) calculate welfare gains and costs associated with economic growth and inequality and find that "the social burden of inequality is significant".

3. Symbolic Values

Following a theory developed by Corneo (2010) and Corneo and Jeanne (2009, 2010), symbolic values are understood as systems of valuations over sets of personal characteristics. Symbolic values as such do not restrict the choice set of possible behaviours for an economic agent, but they change associated payoffs. In addition to the material payoff associated with a given behaviour, there is also a symbolic payoff which might increase or decrease utility, contingent on whether actual behaviour is in line with an individual's value system, her symbolic values. The concept of symbolic values does have commonalities with internalized norms (Elster 1989), but is also related to the concept of identity (Akerlof and Kranton 2000).

In the present paper the empirical association between society-wide income inequality and symbolic values from seven different categories are analysed: work ethic, civism, obedience, honesty, tolerance, altruism and saving.[3] The importance of income inequality in shaping social outcomes has been discussed in the previous section. But why is it important to understand the effect of the income distribution for those seven categories of symbolic values? Why are these symbolic values important for economic research?

Work ethic is an important concept in the context of the discussion on the sustainability of welfare state arrangements. Civism is a sub-concept of social capital (Guiso et al. 2010) referring to individuals' disposition for free-riding or cooperative behaviour. Obedience captures respect for authority and rules. It facilitates coordination and reduces transaction costs. But it might also hinder innovation and creativity. Honesty as truth telling should be related to trust, by now an established concept in economics. Tolerance should allow a better use of resources, since there is no discrimination along outcome–irrelevant dimensions. Altruism again should reduce free-riding and facilitate cooperation. Finally, the determinants of saving, the economy wide saving rate as well as the individual propensity to save has always been a important question in economics.

There are sixteen different items with sufficient observations across time and space in the World Values Survey (WVS) capturing some form of symbolic value. Actual items will be introduced in the data section. Most of the items presented, have already been used in

[3] Category and item selection are driven by data availability and relevance in the literature. Presently the attention is restricted to measures of symbolic values from the World Values Survey with a sufficiently large number of observations.

applied empirical research and will be discussed in the result section with a separate focus on each individual item. In general the authors of respective publications do not refer to these measures as symbolic values and only use a small number of items, depending on their respective question at hand. Summary statistics for all symbolic values are found in the Appendix in Table A1. The original items are presented in Appendix II.

4. Data and Empirical Strategy

We begin with the description of the data sources and the selected sample. In the second subsection the stepwise empirical analysis will be laid out. Subsection three will introduced the control variables.

4.1 Sample and Data Source

The empirical analysis is restricted to the countries of the OECD. All individual level data is taken from the European Values Study (EVS 2010) and the World Values Survey (WVS 2009), together referred to as WVS. The World Values Survey Network provides a harmonized file of European – and World Values Surveys, extending over five survey waves carried out around 1981, 1990, 1995, 2000 and 2005.[4] In addition, the European Values Survey 2008 provides a sixth round of survey data.[5] In each wave the survey has been conducted over a period of about three years. The year is our time point of reference: estimating the effect of income inequality, we control for year fixed effects and the actual measure of income inequality is taken from the year when the survey actually has been conducted. However, since the survey has been administered over a time period of about three years in each wave, for ease of exposition survey waves will be used as time unit if descriptive statistics are presented.

Income inequality is measured using the Gini coefficient. That variable is taken from the Standardize World Income Inequality Database (SWIID, SWIID 2009).[6] The SWIID improves upon older collections of international income inequality datasets, like Deininger and Squire (1996) and the World Income Inequality Database from UN-WIDER[7] and aims at minimizing problems associated with secondary data on income inequality as discussed by Atkinson and Brandolini (2001). The SWIID provides Gini coefficients for gross- and net incomes. The data is compiled from different sources, using different reference units and income definitions, to calculate the Gini coefficient. However, the benchmark for

[4] See http://www.worldvaluessurvey.org
[5] http://www.europeanvaluesstudy.eu/
[6] Construction of the SWIID is explained in Solt (2009).
[7] http://www.wider.unu.edu/research/Database/

standardization is the Luxembourg Income Study (LIS) data which uses household adult-equivalent net and gross income (Solt 2009). Accordingly, the measure used is interpreted as the Gini coefficient of household adult-equivalent net and gross incomes, albeit most values are not calculated from that type of micro income data. Throughout the following, we will simply refer to this measure as the Gini of gross incomes or the Gini of net incomes or even shorter the gross-gini or net-gini.

There is a discussion in the literature whether the inequality of gross incomes or net incomes should by analysed. For example Bjørnskov (2008) argues that the inequality of gross incomes is of interest, since the distribution of net incomes might be biased through all kinds of welfare state institutions. On the contrary, Lorgelly and Lindley (2008) propose the use of measures of inequality of net incomes, since they provide "a more accurate reflection of economic status and purchasing power". Since income inequality of gross and net incomes might have differential effects, we repeat the analysis using the Gini of gross and net incomes. The actual values of the Gini coefficients of net and gross incomes for all OECD countries with observations in the WVS are shown in Table 1 and Table 2. There are 185,365 individual observations with valid information on income inequality in the respective country. On average, Slovakia (21.85) and Sweden (22.18) have the lowest, Turkey (43.53) and Mexico (47.57) the highest Gini of net incomes.

Table 1. Gini of household adult-equivalent net incomes by country and wave

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	28.10	.	30.80	.	31.57	.	30.36
Austria	.	25.10	.	25.91	.	26.67	25.93
Belgium	22.44	23.29	.	26.82	.	.	24.35
Canada	28.71	27.48	.	31.50	31.55	.	30.06
Czech Rep	.	21.18	25.30	25.24	.	25.27	23.68
Denmark	27.22	25.91	.	22.39	.	24.98	25.30
Estonia	.	22.48	36.17	35.86	.	31.96	31.32
Finland	.	20.95	21.94	24.60	25.69	.	23.70
France	28.80	27.12	.	26.75	27.94	28.00	27.68
Germany	.	26.55	26.28	26.51	28.53	29.96	27.36
Greece	.	.	.	33.56	.	33.53	33.54
Hungary	22.08	32.30	28.85	29.20	.	27.67	27.22
Iceland	.	.	.	.	.	28.63	28.63
Ireland	33.30	33.01	.	32.15	.	30.66	32.39
Israel	.	.	.	34.60	.	.	34.60
Italy	30.61	30.66	.	33.71	33.99	.	32.11
Japan	25.20	28.03	29.08	32.82	35.88	.	30.20
South-Korea	36.07	31.97	29.01	32.25	31.84	.	32.23
Luxembourg	.	.	.	26.35	.	28.42	27.59
Mexico	.	47.24	47.70	49.10	46.05	.	47.57
Netherlands	25.75	26.21	.	23.10	27.36	27.82	26.32
New Zealand	.	.	36.40	.	32.92	.	34.74
Norway	22.17	23.25	23.47	.	24.08	24.08	23.44

Poland	.	25.74	30.76	28.90	31.29	29.67	28.88
Portugal	.	31.01	.	35.43	.	35.90	34.18
Slovakia	.	17.64	23.76	23.71	.	22.99	21.85
Slovenia	.	21.79	24.43	24.90	24.50	25.37	24.38
Spain	31.12	30.30	35.30	33.65	31.44	31.28	31.76
Sweden	20.13	20.70	21.73	23.33	23.52	.	22.18
Switzerland	.	30.91	28.73	.	.	.	29.93
Turkey	.	43.68	43.41	43.54	.	.	43.53
UK	26.96	32.77	34.29	34.70	34.96	.	32.62
USA	30.36	33.53	36.26	37.04	36.87	.	34.33
Mean	27.93	28.04	32.10	31.72	31.48	28.50	29.96

The distribution of market incomes is lowest in Slovakia (32.51) and the Czech Republic (33.3) and highest in Mexico (49.02) and Portugal (54.5).

Table 2. Gini of household adult-equivalent gross incomes by country and wave

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	39.06	.	43.35	.	43.94	.	42.45
Austria	.	38.61	.	44.07	.	48.96	44.14
Belgium	25.76	31.32	.	45.39	.	.	35.10
Canada	37.90	38.89	.	43.04	42.93	.	41.10
Czech Rep	.	30.06	35.51	35.75	.	34.85	33.30
Denmark	48.69	48.76	.	46.80	.	50.08	48.79
Estonia	.	36.20	47.89	51.56	.	45.83	45.06
Finland	.	36.56	40.38	45.96	48.62	.	43.90
France	31.28	43.67	.	42.79	41.21	41.28	40.20
Germany	.	45.46	45.49	47.85	53.35	55.95	48.87
Greece	.	.	.	42.97	.	39.63	41.15
Hungary	27.76	40.66	43.57	43.63	.	40.24	37.72
Iceland	.	.	.	.	.	46.39	46.39
Ireland	47.33	44.74	.	39.79	.	39.27	43.17
Israel	.	.	.	45.08	.	.	45.08
Italy	39.78	43.72	.	44.30	45.29	.	43.25
Japan	36.04	35.77	37.31	40.24	41.70	.	38.26
South-Korea	41.57	38.44	36.50	37.97	38.03	.	38.50
Luxembourg	.	.	.	41.05	.	43.96	42.79
Mexico	.	49.28	50.33	48.96	47.01	.	49.02
Netherlands	38.26	40.48	.	38.72	42.66	43.68	41.08
New Zealand	.	.	43.48	.	45.95	.	44.66
Norway	38.69	41.65	45.54	.	44.85	44.85	43.20
Poland	.	34.34	42.86	36.80	46.08	42.67	39.97
Portugal	.	47.42	.	55.32	.	59.42	54.50
Slovakia	.	27.56	33.86	34.13	.	34.97	32.51
Slovenia	.	29.20	33.17	34.61	33.52	35.35	33.51
Spain	34.61	37.25	46.64	39.80	38.84	37.30	38.25
Sweden	48.76	45.97	46.08	45.61	45.89	.	46.28
Switzerland	.	39.61	41.52	.	.	.	40.47
Turkey	.	45.40	44.19	42.04	.	.	43.12
UK	41.49	46.62	47.98	47.97	47.75	.	46.29
USA	40.48	42.68	46.18	47.08	46.95	.	44.21
Mean	38.11	39.47	43.29	43.05	44.50	43.75	41.93

To control for the influence of macro-conditions other than income inequality, the log of per capita GDP, the unemployment rate and growth rate of real GDP are taken into account. Respective values by country and wave are presented in table A2 – A6 in Appendix I. For robustness checks, further macro variables, like the ratio of foreign direct investment to GDP, the ratio of imports and exports to GDP, the inflation rate and the ratio of social expenditures to GDP, have also been included in the estimations. The relevant macro data is provided by the OECD and the World Bank. Since the data slightly differs by source, estimations where undertaken with macro data from the OECD (OECD 2007, 2011) and from the World Bank Development Indicators (WDI 2011) separately. All statistical meaningful estimates have the same algebraic sign, independent whether OECD- or WDI data is used. So for ease of exposition, only the estimates with the OECD data are presented in the results section below.

4.2. Empirical Strategy

Since we analyse sixteen symbolic values from very different domains, there is no unifying theory that could guide the empirical analysis. In order to find robust conditional correlations, a large set of different specifications is estimated. Only results that are robust to a wide variation of control variables are considered meaningful. In general there is no claim of causality, albeit we sometimes talk about "the effect of inequality" on some dependent variable. In a latter step of the analysis, instrumental variable (IV) estimation that allows for a causal interpretation is employed.

The effect of income inequality on the national level on individual attitudes is estimated using a set of stepwise more complex specifications or models. A set of six models is called a configuration. The basic configuration is progressively augmented to extend the analysis and assure robustness of results. For binary dependent variables a logit model is estimated. The specifications in the basic configuration are defined by

(1) $$V^*_{ict} = \alpha + \beta Gini_{ct} + \gamma_c C_c + \lambda' X_{ict} + \varepsilon_{ict}$$

$$\Pr(V_{ict} = 1) = \Pr(V^*_{ict} > 0).$$

If dependent variables have an ordinal coding, ordinal logit estimation will be employed. The symbolic value *V* of individual *i* at time *t* in country *c* is explained by the Gini coefficient at time t in country c, a set of individual control variables X and country fixed effect C. To control for unobserved heterogeneity across countries, country dummies are included in all estimations. Year dummies are also included in the final configuration to control for time fixed effects. As shown by Moulton (1990), the inclusion of macro variables in the estimation

of micro data can bias standard errors. Accordingly, all standard errors are corrected for clustering at the country level.

The six models in the basic configuration become stepwise more complex. i.e. $\boldsymbol{X}$ includes increasingly more elements. The control variables in the first specification M1 are gender, age and age squared, all unambiguously exogenous traits. In each model additional socio-economic controls are included, ever increasing the potential for endogeneity. In the second model educational achievements are included. Model three adds dummies for quintiles of individual household income. Then dummies for the family status and the status in the labour market are included. Model five then adds dummies for the frequency of attendance to religious services, which are substituted in model six with dummies for community size. These control variables will be discussed in detail in the next subsection.

The basic configuration augmented for macro controls, i.e. the log of per capita GDP, the unemployment rate and the real growth rate of GDP from the OECD, is called the Basic plus Macro configuration (Basic + M). The configuration with WDI macro controls is not shown. In the third configuration year fixed effects are added to the second configuration (Basic + Macro + Year FE). These three configurations constitute the basis for the analysis of income inequality on symbolic values. If the estimated coefficients for the Gini-variable in at least five models in each configuration consistently have the same sign, this will be interpreted as a weak indication for a statistical relation. If in addition results are significant, the statistical relation will be taken to present meaningful conditional correlation.

In a first step, the coefficients for the Gini of gross incomes and the Gini of net incomes are estimated. After analysing these contemporaneous values of income inequality, the focus is shifted to historical experiences of income inequality. In the second step, the Gini coefficient of gross and net incomes ten years ago – what we call ten year lags - will be used to explain the respective symbolic value. As a third step, twenty year lags are employed. To complete the historical perspective, we calculate the mean Gini coefficient when the respondent was young, i.e. aged seventeen to twenty-five. Experiences during this age bracket are said to exert an especially strong influence on future attitudes of individuals.[8] In a fifth step, the potential problem of endogeneity between income inequality and symbolic values is tackled. To this end, the Gini coefficient is instrumented with the population ratio of those aged 40 to 59 to the whole working age population (15 to 69). The respective variable will be called *mature*. The idea is that "large mature working-age cohorts are associated with lower aggregate inequality, and large young-adult cohorts are associated with higher aggregate

[8] See Giuliano and Spilimbergo (2009).

inequality" (Higgins and Williamson 2002).[9] The simple correlation across all countries and waves between mature and the Gini of net incomes is -0.33. For the Gini of gross incomes the correlation with mature is only 0.01. More insight provides the correlation coefficients between the gross- or net-gini and *mature* across countries, for each survey wave separately, as shown in Table 3. The correlation across countries between the Gini of net incomes and *mature* is negative and high for most waves (column 2), indicating that *mature* is a suitable instrument. The correlation coefficients between the Gini of gross incomes and *mature* (column 3) are much smaller and in contrast to the proposed relation even positive for wave 6. Accordingly, *mature* is a better suited to instrument the Gini of net incomes than the Gini of gross incomes. For lack of a better instrument *mature* will also be used to instrument for the Gini of gross incomes. Model six with information on townsize, will not be considered in these IV-regressions, since the maximum likelihood estimator does not converge for most symbolic values.

Table 3. Correlation between Gini measure and *mature* by survey wave

wave	*mature-net*	mature-gross
1	-0.20	-0.19
2	-0.39	-0.17
3	-0.76	-0.39
4	-0.72	-0.17
5	-0.71	-0.03
6	-0.13	0.41
Total	-0.48	-0.09

Instrumental variables estimation is performed using the STATA module "iv-probit", which performs maximum likelihood estimation if one continuous variable is endogenous. Symbolic value measures with ordinal information are recoded to binary variables with a cut-off at "1" and "5", if there are five categories and "2" and "9", if there are ten response categories.

There are three configurations, with six models each, four different measures of income inequality (contemporary, ten year lags, twenty year lags, aged 18-25), instrumental variable estimation, and income measures over two different income concepts (gross- and net income). Accordingly, there are up to 180 estimates for each symbolic value analysed. To prevent further cluttering, only the estimates for the respective Gini values will be reported.

[9] This IV-strategy has also been used by Leigh (2006) analysing the effect of inequality on trust.

4.3. Control Variables

Due to different coding, the EVS 2008 wave had to be harmonized with the already harmonized 1980-2005 WVS data. We will shortly discuss the coding of all control variables. The dummy *female* indicates a female respondent. Age (*age*) is directly taken from the harmonized WVS data, but is calculated with the help of the birth year for the EVS 2008. In the WVS data income is coded in ten categories with different category boundaries for each country. In contrast the EVS 2008 provides twelve income categories with the same categories for all countries. Income is harmonized by approximating income quintiles (*inc_quint1- inc_quint5*) in each data set. The third quintile is used as reference category. We use five categories for educational attainment. These are coded from seven categories in the original data. The five categories are: no education (*edu_no*), primary education (*edu_prime*), some secondary education *(edu_somesec)*, secondary education (*edu_sec*) and university education (*edu_uni*). No education is used as reference category. The legal status is coded in four dummies, indicating single (*stat_single*), married (*stat_married*), divorced (*stat_divorced*) or widowed (*stat_widowed*) with single being the reference category. To control for labour market status, eight *jobstat*-dummies are used, which capture full and part time employment (*jobstat_full, jobstat_part*), self-employment (*jobstat_self*), being retired (*jobstat_retired*), student (*jobstat_student*), housewife (*jobstat_house*), unemployed (*jobstat_unemp*) or other (*jobstat_other*). Full employment is used as reference. Religiosity is captured by the frequency of attendance to religious services. Regular attendance (*religion_reg*) refers to attendance once a month or more often, *religion_some* indicates attendance at special or specific holidays or once a year and the reference category *religion_never* is associated with attendance less often than once a year or never. The townsize-dummies capture community size, with *townsize_1*, i.e. less than 2000 inhabitants, being the reference category. Summary statistics for macro variables are presented in Table 4, individual controls in Table 5. The reference category for a set of dummy variables is set in bold.

Table 4. Summary statistics of macro control variables

Variable	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*
ln_pcgdp_oecd	190259	9.90	0.44	8.52	11.08
ln_pcgdp_wdi	195360	10.00	0.45	8.72	11.20
unemp_oecd	180103	7.39	3.88	0.46	22.96
unemp_wdi	163559	7.46	3.78	0.60	22.70
gdp_growth_oecd	176361	2.48	3.16	-11.61	10.65
gdp_growth_wdi	193454	1.82	3.95	-14.57	10.65
mature	174900	0.358	0.059	0.000	0.432

Table 5. Summary statistics of micro control variables

Variable	*Obs.*	*Mean*	*Std. Dev.*	*Min*	*Max*
female	196296	0.529	0.499	0	1
age	192281	44.379	17.321	14	108
age_sqr	192281	2269.536	1674.580	196	11664
edu_no	131700	0.061	0.240	0	1
edu_prime	131700	0.242	0.428	0	1
edu_somesec	131700	0.230	0.421	0	1
edu_sec	131700	0.303	0.459	0	1
edu_uni	131700	0.161	0.368	0	1
inc_quint1	170456	0.186	0.389	0	1
inc_quint2	170456	0.272	0.445	0	1
inc_quint3	170456	0.229	0.420	0	1
inc_quint4	170456	0.168	0.374	0	1
inc_quint5	170456	0.145	0.352	0	1
stat_single	194392	0.232	0.422	0	1
stat_married	194392	0.623	0.485	0	1
stat_divorced	194392	0.068	0.252	0	1
stat_widowed	194392	0.076	0.264	0	1
jobstat_full	190515	0.413	0.492	0	1
jobstat_part	190515	0.076	0.265	0	1
jobstat_self	190515	0.067	0.250	0	1
jobstat_retired	190515	0.186	0.389	0	1
jobstat_wife	190515	0.124	0.330	0	1
jobstat_student	190515	0.059	0.236	0	1
jobstat_unemp	190515	0.056	0.230	0	1
jobstat_other	190515	0.019	0.136	0	1
religion_none	188182	0.403	0.491	0	1
religion_some	188182	0.271	0.444	0	1
religion_reg	188182	0.326	0.469	0	1
townsize_1	137667	0.176	0.381	0	1
townsize_2	137667	0.098	0.297	0	1
townsize_3	137667	0.090	0.286	0	1
townsize_4	137667	0.101	0.302	0	1
townsize_5	137667	0.131	0.337	0	1
townsize_6	137667	0.099	0.298	0	1
townsize_7	137667	0.157	0.364	0	1
townsize_8	137667	0.143	0.350	0	1

5. Income Inequality and Work Ethic

Work ethic describes an attitude towards work. It may be assumed that from two otherwise identical individuals, the one with higher work ethic is more productive, less often absent and better motivated. There are five items in the WVS that proxy an individual's work ethic. Each item will now be presented separately. After introducing respective items that catch a dimension of work ethic, their use in the literature will be reviewed and estimation results presented.

5.1. Child-hardwork

Child-hardwork is a binary variable indicating whether parents think that teaching their children hard work is important. Hard work is an element in a list of ten characteristics, from which respondents choose up to five. The survey item is:

> *Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five.*
> *Hard Work; 0 'Not mentioned' 1 'Important'*[10]

5.1.1. Literature

Lindbeck and Nyberg (2006) and Corneo (2011) use *child-hardwork* to analyze whether more generous welfare state arrangements might have negative long term effects on work ethic. Lindbeck and Nyberg (2006) show a detrimental incentive effect. Corneo (2011) emphasizes the insurance effect of welfare states in the context of human capital accumulation and shows that this effect can offset the negative incentive effect, resulting in higher growth rates in economies with larger welfare states. Maystre et al. (2009) use child-hardwork and the other nine characteristics in the list of desirable child characteristics to construct a measure of cultural distance, which is shown to relate to the trade openness of the economy. The authors show that trade induces cultural convergence.

5.1.2 Descriptive Statistics

Table 6A depicts the fraction of respondents per country and survey wave which find that hard work is an important child quality. There are 193,933 observations for *child-hardwork*. The sample size for each estimated model varies, ranging from 174,934 to 70,572 cases.

[10] There are further symbolic values taken from this list of child qualities. Below we will not repeat the full question but rather only name the child quality under consideration.

Table 6A. Mean of *child-hardwork* by country and wave

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	0.119	.	0.359	.	0.477	.	0.332
Austria	.	0.143	.	0.090	.	0.129	0.120
Belgium	0.325	0.343	.	0.425	.	0.367	0.367
Canada	0.202	0.350	.	0.506	0.526	.	0.420
Czech Rep	.	0.838	0.789	0.739	.	0.740	0.785
Denmark	0.021	0.024	.	0.021	.	0.045	0.029
Estonia	.	0.920	0.871	0.812	.	0.828	0.854
Finland	.	0.059	0.147	0.115	0.153	0.076	0.114
France	0.334	0.529	.	0.504	0.623	0.489	0.491
Germany	.	0.149	0.099	0.226	0.275	0.171	0.180
Greece	.	.	.	.	.	0.289	0.289
Hungary	0.285	0.704	0.337	0.714	.	0.759	0.569
Iceland	0.239	0.779	.	0.443	.	0.456	0.460
Ireland	0.235	0.276	.	0.365	.	0.601	0.346
Italy	0.128	0.236	.	0.361	0.393	0.388	0.298
Japan	0.154	0.306	0.244	0.271	0.324	.	0.258
Luxembourg	.	.	.	.	.	0.511	0.511
Mexico	.	0.233	0.360	0.287	0.243	.	0.290
Netherlands	0.118	0.138	.	0.137	0.294	0.210	0.181
New Zealand	.	.	0.372	.	0.407	.	0.387
Norway	0.038	0.066	0.107	.	0.127	0.113	0.089
Poland	.	0.867	0.160	0.864	0.211	0.826	0.597
Portugal	.	0.691	.	0.672	.	0.695	0.687
South-Korea	0.400	0.643	0.622	0.716	0.726	.	0.630
Slovakia	.	0.831	0.703	0.753	.	0.859	0.794
Slovenia	.	0.320	0.329	0.292	0.338	0.325	0.321
Spain	0.405	0.367	0.644	0.451	0.626	0.206	0.421
Sweden	0.038	0.052	0.066	0.041	0.102	0.095	0.063
Switzerland	.	0.375	0.431	.	0.266	0.258	0.333
Turkey	.	0.725	0.616	0.724	0.787	1.000	0.758
UK	0.149	0.282	0.371	0.378	0.443	0.442	0.344
USA	0.263	0.489	0.534	0.595	0.616	.	0.468
Mean	0.217	0.412	0.406	0.456	0.406	0.447	0.403

5.1.3. Basic Results for contemporary inequality data

As can be seen in Table 6B, *gini-net* has a mostly positive, weakly significant relation with *child-hardwork*. The coefficients for the Gini of gross incomes are all insignificant but mostly positive.

Table 6B. Coefficients of contemporary Gini-net for *child-hardwork*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.039	0.005	0.009	0.039	0.037	0.041
	(0.94)	(0.06)	(0.11)	(0.60)	(0.56)	(0.36)
B + Macro	0.046	0.003	0.009	0.063	0.062	0.061
	(1.33)	(0.05)	(0.11)	(1.01)	(0.97)	(0.72)
B + M + Year FE	0.060*	0.070	0.100	0.125+	0.128+	0.082
	(2.01)	(1.04)	(1.40)	(1.73)	(1.71)	(0.70)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 6C. Coefficients of contemporary Gini-gross for *child-hardwork*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.020	-0.003	-0.002	0.007	0.007	0.012
	(0.88)	(-0.05)	(-0.03)	(0.13)	(0.14)	(0.20)
B + Macro	0.013	0.001	0.004	0.027	0.027	0.027
	(0.66)	(0.01)	(0.06)	(0.63)	(0.64)	(0.78)
B + M + Year FE	0.012	-0.001	0.003	0.025	0.026	0.028
	(0.63)	(-0.02)	(0.08)	(0.70)	(0.72)	(0.57)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

5.1.4. Results for lagged inequality data

For lagged values, results are similar for the Gini of gross and net incomes. For ten year lags there is a significant negative relation. In contrast, for twenty year lags coefficients are significant positive. For now we only note the changing sign for different historical dimensions. In Section 12 this phenomenon will be further explored.[11]

Table 6D. Coefficients of ten-year-lags of Gini-net for *child-hardwork*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.004	0.001	-0.011	-0.023	-0.025	-0.023
	(0.18)	(0.05)	(-0.61)	(-0.88)	(-0.95)	(-0.62)
B + Macro	-0.023	-0.011	-0.029	-0.061	-0.064	-0.129
	(-0.86)	(-0.26)	(-0.66)	(-0.99)	(-1.05)	(-1.53)
B + M + Year FE	-0.014	-0.103*	-0.143**	-0.151**	-0.151**	-0.182***
	(-0.42)	(-2.18)	(-2.83)	(-2.88)	(-2.90)	(-3.83)

Table 6E. Coefficients of ten-year-lags of Gini-gross for *child-hardwork*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.001	-0.011	-0.018	-0.029	-0.029	-0.029
	(-0.05)	(-0.76)	(-1.24)	(-1.16)	(-1.17)	(-0.95)
B + Macro	-0.009	-0.025	-0.038	-0.074	-0.074	-0.129^{+}
	(-0.46)	(-0.71)	(-1.08)	(-1.38)	(-1.40)	(-1.74)
B + M + Year FE	-0.013	-0.090	-0.112^{+}	-0.124*	-0.126*	-0.146*
	(-0.35)	(-1.60)	(-1.93)	(-2.06)	(-2.08)	(-2.01)

Table 6F. Coefficients of twenty-year-lags of Gini-net for *child-hardwork*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.023	0.026	0.017	0.010	0.007	0.067
	(-0.62)	(0.54)	(0.35)	(0.18)	(0.13)	(1.15)
B + Macro	0.039	0.067^{+}	0.062^{+}	0.072*	0.072*	0.143*
	(1.08)	(1.85)	(1.68)	(2.36)	(2.28)	(2.36)
B + M + Year FE	0.042	0.118^{+}	0.122^{+}	0.130^{+}	0.130^{+}	0.190*
	(0.90)	(1.76)	(1.79)	(1.91)	(1.92)	(2.10)

Table 6G. Coefficients of twenty-year-lags of Gini-gross for *child-hardwork*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.017	0.026	0.013	0.017	0.014	0.045
	(-1.05)	(0.95)	(0.49)	(0.59)	(0.46)	(1.61)
B + Macro	0.007	0.046^{+}	0.035	0.050^{+}	0.050^{+}	0.096^{+}
	(0.65)	(1.95)	(1.58)	(1.71)	(1.67)	(1.83)
B + M + Year FE	0.017	0.075^{+}	0.076^{+}	0.077^{+}	0.078^{+}	0.144**
	(0.74)	(1.90)	(1.90)	(1.90)	(1.91)	(2.63)

*statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

[11] For successive tables the notes of the last table apply to all preceding ones.

5.1.5. Effect of Inequality when aged eighteen to twenty-five

The mean value of income inequality over the years when agents have been aged eighteen to twenty-five has a mostly positive, often significant relation with *child-hardwork*. Effects are similar for the Gini of gross and net incomes.

Table 6H. Coefficients of Gini-net when aged 18-25 for *child-hardwork*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.013	0.002	0.002	-0.000	-0.001	0.003
	(1.38)	(0.31)	(0.33)	(-0.08)	(-0.23)	(0.58)
B + Macro	0.017**	0.008+	0.009+	0.005	0.005	0.006
	(3.28)	(1.66)	(1.91)	(1.22)	(1.09)	(1.28)
B + M + Year FE	0.017***	0.005	0.006	0.005	0.005	0.005
	(3.39)	(0.83)	(1.22)	(1.02)	(0.92)	(0.89)

Table 6J. Coefficients of Gini-gross when aged 18-25 for *child-hardwork*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.016+	0.005	0.004	0.002	0.001	0.006
	(1.70)	(0.76)	(0.65)	(0.30)	(0.21)	(1.11)
B + Macro	0.020***	0.010*	0.010*	0.006+	0.006	0.008+
	(3.92)	(2.23)	(2.24)	(1.67)	(1.56)	(1.66)
B + M + Year FE	0.020***	0.007	0.007	0.006	0.006	0.007
	(3.97)	(1.28)	(1.50)	(1.38)	(1.30)	(1.25)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

5.1.6. Instrumental Variable Estimation

Instrumenting the Gini of net incomes with the ratio of the mature working population to the whole population at working age does result in mostly negative, but insignificant coefficients (Table 6K). However, the only estimation where the Wald test of exogeneity (*p_exog*) indicates a problem of endogeneity, the first model in the basic configuration, has a significant positive relation between the Gini of net income and *child-hardwork*. If the Gini of gross incomes is instrumented with the same instrument (Table 6L), similar results are obtained. The most elementary model, only controlling for age and gender, results in a significantly positive relation between the Gini of gross incomes and *child-hardwork*.

Table 6K. Coefficients of Net-Gini for *child-hardwork*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.255***	0.123	0.201	0.112	0.092
	(3.58)	(0.40)	(0.49)	(0.69)	(0.57)
p_exog	0.012	0.706	0.638	0.612	0.699
B + Macro	0.272	-0.550	-0.435	-0.194	-0.216
	(1.56)	(-0.41)	(-0.31)	(-0.23)	(-0.24)
p_exog	0.194	0.741	0.779	0.795	0.790
B + M + Year FE	0.542	-0.138	-0.228	-0.233	-0.200
	(1.40)	(-0.18)	(-0.17)	(-0.13)	(-0.15)
p_exog	0.285	0.812	0.831	0.866	0.838

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Coefficients of Net-Gini from iv-probit estimations on the sample of OECD countries

Table 6L. Coefficients of Gross-Gini for *child-hardwork*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.141***	0.051	0.126	0.129	0.099
	(3.30)	(0.36)	(0.40)	(0.37)	(0.38)
p_exog	0.010	0.727	0.692	0.725	0.721
B + Macro	0.172+	-0.149	-0.154	-0.115	-0.122
	(1.83)	(-0.61)	(-0.41)	(-0.22)	(-0.24)
p_exog	0.086	0.549	0.689	0.811	0.797
B + M + Year FE	0.229	0.075	0.079	0.058	0.066
	(1.62)	(0.21)	(0.24)	(0.22)	(0.23)
p_exog	0.209	0.839	0.821	0.878	0.869

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

In sum, the results for the relation between *child-hardwork* and income inequality are not conclusive, but do point to a positive association. While some estimates are negative, especially those for ten year lags, most estimates for historical and contemporaneous Gini values are significantly positive. Higher values of income inequality tend to come with a higher importance of hard work as a child quality.

5.2. Child-determination

The variable *child-determination* is a binary dependent variable indicating whether respondents find "determination and perseverance" an important child quality. An individual with more perseverance will ceteris paribus produce output with higher quality. Given that there are decreasing marginal returns, perseverance might flip to "perfectionism", resulting in inefficient high investment of effort in quality.

5.2.1. Literature

This item is used by Gorodnichenko and Roland (2011) who disentangle the cultural dimensions most important for economic growth. They find that Hofstede's (2001) index of individualism best predicts growth rates of per capita GDP. To test for robustness, a set of other cultural indexes are constructed. Interestingly, the authors use *child-determination* and *child-thrift* (see section 9.2. below) to construct an index they name "hard work and thrift", however not using the *child-hardwork*-item described above.

5.2.2. Descriptive Statistic

Table 7A depicts the fraction of respondents per country and survey wave which find that determination is an important child quality. There are 189,993 observations for *child-determination*. The sample size for each estimated model varies, ranging from 172,089 to 69,207 cases.

Table 7A: Mean of *child-determination* by country and wave

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	0.180	.	0.361	.	0.508	.	0.358
Austria	.	0.390	.	0.355	.	0.306	0.350
Belgium	0.206	0.390	.	0.453	.	0.335	0.366
Canada	0.215	0.377	.	0.475	0.481	.	0.407
Czech Rep	.	0.315	0.350	0.279	.	0.330	0.315
Denmark	0.115	0.305	.	0.320	.	0.271	0.250
Estonia	.	0.508	0.490	0.501	.	0.454	0.484
Finland	.	0.391	0.444	0.510	0.646	0.478	0.503
France	0.183	0.389	.	0.393	0.543	0.413	0.381
Germany	.	0.513	0.410	0.483	0.625	0.479	0.504
Greece	.	.	.	.	.	0.496	0.496
Hungary	0.171	0.124	0.623	0.300	.	0.293	0.271
Iceland	0.120	0.751	.	0.291	.	0.290	0.339
Ireland	0.100	0.256	.	0.285	.	0.430	0.245
Italy	0.180	0.291	.	0.342	0.442	0.339	0.313
Japan	0.247	0.589	0.615	0.690	0.672	.	0.562
Luxembourg	.	.	.	.	.	0.436	0.436
Mexico	.	0.371	0.421	0.353	0.363	.	0.382
Netherlands	0.161	0.320	.	0.350	0.372	0.349	0.309
New Zealand	.	.	0.393	.	0.491	.	0.436
Norway	0.115	0.328	0.355	.	0.422	0.328	0.310
Poland	.	0.274	.	0.340	0.257	0.408	0.328
Portugal	.	0.195	.	0.271	.	0.254	0.240
South-Korea	0.267	0.311	0.357	0.424	0.450	.	0.365
Slovakia	.	0.286	0.305	0.251	.	0.266	0.276
Slovenia	.	0.420	0.486	0.539	0.632	0.459	0.506
Spain	0.127	0.218	0.212	0.289	0.295	0.244	0.225
Sweden	0.168	0.328	0.316	0.295	0.491	0.322	0.317
Switzerland	.	.	0.446	.	0.676	0.354	0.492
Turkey	.	0.203	0.212	0.224	0.370	1.000	0.292
UK	0.182	0.293	0.353	0.402	0.384	0.368	0.328
USA	0.147	0.352	0.411	0.446	0.390	.	0.324
Mean	0.166	0.344	0.386	0.365	0.479	0.375	0.357

5.2.3. Basic Results from contemporary inequality data

The relation between income inequality and *child-determination* is similar for the Gini of gross- and net incomes. All coefficients are positive and sometimes significant. Higher income inequality today is associated with more importance of determination in children.

Table 7B. Coefficients of contemporary Gini-net for *child-determination*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.065**	0.025	0.016	0.026	0.028	0.003
	(2.61)	(1.22)	(0.81)	(1.29)	(1.38)	(0.13)
B + Macro	0.040*	0.027	0.014	0.027	0.029	0.002
	(2.15)	(1.17)	(0.67)	(1.09)	(1.17)	(0.08)
B + M + Year FE	0.038+	0.027	0.032+	0.034+	0.036*	0.019
	(1.88)	(1.28)	(1.76)	(1.93)	(2.02)	(0.59)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 7C. Coefficients of contemporary Gini-gross for *child-determination*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.048***	0.017	0.012	0.012	0.012	0.003
	(4.14)	(1.14)	(0.83)	(0.83)	(0.82)	(0.18)
B + Macro	0.021*	0.019	0.011	0.013	0.013	0.002
	(2.07)	(1.31)	(0.84)	(1.02)	(0.95)	(0.16)
B + M + Year FE	0.024**	0.017	0.012	0.012	0.011	0.003
	(3.12)	(1.45)	(1.10)	(1.11)	(0.96)	(0.27)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

5.2.4. Results from lagged inequality data

As can be seen in Table 7D and Table 7E, the coefficients for ten year lags of net-gini and gross-gini are negative and mostly significant. Accordingly, there is a significant negative relation between *child-determination* and income inequality ten years ago.[12]

Table 7D. Coefficients of ten-year-lags of Gini-net for *child-determination*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.002	-0.030*	-0.026+	-0.027+	-0.028*	-0.013
	(0.15)	(-2.23)	(-1.80)	(-1.87)	(-1.96)	(-1.22)
B + Macro	-0.037**	-0.036*	-0.029*	-0.034*	-0.037*	0.003
	(-2.68)	(-2.51)	(-2.08)	(-2.34)	(-2.51)	(0.09)
B + M + Year FE	-0.031*	-0.048*	-0.059**	-0.062**	-0.064**	-0.062**
	(-2.02)	(-2.29)	(-2.96)	(-3.04)	(-3.20)	(-3.15)

Table 7E. Coefficients of ten-year-lags of Gini-gross for *child-determination*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.003	-0.026*	-0.024*	-0.024*	-0.025*	-0.020*
	(0.36)	(-2.27)	(-2.00)	(-1.96)	(-2.05)	(-2.06)
B + Macro	-0.022*	-0.026+	-0.023	-0.027+	-0.029+	-0.017
	(-2.21)	(-1.81)	(-1.64)	(-1.78)	(-1.89)	(-0.75)
B + M + Year FE	-0.020+	-0.032*	-0.033*	-0.034*	-0.036*	-0.024
	(-1.81)	(-2.02)	(-2.07)	(-2.16)	(-2.19)	(-1.56)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Estimation results are more ambiguous for twenty year lags (Table 7F and Table 7G). There are positive and negative coefficients, all but one insignificant. For twenty year lags, no systematic statistical association can be identified.

Table 7F. Coefficients of twenty-year-lags of Gini-net for *child-determination*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.072*	-0.048	-0.048	-0.062	-0.064	-0.031
	(-1.99)	(-0.96)	(-0.91)	(-1.12)	(-1.10)	(-0.53)
B + Macro	-0.020	-0.003	0.002	0.005	0.005	0.019
	(-1.04)	(-0.17)	(0.10)	(0.31)	(0.29)	(0.89)
B + M + Year FE	-0.027	0.018	0.015	0.020	0.020	0.019
	(-1.16)	(0.96)	(0.80)	(1.09)	(1.07)	(0.88)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

[12] For successive tables the notes of the last table apply to all preceding ones.

Table 7G. Coefficients of twenty-year-lags of Gini-gross for *child-determination*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.028	-0.035	-0.031	-0.036	-0.037	-0.023
	(-1.57)	(-1.04)	(-0.88)	(-0.98)	(-0.97)	(-0.66)
B + Macro	-0.008	-0.008	-0.002	-0.003	-0.003	-0.000
	(-0.82)	(-0.42)	(-0.14)	(-0.19)	(-0.22)	(-0.01)
B + M + Year FE	-0.005	0.012	0.009	0.008	0.008	0.014
	(-0.39)	(0.97)	(0.73)	(0.64)	(0.60)	(0.99)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

5.2.5. Effect of Inequality when aged eighteen to twenty-five

The Gini of net incomes exhibits similar effects as the Gini of gross incomes. In contrast to the levels of income inequality ten years ago, income inequality when young has a positive, mostly insignificant relation with *child-determination*.

Table 7H. Coefficients of Gini-net when aged 18-25 for *child-determination*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.005	0.005	0.003	0.003	0.002	0.005
	(0.71)	(1.49)	(0.74)	(0.80)	(0.52)	(0.94)
B + Macro	-0.002	0.005	0.004	0.004	0.002	0.002
	(-0.51)	(1.50)	(0.88)	(0.82)	(0.57)	(0.51)
B + M + Year FE	0.000	0.010*	0.007	0.007	0.006	0.004
	(0.06)	(2.30)	(1.41)	(1.35)	(1.18)	(0.91)

Table 7J. Coefficients of Gini-gross when aged 18-25 for *child-determination*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.003	0.004	0.002	0.002	0.002	0.004
	(0.40)	(1.14)	(0.59)	(0.63)	(0.42)	(0.74)
B + Macro	-0.004	0.004	0.003	0.003	0.002	0.001
	(-1.00)	(1.05)	(0.64)	(0.61)	(0.40)	(0.27)
B + M + Year FE	-0.002	0.009*	0.006	0.006	0.005	0.003
	(-0.42)	(2.04)	(1.29)	(1.25)	(1.13)	(0.82)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

5.2.6. Instrumental Variable Estimation

If the Gini of net incomes is instrumented, all estimated coefficients are positive. The first estimate of the basic configuration, the only estimation that indicates a problem of endogeneity, is strongly significant. For all other estimates, endogeneity does not seem much of a problem, since the Wald test for exogeneity can never be rejected. If instead the gross-gini is instrumented, some coefficients are negative.

Table 7K. Coefficients of Net-Gini for *child-determination*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.237***	0.280	0.234	0.090	0.071
	(3.87)	(0.35)	(0.35)	(0.50)	(0.45)
p_exog	0.010	0.753	0.741	0.675	0.726
B + Macro	0.168	0.400	0.235	0.124	0.096
	(1.12)	(0.29)	(0.24)	(0.32)	(0.28)
p_exog	0.357	0.799	0.825	0.778	0.819
B + M + Year FE	0.166	0.001	0.130	0.204	0.190
	(0.77)	(0.00)	(0.27)	(0.22)	(0.28)
p_exog	0.538	0.931	0.821	0.845	0.805

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 7L. Coefficients of Gross-Gini for *child-determination*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.131***	0.120	0.148	0.108	0.080
	(3.71)	(0.42)	(0.32)	(0.27)	(0.27)
p_exog	0.006	0.703	0.772	0.804	0.807
B + Macro	0.109	0.083	0.067	0.076	0.057
	(1.10)	(0.65)	(0.38)	(0.27)	(0.24)
p_exog	0.321	0.571	0.730	0.809	0.834
B + M + Year FE	0.071	0.000	-0.038	-0.042	-0.053
	(0.75)	(0.00)	(-0.46)	(-0.54)	(-0.56)
p_exog	0.574	0.892	0.583	0.533	0.533

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

The empirical evidence provided, does not allow a strong statement about the association between child-determination and the level of income inequality as measured by the Gini coefficient. There is a positive tendency for contemporaneous values. Higher levels of income inequality come with a higher probability that parents find it important to teach their children perseverance and determination. For historical values results are ambiguous.

5.3. Money-work

Money-work evaluates the individual's attitude toward the relation between income and work.

> *Do you agree or disagree with the following statements? It is humiliating to receive money without having to work for it 5 'Strongly agree' 4 'Agree' 3 'Neither agree or disagree' 2 'Disagree' 1 'Strongly disagree'*

The original item has been recoded, so that higher values indicate a stronger work ethic, i.e. strong agreement with the statement is coded '5', strong disagreement '1'

5.3.1. Literature

Minkov and Blagoev (2009) use this item in a factor analysis, to analyse the relation between culture and economic growth. Balan and Knack (2011) refer to *money-work* but do not use it in their analysis, since they find no correlation with economic performance or individual ability.

5.3.2. Descriptive Statistic

Table 8A depicts the mean response by country and survey wave for *money-work*. There is a maximum of 93,803 observations for *money-work*. The sample size for each specification varies, ranging from 80,027 to 55,933 cases.

Table 8A. Mean of *money-work* by country and wave

country\wave	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	.	3.283	.	3.283
Austria	.	.	3.365	3.365
Belgium	3.070	.	3.086	3.077
Canada	3.306	3.150	.	3.224
Czech Rep	3.326	.	3.402	3.363
Denmark	2.888	.	2.771	2.818
Estonia	3.390	.	3.487	3.449
Finland	3.084	3.105	3.080	3.089
France	3.093	.	3.151	3.121
Germany	3.011	3.143	3.420	3.192
Greece	.	.	3.776	3.776
Hungary	3.484	.	3.544	3.521
Iceland	3.090	.	2.910	3.008
Ireland	3.248	.	3.419	3.332
Italy	3.807	3.663	3.762	3.759
Japan	3.380	3.367	.	3.374
Luxembourg	.	.	3.509	3.509
Mexico	3.344	3.255	.	3.299
Netherlands	2.643	.	2.952	2.830
Norway	.	3.356	3.216	3.286
Poland	3.719	3.596	3.356	3.533
Portugal	3.427	.	3.698	3.592
South-Korea	3.793	3.648	.	3.720
Slovakia	3.474	.	3.465	3.470
Slovenia	3.453	3.284	3.320	3.348
Spain	3.210	3.142	2.963	3.121
Sweden	3.038	2.893	3.176	3.039
Switzerland	.	3.209	3.024	3.116
Turkey	4.242	4.270	4.292	4.273
UK	3.017	.	3.248	3.157
USA	3.022	3.287	.	3.157
Mean	3.298	3.341	3.372	3.337

5.3.3. Basic Results from contemporary inequality data

The Gini of net incomes (Table 8B) has a positive relation with *money-work*, significant at levels of 5% to 10%. The Gini of gross incomes also exhibits a positive relation, but is statistically insignificant. Accordingly, there is a positive conditional correlation between the level of income inequality and the likelihood to find receiving money without working for it humiliating.

Table 8B. Coefficients of contemporary Gini-net for *money-work*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.050^{+}	0.056*	0.056*	0.059*	0.057*	0.060*
	(1.95)	(2.07)	(1.97)	(2.04)	(1.99)	(2.12)
B + Macro	0.056^{+}	0.064*	0.065*	0.068*	0.065*	0.071*
	(1.91)	(2.18)	(2.15)	(2.19)	(2.11)	(2.43)
B + M + Year FE	0.043^{+}	0.049*	0.050*	0.052*	0.050*	0.033
	(1.94)	(2.19)	(2.03)	(2.07)	(2.03)	(0.93)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 8C. Coefficients of contemporary Gini-gross for *money-work*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.020	0.023	0.020	0.022	0.022	0.019
	(0.96)	(1.06)	(0.86)	(0.93)	(0.92)	(0.89)
B + Macro	0.020	0.023	0.023	0.024	0.024	0.019
	(0.74)	(0.85)	(0.79)	(0.84)	(0.82)	(0.69)
B + M + Year FE	0.005	0.009	0.010	0.012	0.012	0.005
	(0.23)	(0.36)	(0.45)	(0.52)	(0.52)	(0.21)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

5.3.4. Results from lagged inequality data

In contrast to contemporary values, ten year lags of the Gini of net- and gross incomes exhibit a negative, but mostly insignificant relation with *money-work* (see Table 8D and 8E). If we look at twenty year lags instead (Table 8F and 8G), there is a positive effect of income inequality on *money-work*. For the twenty year lagged Ginis of net incomes, coefficients are significantly positive. How can we explain the different algebraic sign for contemporary values and twenty year lags on the one hand and ten year lags on the other hand? This question will be tackled with more scrutiny in Section 12.

Table 8D. Coefficients of ten-year-lags of Gini-net for *money-work*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.001	0.001	-0.003	-0.003	-0.002	-0.006
	(-0.14)	(0.13)	(-0.43)	(-0.31)	(-0.26)	(-0.73)
B + Macro	0.003	-0.003	-0.010	-0.011	-0.009	-0.036^{+}
	(0.19)	(-0.22)	(-0.60)	(-0.65)	(-0.53)	(-1.94)
B + M + Year FE	-0.007	-0.015	-0.014	-0.013	-0.010	-0.002
	(-0.30)	(-0.72)	(-0.45)	(-0.43)	(-0.33)	(-0.04)

Table 8E. Coefficients of ten-year-lags of Gini-gross for *money-work*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.002	0.000	-0.003	-0.002	-0.002	-0.004
	(-0.37)	(0.08)	(-0.73)	(-0.54)	(-0.52)	(-0.81)
B + Macro	-0.004	-0.005	-0.011	-0.012	-0.011	-0.028**
	(-0.40)	(-0.61)	(-1.37)	(-1.43)	(-1.37)	(-2.96)
B + M + Year FE	-0.026*	-0.029*	-0.032**	-0.031*	-0.031*	-0.034*
	(-2.10)	(-2.54)	(-2.63)	(-2.46)	(-2.40)	(-2.53)

Table 8F. Coefficients of twenty-year-lags of Gini-net for *money-work*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.033*	0.032*	0.030*	0.032*	0.032*	0.032^{+}
	(2.38)	(2.33)	(2.04)	(2.05)	(2.14)	(1.90)
B + Macro	0.038*	0.038*	0.035*	0.036*	0.036*	0.065***
	(2.27)	(2.31)	(2.32)	(2.44)	(2.43)	(4.41)
B + M + Year FE	0.060**	0.061**	0.062**	0.066**	0.064**	0.060*
	(3.08)	(3.20)	(3.02)	(3.15)	(3.02)	(2.25)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 8G. Coefficients of twenty-year-lags of Gini-gross for *money-work*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.011	0.014	0.013	0.014	0.014	0.007
	(0.89)	(1.23)	(1.09)	(1.17)	(1.22)	(0.60)
B + Macro	0.004	0.006	0.006	0.006	0.006	0.004
	(0.28)	(0.44)	(0.44)	(0.46)	(0.48)	(0.16)
B + M + Year FE	0.011	0.015	0.017	0.020	0.019	-0.004
	(0.42)	(0.61)	(0.72)	(0.80)	(0.74)	(-0.13)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

5.3.5. Effect of Inequality when aged eighteen to twenty-five

For all specifications, for both, the Gini of net and gross incomes, estimated coefficients are all positive, but insignificant. The experience of inequality when young, measured by the mean of the Gini coefficient in the years when the respondent was aged eighteen to twenty-five years, has a positive effect on *money-work*.

Table 8H. Coefficients of Gini-net when aged 18-25 for *money-work*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.006	0.006	0.004	0.005	0.007	0.005
	(0.87)	(0.90)	(0.58)	(0.72)	(0.96)	(0.73)
B + Macro	0.005	0.004	0.002	0.003	0.003	0.001
	(0.68)	(0.61)	(0.31)	(0.42)	(0.40)	(0.14)
B + M + Year FE	0.005	0.004	0.002	0.002	0.002	0.001
	(0.63)	(0.53)	(0.24)	(0.35)	(0.34)	(0.10)

Table 8J. Coefficients of Gini-gross when aged 18-25 for *money-work*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.008	0.007	0.005	0.006	0.008	0.007
	(1.14)	(1.10)	(0.82)	(0.96)	(1.16)	(1.06)
B + Macro	0.007	0.006	0.004	0.005	0.005	0.004
	(0.98)	(0.81)	(0.55)	(0.67)	(0.62)	(0.53)
B + M + Year FE	0.006	0.005	0.003	0.004	0.004	0.003
	(0.91)	(0.69)	(0.44)	(0.55)	(0.52)	(0.44)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

5.3.6. Instrumental Variable Estimation

To instrument the Gini of net incomes with *mature*, two binary dependent variables are constructed and the full set of specifications is estimated for each of them. The variable *money-work-agree* indicates full agreement with the survey question. Resulting estimation coefficients are ambiguous. For the binary variable indicating strong disagreement (*money-work-disagree*) positive estimation coefficients result. The Wald test for exogeneity indicates that endogeneity is not an issue for the Gini of net incomes. No further conclusion should be drawn from these IV-estimates.

Table 8K. Coefficients of Net-Gini for *money-work-agree*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.355	x			
	(0.03)	x			
p_exog	0.979	x			
B + Macro	0.111	0.101	0.450	0.499	0.458
	(0.09)	(0.06)	(0.10)	(0.10)	(0.09)
p_exog	0.955	0.972	0.931	0.937	0.941
B + M + Year FE	-0.019	-0.020	-0.009	-0.008	-0.015
	(-0.21)	(-0.22)	(-0.10)	(-0.09)	(-0.15)
p_exog	0.599	0.571	0.665	0.664	0.635

Table 8L. Coefficients of Net-Gini for *money-work-disagree*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	x				
	x				
p_exog	x				
B + Macro	x				
	x				
p_exog	x				
B + M + Year FE	0.151	0.162	0.177	0.181	0.194
	(0.86)	(0.87)	(0.84)	(0.83)	(0.86)
p_exog	0.270	0.272	0.277	0.287	0.280

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Net-Gini from iv-probit estimations on the sample of OECD countries

The results obtained from IV-estimations employing the Gini of gross incomes, are ambiguous for agreement and insignificantly negative for disagreement. The Wald test for exogeneity is never rejected so that endogeneity does not seem a problem. No further conclusions are drawn form these IV- result.

Table 8M. Coefficients of Gross-Gini for *money-work-agree*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.007	0.014	-0.020	-0.020	-0.016
	(0.12)	(0.24)	(-0.20)	(-0.19)	(-0.16)
p_exog	0.923	0.986	0.760	0.757	0.787
B + Macro	-0.006	-0.003	-0.030	-0.031	-0.026
	(-0.08)	(-0.05)	(-0.30)	(-0.30)	(-0.26)
p_exog	0.795	0.794	0.663	0.657	0.686
B + M + Year FE	0.046	0.044	0.021	0.020	0.031
	(0.20)	(0.21)	(0.12)	(0.11)	(0.16)
p_exog	0.851	0.853	0.915	0.926	0.890

Table 8N. Coefficients of Gross-Gini for *money-work-disagree*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.127	-0.131	-0.164	-0.172	-0.180
	(-1.44)	(-1.46)	(-0.99)	(-1.01)	(-0.99)
p_exog	0.283	0.271	0.425	0.420	0.420
B + Macro	-0.135	-0.136	-0.159	-0.161	-0.168
	(-1.31)	(-1.34)	(-1.03)	(-1.05)	(-1.03)
p_exog	0.303	0.290	0.399	0.396	0.394
B + M + Year FE	-0.292	-0.295	-0.295	-0.299	-0.320
	(-0.56)	(-0.59)	(-0.61)	(-0.61)	(-0.61)
p_exog	0.634	0.612	0.607	0.612	0.615

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

Overall, there is some indication of a positive relation between *money-work* and income inequality. Positive estimation results are obtained for contemporaneous values of the Gini coefficients, for twenty year lags and for the mean values in the young age of the respondent. Accordingly, I conclude that higher income inequality comes with a higher probability that respondents find receiving money without working for it humiliating.

5.4. Work-duty

This item evaluates whether respondents think that work is a duty toward society. As such its understanding is ambivalent. On the one hand, the question can refer to a self-sustained life through work without the aid of society. On the other hand, the question could refer to an obligation to provide public goods to society, like e.g. volunteering.

> *Do you agree or disagree with the following statements? Work is a duty towards society 5 'Strongly agree' 4 'Agree' 3 'Neither agree or disagree' 2 'Disagree' 1 'Strongly disagree'*

Values from the original variable again have been recoded, so that higher values indicate stronger agreement.

5.4.1. Literature

Balan and Knack (2011) analyse the correlation between human capital and morality and the effect on economic performance and use *work-duty* as well as *child-tolerance* and *child-unselfish* as proxies for morality. In their analysis of work values and redistribution Cervellati et al. (2010) take the agreement of about 60% of respondents in the OECD to *money-work* as an argument for the importance of work values.

5.4.2. Descriptive Statistic

In Table 9A the mean of *work-duty* by country and wave is depicted. There are a total of 93,965 observations for *work-duty*. The sample size for each estimated model varies from 80,179 to 56,050 cases.

Table 9A. Mean of *work-duty* by country and wave

country\wave	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	.	3.491	.	3.491
Austria	.	.	3.888	3.888
Belgium	3.581	.	3.848	3.700
Canada	3.622	3.623	.	3.623
Czech Rep	3.645	.	3.499	3.575
Denmark	3.750	.	3.991	3.895
Estonia	3.505	.	3.480	3.489

Finland	3.486	3.643	3.503	3.543
France	3.455	.	3.858	3.649
Germany	3.576	3.749	3.762	3.696
Greece	.	.	3.738	3.738
Hungary	3.830	.	3.788	3.804
Iceland	3.435	.	3.411	3.424
Ireland	3.538	.	3.753	3.644
Italy	3.760	3.802	3.826	3.791
Japan	3.640	3.726	.	3.679
Luxembourg	.	.	4.066	4.066
Mexico	3.876	3.953	.	3.916
Netherlands	3.387	.	3.731	3.596
Norway	.	4.082	4.211	4.146
Poland	3.930	3.792	3.328	3.642
Portugal	4.143	.	4.117	4.127
South-Korea	3.666	3.724	.	3.695
Slovakia	3.682	.	3.680	3.681
Slovenia	3.934	3.924	3.875	3.907
Spain	3.598	3.703	3.628	3.632
Sweden	3.456	3.536	3.660	3.529
Switzerland	.	3.710	3.784	3.747
Turkey	4.284	4.208	4.225	4.235
UK	3.290	.	3.695	3.536
USA	3.473	3.522	.	3.498
Mean	3.652	3.757	3.788	3.730

5.4.3. Basic Results from contemporary inequality data

There is a positive and significant relation between the Gini of net incomes and *work-duty* (Table 9B). In contrast, there is no obvious effect for the Gini of gross incomes; there are positive and negative coefficients and none is significant (Table 9C). While there is no effect of pre-tax inequality, higher values of after tax income inequality come with a higher probability that respondents agree that work is a duty toward society.

Table 9B. Coefficients of contemporary Gini-net for *work-duty*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.066***	0.076**	0.079**	0.082**	0.079**	0.082**
	(3.32)	(3.04)	(3.11)	(3.03)	(2.81)	(3.11)
B + Macro	0.071***	0.084***	0.085***	0.088***	0.084***	0.091***
	(4.75)	(4.81)	(4.51)	(4.29)	(3.97)	(4.36)
B + M + Year FE	0.058*	0.065*	0.033	0.033	0.029	0.008
	(2.24)	(2.39)	(1.26)	(1.25)	(1.07)	(0.20)

Table 9C. Coefficients of contemporary Gini-gross for *work-duty*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.012	0.017	0.021	0.023	0.023	0.017
	(0.56)	(0.75)	(0.83)	(0.88)	(0.83)	(0.67)
B + Macro	0.009	0.016	0.022	0.023	0.023	0.017
	(0.36)	(0.56)	(0.75)	(0.79)	(0.75)	(0.58)
B + M + Year FE	-0.017	-0.013	-0.017	-0.015	-0.016	-0.025
	(-0.54)	(-0.40)	(-0.60)	(-0.52)	(-0.55)	(-0.97)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

5.4.4. Results from lagged inequality data

Table 9D and 9E depict estimated coefficients for the ten year lags of the Gini of net and gross incomes. The estimates for the Gini of net incomes are all negative but mostly insignificant. The coefficients estimated for the Gini of gross incomes are ambiguous: positive for the basic configuration and negative if macro controls are included. For twenty year lags (Table 9F and 9G) most coefficients are negative. Estimates for the Gini of net incomes are all insignificant, for the Gini of gross incomes results are significant if macro controls are included. Overall there is a tendency for a negative relation between historical values of income inequality and *work-duty*. The evidence however is inconclusive.

Table 9D. Coefficients of ten-year-lags of Gini-net for *work-duty*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.011	-0.007	-0.009	-0.008	-0.007	-0.013
	(-1.05)	(-0.60)	(-0.84)	(-0.76)	(-0.62)	(-1.28)
B + Macro	-0.029	-0.038	-0.036	-0.036	-0.034	-0.045
	(-1.23)	(-1.53)	(-1.36)	(-1.39)	(-1.30)	(-1.35)
B + M + Year FE	-0.044^{+}	-0.056*	-0.027	-0.026	-0.023	-0.016
	(-1.71)	(-2.10)	(-1.17)	(-1.12)	(-0.99)	(-0.68)

Table 9E. Coefficients of ten-year-lags of Gini-gross for *work-duty*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.003	0.007	0.006	0.007	0.007	0.006
	(0.28)	(0.74)	(0.66)	(0.73)	(0.78)	(0.60)
B + Macro	-0.005	-0.006	-0.000	-0.001	-0.000	0.000
	(-0.36)	(-0.44)	(-0.03)	(-0.07)	(-0.02)	(0.01)
B + M + Year FE	-0.030^{+}	-0.034*	-0.021	-0.021^{+}	-0.021^{+}	-0.026^{+}
	(-1.74)	(-2.03)	(-1.56)	(-1.67)	(-1.68)	(-1.72)

Table 9F. Coefficients of twenty-year-lags of Gini-net for *work-duty*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.006	0.005	0.004	0.004	0.003	-0.004
	(0.37)	(0.26)	(0.23)	(0.25)	(0.19)	(-0.28)
B + Macro	-0.031	-0.030	-0.035	-0.035	-0.037	-0.025
	(-1.15)	(-1.11)	(-1.32)	(-1.31)	(-1.41)	(-0.88)
B + M + Year FE	-0.011	-0.006	-0.009	-0.008	-0.010	-0.036
	(-0.45)	(-0.22)	(-0.36)	(-0.30)	(-0.41)	(-0.91)

Table 9G. Coefficients of twenty-year-lags of Gini-gross for *work-duty*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.001	0.002	0.001	0.002	0.002	-0.011
	(-0.06)	(0.08)	(0.03)	(0.07)	(0.09)	(-0.48)
B + Macro	-0.049*	-0.046*	-0.048*	-0.047*	-0.048*	-0.067*
	(-2.38)	(-2.15)	(-2.26)	(-2.26)	(-2.30)	(-2.46)
B + M + Year FE	-0.038	-0.030	-0.028	-0.025	-0.027	-0.065*
	(-1.47)	(-1.33)	(-1.31)	(-1.22)	(-1.29)	(-2.14)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

5.4.5. Effect of Inequality when aged eighteen to twenty-five

The mean level of income inequality, experienced by respondents when aged eighteen to twenty-five, results in positive coefficients. The positive statistical relation with *work-duty*

is significant only for the estimates of the *gross-gini*. The positive relation of inequality levels when young with *work-duty* contradicts the findings from lagged variables.

Table 9H. Coefficients of Gini-net when aged 18-25 for *work-duty*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.007	0.007	0.007	0.008	0.009	0.007
	(1.02)	(0.93)	(1.00)	(1.10)	(1.15)	(0.96)
B + Macro	0.010	0.008	0.010	0.010	0.010	0.010
	(1.34)	(1.11)	(1.23)	(1.36)	(1.28)	(1.27)
B + M + Year FE	0.011	0.009	0.011	0.011	0.011	0.010
	(1.46)	(1.21)	(1.37)	(1.50)	(1.43)	(1.24)

Table 9J. Coefficients of Gini-gross when aged 18-25 for *work-duty*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.010	0.009	0.010	0.010	0.011	0.010
	(1.47)	(1.34)	(1.38)	(1.49)	(1.49)	(1.39)
B + Macro	0.013+	0.010	0.012	0.012+	0.011	0.012+
	(1.80)	(1.49)	(1.61)	(1.74)	(1.61)	(1.76)
B + M + Year FE	0.014*	0.011	0.012+	0.013+	0.012+	0.011+
	(1.97)	(1.62)	(1.78)	(1.92)	(1.80)	(1.71)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

5.4.6. Instrumental Variable Estimation

Results from IV-estimations are negative if the variable, indicating full agreement with *work-duty*, is used as a dependent variable. For the binary variable indicating strong disagreement, estimation results have a positive sign. However, all estimates are insignificant. Also, the Wald test for exogeneity indicates that there seems to be no problem of endogeneity.

Table 9K. Coefficients of Net-Gini for *work-duty-agree*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	x				
	x				
p_exog	x				
B + Macro	-0.552	-0.679	-0.831	-0.869	x
	(-0.10)	(-0.09)	(-0.16)	(-0.16)	x
p_exog	0.929	0.946	0.922	0.929	x
B + M + Year FE	-0.005	0.011	-0.037	-0.034	-0.045
	(-0.06)	(0.14)	(-0.40)	(-0.38)	(-0.47)
p_exog	0.395	0.472	0.390	0.415	0.385

Table 9L. Coefficients of Net-Gini for *work-duty-disagree*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	x				
	x				
p_exog	x				
B + Macro	1.013	1.072	1.016	x	
	(0.41)	(0.51)	(0.36)	x	
p_exog	0.896	0.913	0.906	x	
B + M + Year FE	0.096	0.087	0.085	0.074	0.092
	(0.76)	(0.67)	(0.65)	(0.59)	(0.69)
p_exog	0.522	0.564	0.652	0.699	0.634

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Coefficients of Net-Gini from iv-probit estimations on the sample of OECD countries

Employing the Gini of gross incomes in the IV-estimations, there is a mostly positive relation between levels of inequality and the probability of strong agreement that work is a duty toward society, and an according negative relation with strong disagreement. Again, all results are insignificant and the Wald test for exogeneity can not be rejected.

Table 9M. Coefficients of Gross-Gini for *work-duty-agree*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.056	0.061	0.114	0.113	0.121
	(0.85)	(0.88)	(0.79)	(0.80)	(0.80)
p_exog	0.554	0.563	0.544	0.546	0.536
B + Macro	0.031	0.029	0.071	0.069	0.077
	(0.55)	(0.49)	(0.83)	(0.81)	(0.85)
p_exog	0.786	0.863	0.623	0.636	0.601
B + M + Year FE	0.016	-0.013	0.066	0.062	0.080
	(0.10)	(-0.08)	(0.32)	(0.30)	(0.33)
p_exog	0.930	0.918	0.768	0.782	0.755

Table 9N. Coefficients of Gross-Gini for *work-duty-disagree*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.150	-0.156	-0.193	-0.197	-0.209
	(-1.06)	(-1.09)	(-0.80)	(-0.82)	(-0.82)
p_exog	0.294	0.292	0.447	0.446	0.445
B + Macro	-0.118	-0.115	-0.133	-0.130	-0.141
	(-1.05)	(-1.10)	(-0.86)	(-0.88)	(-0.89)
p_exog	0.281	0.279	0.393	0.397	0.388
B + M + Year FE	-0.188	-0.163	-0.140	-0.122	-0.150
	(-0.49)	(-0.50)	(-0.49)	(-0.47)	(-0.48)
p_exog	0.600	0.581	0.582	0.593	0.593

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

There are some contradictory results for the relation of *work-duty* and income inequality. For contemporary values of income inequality a positive relation is found. Income inequality when young also results in positive estimates. Lagged values are ambiguous, but mostly negative. IV-estimates indicate a negative relation for after tax inequality and a positive one for income inequality before taxes and transfers.

5.5. Work-unemp

This item is again only an imperfect measure of work ethic. Basically, an attitude toward welfare state generosity is evaluated. But to some extend there is also a general attitude toward work involved. The original variable has been recoded, so that higher values indicate higher work ethics.

> *Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall*

somewhere in between, you can choose any number in between. Sentences: People who are unemployed should have the right to refuse a job they do not want. vs. People who are unemployed should have to take any job available or lose their unemployment benefits. 1 'Unemployed have a right to refuse a job'…10 'Unemployed should take any job'

5.5.1. Literature

The *work-unemp* item is somehow related to the *work-duty* item. However, the present item directly refers to the design of institutions regulating unemployment benefits. As such it might be of interest for the analysis of welfare state institutions. However, the author did not succeed in identifying relevant contributions using this variable in their analysis.

5.5.2. Descriptive Statistic

Table 10A shows the mean of *work-unemp* by country and wave. There are 102,622 observations for *work-unemp*. The sample size for each estimated model varies, ranging from 90,666 to 39,921 cases.

Table 10A. Mean of w*ork-unemp* by country and wave

country\wave	*1989-1993*	*1999-2004*	*2008-2009*	Mean
Austria	7.415	7.185	6.848	7.146
Belgium	6.288	6.049	6.602	6.292
Canada	6.162	.	.	6.162
Czech Rep	6.294	6.334	6.944	6.478
Denmark	6.427	6.128	6.072	6.190
Estonia	4.235	4.601	5.754	5.011
Finland	7.529	5.840	6.109	6.308
France	6.596	6.501	5.336	6.097
Germany	6.107	6.677	6.882	6.479
Greece	.	5.497	5.850	5.699
Hungary	5.769	6.671	7.025	6.579
Iceland	6.951	6.313	6.368	6.512
Ireland	5.717	5.435	6.170	5.770
Italy	7.285	7.585	7.459	7.441
Japan	5.884	.	.	5.884
Luxembourg	.	7.003	6.807	6.890
Mexico	6.189	.	.	6.189
Netherlands	6.045	5.722	6.497	6.151
Norway	7.549	.	6.807	7.212
Poland	6.000	6.806	6.300	6.296
Portugal	6.464	6.369	6.678	6.527
South-Korea	6.428	.	.	6.428
Slovakia	5.597	6.344	6.834	6.244
Slovenia	7.927	7.396	7.308	7.515
Spain	6.320	6.560	5.853	6.259
Sweden	7.155	7.044	6.545	6.901
Switzerland	.	.	6.443	6.443

Turkey	.	.	6.058	6.058
UK	5.513	6.046	6.908	6.183
USA	6.330	.	.	6.330
Mean	6.353	6.433	6.505	6.427

5.5.3. Basic Results from contemporary inequality data

Results for contemporary levels are ambiguous, both, for the Gini of gross and the Gini of net incomes. Coefficients are mostly negative in the specifications of configuration one without macro controls. If macro controls are included, coefficients are positive. Anyway, the statistical relation is insignificant for all estimated coefficients.

Table 10B. Coefficients of contemporary Gini-net for *work-unemp*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.008	-0.016	-0.021	-0.011	-0.011	-0.020
	(0.45)	(-0.29)	(-0.37)	(-0.19)	(-0.19)	(-0.36)
OECD	-0.018	0.008	0.007	0.017	0.017	0.010
	(-0.74)	(0.22)	(0.20)	(0.49)	(0.48)	(0.27)
B + M + Year FE	0.022	0.050	0.066	0.071	0.071	0.064
	(0.98)	(1.29)	(1.46)	(1.63)	(1.62)	(1.46)

Table 10C. Coefficients of contemporary Gini-gross for *work-unemp*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.000	-0.002	-0.009	-0.004	-0.004	-0.008
	(0.04)	(-0.08)	(-0.37)	(-0.15)	(-0.14)	(-0.33)
B + Macro	-0.011	-0.001	-0.002	0.004	0.004	0.000
	(-1.24)	(-0.05)	(-0.10)	(0.22)	(0.23)	(0.01)
B + M + Year FE	0.003	0.016	0.014	0.017	0.017	0.015
	(0.26)	(0.65)	(0.58)	(0.70)	(0.70)	(0.64)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

5.5.4. Results from lagged inequality data

The results for lagged values of income inequality are similar to the results for contemporaneous levels in as much as the estimates have different signs, contingent on whether macro controls are included or not. As can be seen from Table 10D to Table 10G, the results are mostly positive and significant for the basic configuration but negative if macro controls are included. While the negative results are insignificant for the Gini of net incomes, the estimates for the Gini of gross incomes with macro controls are mostly significant. Since each configuration is a priori equally true, no conclusion can be drawn from the estimation results of lagged income inequality.

Table 10D. Coefficients of ten-year-lags of Gini-net for *work-unemp*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.036*	0.033*	0.032*	0.033*	0.033*	0.030+
	(2.53)	(2.28)	(2.01)	(2.09)	(2.08)	(1.90)
B + Macro	0.041	-0.010	-0.009	-0.012	-0.011	-0.007
	(1.47)	(-0.35)	(-0.23)	(-0.33)	(-0.29)	(-0.18)
B + M + Year FE	0.022	-0.015	-0.030	-0.029	-0.028	-0.026
	(0.78)	(-0.61)	(-0.94)	(-0.93)	(-0.88)	(-0.81)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 10E. Coefficients of ten-year-lags of Gini-gross for *work-unemp*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.012	0.017^{+}	0.017^{+}	0.018^{+}	0.018^{+}	0.017^{+}
	(1.33)	(1.95)	(1.73)	(1.91)	(1.87)	(1.91)
B + Macro	-0.006	-0.054**	-0.066**	-0.063**	-0.062**	-0.058*
	(-0.29)	(-3.24)	(-3.02)	(-2.83)	(-2.77)	(-2.37)
B + M + Year FE	-0.011	-0.056**	-0.065**	-0.063*	-0.063*	-0.056*
	(-0.70)	(-2.92)	(-2.69)	(-2.55)	(-2.50)	(-2.12)

Table 10F. Coefficients of twenty-year-lags of Gini-net for *work-unemp*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.065*	0.101***	0.115***	0.114***	0.112***	0.108***
	(2.47)	(6.54)	(6.16)	(5.58)	(5.50)	(5.83)
B + Macro	0.049^{+}	-0.088	-0.050	-0.046	-0.049	-0.032
	(1.83)	(-0.98)	(-0.52)	(-0.50)	(-0.52)	(-0.34)
B + M + Year FE	0.025	-0.095	-0.062	-0.053	-0.055	-0.042
	(0.75)	(-1.03)	(-0.64)	(-0.55)	(-0.58)	(-0.45)

Table 10G. Coefficients of twenty-year-lags of Gini-gross for *work-unemp*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.023	0.054*	0.051*	0.053*	0.052*	0.049*
	(1.04)	(2.46)	(2.35)	(2.43)	(2.40)	(2.40)
B + Macro	0.016	-0.052	-0.076*	-0.075*	-0.075*	-0.062^{+}
	(1.08)	(-1.58)	(-2.51)	(-2.38)	(-2.38)	(-1.84)
B + M + Year FE	-0.000	-0.054^{+}	-0.079**	-0.077*	-0.077*	-0.065*
	(-0.01)	(-1.70)	(-2.66)	(-2.55)	(-2.55)	(-1.99)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

5.5.5. Effect of Inequality when aged eighteen to twenty-five

The mean value of the Gini coefficient when the respondent was aged 18 and 25 has a negative relation with *work-unemp* if macro controls are included and a positive one without. This is true for the Gini of net and gross incomes. Estimates are mostly insignificant. No unambiguous conclusion can be derived from these results.

Table 10H. Coefficients of Gini-net when aged 18-25 for *work-unemp*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.015**	0.004	0.004	0.003	0.003	0.002
	(2.98)	(0.73)	(0.66)	(0.52)	(0.60)	(0.40)
B + Macro	0.005	-0.010	-0.010	-0.012^{+}	-0.011^{+}	-0.012^{+}
	(0.89)	(-1.61)	(-1.53)	(-1.77)	(-1.70)	(-1.80)
B + M + Year FE	0.002	-0.010	-0.010	-0.012^{+}	-0.011^{+}	-0.012^{+}
	(0.40)	(-1.62)	(-1.55)	(-1.81)	(-1.73)	(-1.85)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 10J. Coefficients of Gini-gross when aged 18-25 for *work-unemp*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.017***	0.006	0.005	0.004	0.004	0.004
	(3.60)	(1.04)	(0.90)	(0.73)	(0.79)	(0.63)
B + Macro	0.008	-0.007	-0.008	-0.010	-0.010	-0.011
	(1.45)	(-1.19)	(-1.21)	(-1.60)	(-1.54)	(-1.63)
B + M + Year FE	0.006	-0.007	-0.008	-0.010	-0.010	-0.011^{+}
	(0.99)	(-1.20)	(-1.23)	(-1.63)	(-1.57)	(-1.67)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

5.5.6. Instrumental Variable Estimation

For the Gini of net incomes, the IV-estimation does not produce any meaningful results. For most models and in most configurations the maximum likelihood estimator does not converge. No conclusion is possible.

Table 10K. Coefficients of Net-Gini for *work-unemp-refuse*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.392	x			
	(-0.57)	x			
p_exog	0.645	x			
B + Macro	x				
	x				
	x				
B + M + Year FE	0.635	x			
	(0.32)	x			
p_exog	0.804	x			

Table 10L. Coefficients of Net-Gini for *work-unemp-take*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.164	x			
	(-0.39)	x			
p_exog	0.780	x			
B + Macro	x				
	x				
	x				
B + M + Year FE	-0.754	-0.372	x		
	(-0.40)	(-0.46)	x		
p_exog	0.791	0.689	x		

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Net-Gini from iv-probit estimations on the sample of OECD countries

If the Gini of gross incomes is used in IV-estimations, a negative relation with the binary dependent variable, indicating that the unemployed should be allowed to refuse a job, surges. For the binary dependent variable that indicates that unemployed should take any job, there is a mostly positive relation with the gross-gini. While estimation results are insignificant and the Wald test for exogeneity indicates that no endogeneity is no issue, results suggest that higher levels of pre-tax income inequality increases work ethic as measured by *work-unemp*.

Table 10M. Coefficients of Gross-Gini for *work-unemp-refuse*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.162	-0.033	-0.052	-0.048	-0.047
	(-0.44)	(-0.65)	(-0.69)	(-0.64)	(-0.63)
p_exog	0.713	0.428	0.417	0.437	0.441
B + Macro	0.044	-0.048	-0.055	-0.052	-0.052
	(0.41)	(-0.93)	(-0.91)	(-0.86)	(-0.85)
p_exog	0.609	0.252	0.266	0.280	0.281
B + M + Year FE	0.199	-0.103	-0.137	-0.137	-0.140
	(0.41)	(-0.62)	(-0.70)	(-0.69)	(-0.68)
p_exog	0.714	0.497	0.474	0.480	0.482

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

Table 10N. Coefficients of Gross-Gini for *work-unemp-take*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.071	0.033	0.066	0.057	0.054
	(-0.32)	(0.58)	(0.75)	(0.66)	(0.64)
p_exog	0.815	0.235	0.284	0.293	0.299
B + Macro	-0.056	0.040	0.061	0.055	0.051
	(-0.75)	(0.77)	(0.92)	(0.81)	(0.79)
p_exog	0.573	0.155	0.186	0.192	0.195
B + M + Year FE	-0.234	0.119	0.131	0.133	0.118
	(-0.52)	(0.59)	(0.65)	(0.63)	(0.61)
p_exog	0.686	0.474	0.448	0.453	0.453

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

In sum, there is no conclusion possible. If anything, there is a weak indication that higher income inequality results in less tolerance for the unemployed.

5.6. Conclusion on Inequality and Work Ethic

For *child-hardwork* and *child-determination* there is some evidence of a positive association with levels of income inequality. For *money-work* results indicating a positive association with income inequality are quite robust. *Work-duty* also is found to have a rather positive relation, especially with the Gini of net incomes. The findings for *work-unemp* are ambiguous. Aggregating results over all items, there is a positive, modestly significant association between contemporaneous levels of income inequality and work ethics. If the historical level of inequality is measured with ten year lags, there is a mostly significant, negative relationship between work ethics and the Gini of gross and net incomes. The experience of income inequality when young, i.e. the mean level of the Gini coefficient when the respondent was aged 17 to 25, does not help to resolve the contradictory results with respect to historical inequality values. Most results indicate a positive relation between income inequality when young and work ethics. Instrumental variable estimations that account for endogeneity mostly strengthen these results.

6. Income Inequality and Civism

All items used to operationalise civism, evaluate whether some sort of behaviour can be justified in the eyes of the respondent or not. Respondents where asked: "Please tell me for each of the following statements whether you think it can always be justified (1), never be justified (10), or something in between, using this card." Respective behaviours are "Claiming government benefits to which you are not entitled to" (*justify-govbenefit*, see section 6.3.), "Avoiding a fare on public transport" (*justify-nofare*, see section 6.4.), "Cheating on taxes if you have a chance" (*justify-taxcheat*, see section 6.5.) and "Someone accepting a bribe in the course of their duties" (*justify-bribe*, see section 6.6.). These items have already been extensively used in economic research. Since most publications use all or several of the items, the relevant literature will be discussed jointly for all civism-items.

6.1. Literature

Knack and Keefer (1997) use cheating on benefits, on taxes and on fares and other variables to construct a measure of civic cooperation to proxy for social capital. They find a significant effect of civic cooperation on economic growth. In a recent contribution, Guiso et al. (2010) refine the concept of social capital with the concept of civic capital. They argue that social capital has lost its explanatory power since it has become too broad a concept, burdened with to many definitions. Civic capital instead is restricted to a "set of values and beliefs that help cooperation" (Guiso et al. 2010). Their measures of civic capital include the four items used here to measure civism (*justify-govbenefit*, *justify-taxcheat*, *justify-bribe* and *justify-nofare*), whether lying in your own interest is justifiable (see section 8 on honesty), justifiability of speeding and littering and the principal components of *justify-govbenefit*, *justify-taxcheat* and *justify-bribe*. The authors show that civic capital can explain persisting differences in economic performance across countries. In an earlier contribution (Guiso et al. 2003) the same authors interpret the four items of civism as "attitudes toward legal norms" and show that religiosity has a positive statistical association with these attitudes. Östling (2009) proposes a model of cognitive dissonance to analyze the influence of price- and income changes on moral values. Among the moral values he uses to empirically test the theory is *justify-govbenefit*, *justify-taxcheat* and *justify-nofare*. In their effort to pin down the cultural dimensions that drive long run economic growth, Gorodnichenko and Roland (2011) use *justify-taxcheat*, *justify-nofare* and unselfishness as an important child quality (see *child-unselfish*, section 10) to construct an index of public goods provision. The item on government benefits is used to analyse welfare state arrangements. Aghion et al. (2010)

explain the trade off between government intervention and trust and measure the civic attitude of a household using the government benefit item. In a related contribution Algan and Cahuc (2009) show that higher civic virtues, i.e. lower acceptance of cheating on government benefits, is positively associated with unemployment benefits and negatively with job protection. Halla et al. (2010) and Heinemann (2008) argue that more generous welfare state arrangements result in lower benefit moral, i.e. higher acceptance of cheating on government benefits. In a considerable number of publications, *justify-taxcheat* is used to measure tax moral, interpreted as an indirect measure of tax compliance (e.g. Schneider and Torgler 2006). Analyzing the relation between income inequality and corruption You and Khagram (2005) analyze the association between income inequality and *justify-taxcheat* and *justify-bribe*. Using a rather questionable econometric approach, they find a significant positive correlation between income inequality and the acceptance of bribing and cheating on taxes.

6.2. Justify-govbenefit

6.2.1. Descriptive Statistics

In Table 11A the mean of *justify-govbenefit* by country and wave is presented. There are a total of 181,683 observations. The sample size for the estimated specifications varies from 162,646 to 69,784 cases.

Table 11A. Mean of justify_govbenefit by country and wave

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	9.206	.	9.294	.	9.246	.	9.257
Austria	.	9.343	.	8.908	.	8.505	8.915
Belgium	8.879	8.381	.	8.451	.	8.916	8.585
Canada	8.573	9.112	.	9.120	9.134	.	9.025
Czech Rep	.	7.188	8.207	9.194	.	8.626	8.145
Denmark	9.644	9.520	.	9.619	.	9.624	9.606
Estonia	.	8.719	8.828	7.801	.	8.388	8.430
Finland	.	6.258	8.976	8.653	8.927	9.119	8.608
France	7.567	7.533	.	7.621	7.848	7.366	7.572
Germany	.	9.062	8.787	9.002	8.878	8.960	8.953
Greece	.	.	.	6.964	.	6.879	6.915
Hungary	9.467	8.191	8.239	9.359	.	9.414	9.070
Iceland	9.335	9.228	.	9.248	.	9.501	9.328
Ireland	9.133	9.061	.	9.171	.	8.976	9.088
Italy	9.533	8.924	.	9.118	9.383	9.166	9.182
Japan	9.088	9.012	8.914	8.908	8.910	.	8.963
Luxembourg	.	.	.	8.131	.	7.898	7.997
Mexico	.	6.076	7.699	7.283	6.906	.	7.076
Netherlands	9.540	9.389	.	9.512	9.536	9.520	9.503
New Zealand	.	.	9.132	.	9.147	.	9.138
Norway	9.579	9.567	9.362	.	8.936	9.093	9.320
Poland	.	8.874	8.705	8.638	8.684	8.198	8.626

Portugal	.	8.201	.	8.946	.	8.901	8.690
South-Korea	8.888	8.796	.	.	8.365	.	8.667
Slovakia	.	6.998	7.718	8.090	.	8.065	7.693
Slovenia	.	8.192	7.620	8.180	7.996	8.405	8.100
Spain	8.647	8.425	9.078	8.617	8.473	8.334	8.556
Sweden	9.569	9.372	8.848	8.919	9.129	9.061	9.113
Switzerland	.	9.082	8.669	.	9.417	9.262	9.112
Turkey	.	9.477	.	9.761	9.394	9.628	9.575
UK	9.175	9.177	.	9.027	8.837	9.444	9.164
USA	9.267	9.057	9.374	8.831	8.818	.	9.108
Mean	9.108	8.554	8.682	8.715	8.798	8.764	8.740

6.2.2. Basic Results from contemporary inequality data

Benefit moral is positively associated with the Gini of net incomes, with some results being significant. In contrast the estimates for the Gini of gross incomes do not allow an unambiguous conclusion. There are positive and negative estimates and all coefficients are insignificant.

Table 11B. Coefficients of contemporary Gini-net for *justify-govbenefit*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.015	0.019	0.024	0.022	0.022	0.007
	(-0.76)	(0.64)	(0.86)	(0.78)	(0.76)	(0.17)
OECD	-0.001	0.007	0.016	0.011	0.010	0.008
	(-0.07)	(0.35)	(1.06)	(0.63)	(0.57)	(0.39)
B + M + Year FE	-0.020	0.031	0.037*	0.038+	0.035+	0.018
	(-1.61)	(1.50)	(1.97)	(1.78)	(1.67)	(0.73)

Table 11C. Coefficients of contemporary Gini-gross for *justify-govbenefit*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.010	-0.003	0.002	0.002	0.002	0.006
	(-0.99)	(-0.17)	(0.09)	(0.11)	(0.10)	(0.37)
B + Macro	0.002	-0.004	0.004	-0.002	-0.002	0.000
	(0.20)	(-0.40)	(0.47)	(-0.18)	(-0.19)	(0.01)
B + M + Year FE	0.001	0.003	0.007	0.008	0.008	0.008
	(0.10)	(0.29)	(0.81)	(0.68)	(0.67)	(0.56)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

6.2.3.. Results from lagged inequality data

Results are ambiguous for ten year lags of inequality data with positive and negative coefficients. If instead the Gini coefficients from twenty years ago are used, there is a mostly positive, mostly significant relation with benefit morals. This is true for the Gini of net and gross incomes.

Table 11D. Coefficients of ten-year-lags of Gini-net for *justify-govbenefit*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.001	-0.011	-0.015	-0.023*	-0.022*	-0.015
	(-0.11)	(-0.91)	(-1.17)	(-2.35)	(-2.29)	(-0.85)
B + Macro	0.015	0.027+	0.023+	0.008	0.008	0.006
	(0.92)	(1.89)	(1.75)	(0.52)	(0.48)	(0.31)
B + M + Year FE	0.006	-0.008	-0.022	-0.026	-0.025	-0.013
	(0.39)	(-0.42)	(-1.12)	(-1.29)	(-1.22)	(-0.73)

Table 11E. Coefficients of ten-year-lags of Gini-gross for *justify-govbenefit*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.000	-0.006	-0.009	-0.012	-0.011	-0.007
	(0.04)	(-0.70)	(-1.01)	(-1.45)	(-1.40)	(-0.62)
B + Macro	0.005	0.014	0.012	0.003	0.002	-0.009
	(0.43)	(1.43)	(1.28)	(0.30)	(0.27)	(-0.68)
B + M + Year FE	-0.012	-0.012	-0.019*	-0.017*	-0.018*	-0.008
	(-0.93)	(-1.31)	(-2.26)	(-2.08)	(-2.07)	(-0.90)

Table 11F. Coefficients of twenty-year-lags of Gini-net for *justify-govbenefit*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.048**	0.044+	0.038	0.053**	0.052**	0.045+
	(2.71)	(1.87)	(1.47)	(2.67)	(2.64)	(1.93)
B + Macro	0.031+	0.033*	0.028*	0.034*	0.033*	0.022*
	(1.75)	(2.32)	(2.41)	(2.55)	(2.48)	(2.00)
B + M + Year FE	0.038*	0.017	0.017	0.030*	0.030*	0.015+
	(2.31)	(1.24)	(1.29)	(2.36)	(2.35)	(1.77)

Table 11G. Coefficients of twenty-year-lags of Gini-gross for *justify-govbenefit*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.001	0.037*	0.032+	0.032+	0.032+	0.024
	(0.08)	(2.13)	(1.73)	(1.71)	(1.74)	(1.14)
B + Macro	-0.014	0.033*	0.028*	0.027*	0.027*	0.012
	(-0.81)	(2.31)	(2.36)	(2.16)	(2.18)	(1.25)
B + M + Year FE	-0.006	0.029**	0.026**	0.026*	0.026**	0.015**
	(-0.44)	(2.77)	(2.62)	(2.56)	(2.60)	(2.62)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

6.2.4. Effect of Inequality when aged eighteen to twenty-five

The estimated coefficients for inequality levels when the respondent was young are negative and often statistically significant for the Gini if gross and net incomes. Accordingly, if the respondent experienced higher inequality when young, she is more likely to find benefit fraud excusable. The statistical relation of inequality levels when young is contrary to the relation found for contemporaneous values and twenty year lags.

Table 11H. Coefficients of Gini-net when aged 18-25 for *justify-govbenefit*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.011+	-0.010*	-0.012*	-0.011*	-0.012*	-0.010
	(-1.91)	(-2.02)	(-2.41)	(-2.42)	(-2.43)	(-1.60)
B + Macro	-0.008	-0.008	-0.009	-0.009	-0.009	-0.007
	(-1.15)	(-1.23)	(-1.49)	(-1.36)	(-1.37)	(-1.00)
B + M + Year FE	-0.010	-0.009	-0.011+	-0.009	-0.009	-0.007
	(-1.29)	(-1.55)	(-1.80)	(-1.49)	(-1.49)	(-0.96)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 11J. Coefficients of Gini-gross when aged 18-25 for *justify-govbenefit*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.010^{+}	-0.009*	-0.012**	-0.011**	-0.012**	-0.009^{+}
	(-1.95)	(-2.13)	(-2.66)	(-2.71)	(-2.74)	(-1.73)
B + Macro	-0.008	-0.007	-0.009	-0.009	-0.009	-0.007
	(-1.19)	(-1.25)	(-1.60)	(-1.54)	(-1.57)	(-1.09)
B + M + Year FE	-0.009	-0.009	-0.011^{+}	-0.009^{+}	-0.010^{+}	-0.007
	(-1.31)	(-1.58)	(-1.90)	(-1.65)	(-1.68)	(-1.01)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

6.2.5. Instrumental Variable Estimation

Instrumental variable estimation can only add little to our understanding of the underlying relation between income inequalities and benefit morals. If the Gini of net incomes is used, IV-results are ambiguous. If instead the Gini of gross incomes is used, IV estimation indicates a negative relation to benefit morals.

Table 11K. Coefficients of Net-Gini for *justify_govbenefit_never*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.123^{+}	1.042*			
	(-1.85)	(2.09)			
p_exog	0.075	0.917			
B + Macro	-0.137	0.827	0.543	-0.656	-0.643
	(-0.61)	(0.38)	(0.32)	(-0.23)	(-0.23)
p_exog	0.546	0.844	0.797	0.865	0.863
B + M + Year FE	-0.274	0.033	0.023	0.022	0.025
	(-0.81)	(0.39)	(0.28)	(0.25)	(0.28)
p_exog	0.463	0.869	0.991	0.995	0.960

Table 11L. Coefficients of Net-Gini for *justify_govbenefit_always*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.097				
	(1.42)				
p_exog	0.032				
B + Macro	0.288	-0.938			
	(1.51)	(-0.70)			
p_exog	0.139	0.818			
B + M + Year FE	0.467	0.007	0.036	0.061	0.061
	(0.92)	(0.05)	(0.25)	(0.32)	(0.32)
p_exog	0.424	0.752	0.601	0.599	0.608

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Net-Gini from iv-probit estimations on the sample of OECD countries

Table 11M. Coefficients of Gross-Gini for *justify_govbenefit_never*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.066*	-0.309	-0.403	-0.357	-0.353
	(-2.05)	(-0.61)	(-0.63)	(-0.43)	(-0.42)
p_exog	0.033	0.653	0.730	0.782	0.781
B + Macro	-0.082	-0.155	-0.193	-0.118	-0.117
	(-0.65)	(-0.75)	(-0.45)	(-0.50)	(-0.50)
p_exog	0.509	0.487	0.680	0.632	0.633
B + M + Year FE	-0.088	-0.050	-0.036	-0.015	-0.017
	(-0.88)	(-0.27)	(-0.22)	(-0.22)	(-0.24)
p_exog	0.392	0.789	0.817	0.794	0.779

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

Table 11N. Coefficients of Gross-Gini for *justify_govbenefit_always*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.055	0.295	0.379	0.361	0.357
	(1.38)	(0.60)	(0.56)	(0.45)	(0.45)
p_exog	0.040	0.615	0.719	0.758	0.757
B + Macro	x				
	x				
p_exog	x				
B + M + Year FE	0.161	0.008	-0.028	-0.026	-0.028
	(1.08)	(0.04)	(-0.22)	(-0.38)	(-0.41)
p_exog	0.288	0.861	0.986	0.900	0.934

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

Overall, results for *justify-govbenefit* are inconclusive. While there seems to be some positive association between benefit morals and contemporary values of income inequality, there is likely a negative relation for historical values.

6.3. Justify-nofare

6.3.1. Descriptive Statistic

Table 12A shows the mean of *justify-nofare* by country and wave. There are 170,824 observations for *justify-nofare*. The sample size for each estimated model varies, ranging from 152,637 to 62,969 cases.

Table 12A. Mean of justify_nofare by country and wave

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	8.635	.	8.922	.	8.665	.	8.770
Austria	.	9.131	.	8.739	.	8.126	8.661
Belgium	8.834	8.541	.	8.608	.	8.528	8.599
Canada	8.656	8.874	.	8.770	8.778	.	8.778
Czech Rep	.	8.875	7.794	8.048	.	7.830	8.204
Denmark	9.223	9.244	.	9.228	.	9.143	9.203
Estonia	.	8.716	7.974	.	.	8.623	8.465
Finland	.	8.782	8.692	8.502	8.723	8.379	8.596
France	8.338	8.376	.	8.324	8.158	8.490	8.348
Germany	.	8.922	7.888	9.043	8.780	8.594	8.679
Greece	.	.	.	7.567	.	8.515	8.114
Hungary	9.309	7.718	7.230	.	.	8.249	8.325
Iceland	8.647	8.149	.	.	.	8.276	8.380
Ireland	8.440	8.762	.	.	.	8.062	8.428
Italy	9.207	8.906	.	8.832	8.906	8.678	8.895
Japan	9.406	9.476	9.438	9.377	9.419	.	9.420
Luxembourg	.	.	.	8.340	.	8.210	8.265
Mexico	.	6.796	7.641	7.208	6.687	.	7.146
Netherlands	8.540	8.767	.	8.236	8.982	8.622	8.629
New Zealand	.	.	8.953	.	8.941	.	8.948
Norway	9.449	9.300	9.066	.	8.716	8.732	9.064
Poland	.	9.124	9.035	.	8.502	8.019	8.615
Portugal	.	8.134	.	.	.	8.986	8.618
South-Korea	8.923	8.227	8.357	8.254	8.210	.	8.369

Slovakia	.	8.232	7.388	.	.	7.808	7.813
Slovenia	.	8.504	8.246	.	7.779	8.632	8.322
Spain	8.541	8.652	9.034	8.778	8.594	8.071	8.602
Sweden	9.395	9.014	8.115	.	8.269	7.778	8.491
Switzerland	.	9.301	8.717	.	9.195	8.834	9.021
Turkey	.	9.040	.	.	9.145	9.614	9.353
UK	8.750	8.929	.	8.368	8.618	8.683	8.693
USA	9.015	8.841	9.130	8.357	8.556	.	8.831
Mean	8.887	8.702	8.426	8.499	8.576	8.495	8.596

6.3.2. Basic Results from contemporary inequality data

The estimated coefficients for the Gini of gross and net incomes are mostly significantly positive (Table 12B and 12C). Higher levels of income inequality are accompanied with a higher probability for a good pay moral in public transport.

Table 12B. Coefficients of contemporary Gini-net for *justify-nofare*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.060***	0.039	0.042	0.036	0.033	0.070*
	(-3.54)	(1.27)	(1.46)	(1.14)	(1.05)	(2.05)
OECD	0.003	0.055*	0.071***	0.071***	0.068***	0.072***
	(0.22)	(2.21)	(3.69)	(3.60)	(3.38)	(4.58)
B + M + Year FE	0.012	0.099***	0.102***	0.070***	0.067***	0.035
	(0.66)	(5.21)	(5.72)	(3.55)	(3.53)	(1.26)

Table 12C. Coefficients of contemporary Gini-gross for *justify-nofare*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.030**	0.019	0.027+	0.030+	0.029+	0.035*
	(-2.67)	(1.09)	(1.70)	(1.94)	(1.93)	(2.25)
B + Macro	0.007	0.016	0.030**	0.031**	0.031**	0.029**
	(0.76)	(1.15)	(2.86)	(2.79)	(2.75)	(2.86)
B + M + Year FE	0.020+	0.025	0.030*	0.010	0.011	-0.015
	(1.74)	(1.64)	(2.07)	(0.78)	(0.84)	(-0.89)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

6.3.3. Results from lagged inequality data

The results for lagged values of the Gini of net income are ambiguous, both for ten and twenty year lags. The Gini of gross incomes ten years ago has a significantly negative relation with pay moral in public transport. The results for twenty year lags are ambiguous with positive and negative coefficients in about equal proportion. The historical dimension of inequality levels will be further considered in Section 12.

Table 12D. Coefficients of ten-year-lags of Gini-net for *justify-nofare*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.023	-0.019	-0.023	-0.019	-0.017	-0.044*
	(-1.36)	(-1.02)	(-1.18)	(-0.98)	(-0.92)	(-2.04)
B + Macro	0.012	0.003	-0.011	-0.007	-0.006	-0.020
	(0.74)	(0.15)	(-0.70)	(-0.46)	(-0.37)	(-0.80)
B + M + Year FE	0.005	-0.038*	-0.043**	-0.029+	-0.026	-0.035+
	(0.32)	(-2.33)	(-2.98)	(-1.79)	(-1.60)	(-1.80)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 12E. Coefficients of ten-year-lags of Gini-gross for *justify-nofare*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.022*	-0.015	-0.018	-0.014	-0.013	-0.025+
	(-2.24)	(-1.35)	(-1.64)	(-1.22)	(-1.17)	(-1.94)
B + Macro	-0.009	-0.002	-0.010	-0.008	-0.008	-0.029
	(-0.86)	(-0.15)	(-0.82)	(-0.63)	(-0.60)	(-1.43)
B + M + Year FE	-0.018	-0.041***	-0.043***	-0.027*	-0.027*	-0.027*
	(-1.58)	(-3.39)	(-4.00)	(-2.24)	(-2.14)	(-2.44)

Table 12F. Coefficients of twenty-year-lags of Gini-net for *justify-nofare*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.046	0.018	0.007	0.021	0.022	0.013
	(1.56)	(0.60)	(0.24)	(0.62)	(0.65)	(0.32)
B + Macro	0.025	0.012	-0.003	0.002	0.003	-0.008
	(1.16)	(0.55)	(-0.13)	(0.07)	(0.13)	(-0.30)
B + M + Year FE	0.024	0.002	-0.007	0.012	0.012	-0.008
	(1.15)	(0.10)	(-0.38)	(1.00)	(1.17)	(-1.02)

Table 12G. Coefficients of twenty-year-lags of Gini-gross for *justify-nofare*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.006	0.009	-0.002	0.000	0.001	-0.010
	(0.49)	(0.35)	(-0.09)	(0.00)	(0.05)	(-0.33)
B + Macro	-0.006	0.005	-0.010	-0.013	-0.011	-0.023
	(-0.54)	(0.22)	(-0.58)	(-0.68)	(-0.59)	(-1.03)
B + M + Year FE	-0.007	0.005	-0.001	0.006	0.007	-0.007
	(-0.93)	(0.37)	(-0.10)	(0.76)	(0.93)	(-1.19)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

6.3.4. Effect of Inequality when aged eighteen to twenty-five

There is a mostly negative but insignificant relation between the mean level of the Gini of net incomes while the respondent was young and *justify-nofare*. For the Gini of gross incomes most estimates are negative too. However all estimates are insignificant.

Table 12H. Coefficients of Gini-net when aged 18-25 for *justify-nofare*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.010	-0.006	-0.006	-0.005	-0.005	-0.004
	(-1.37)	(-0.86)	(-0.88)	(-0.68)	(-0.68)	(-0.51)
B + Macro	0.000	-0.003	-0.004	-0.003	-0.003	-0.001
	(0.03)	(-0.39)	(-0.61)	(-0.41)	(-0.44)	(-0.07)
B + M + Year FE	0.000	-0.004	-0.005	-0.004	-0.005	-0.002
	(0.04)	(-0.58)	(-0.66)	(-0.59)	(-0.60)	(-0.27)

Table 12J. Coefficients of Gini-gross when aged 18-25 for *justify-nofare*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.009	-0.006	-0.006	-0.005	-0.005	-0.003
	(-1.34)	(-0.87)	(-0.88)	(-0.66)	(-0.72)	(-0.44)
B + Macro	0.000	-0.002	-0.004	-0.003	-0.003	0.000
	(0.05)	(-0.37)	(-0.55)	(-0.36)	(-0.45)	(0.04)
B + M + Year FE	0.000	-0.004	-0.004	-0.004	-0.005	-0.002
	(0.05)	(-0.57)	(-0.62)	(-0.58)	(-0.65)	(-0.22)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

6.3.5. Instrumental Variable Estimation

Instrumenting the Gini of net incomes, results are ambiguous. For the first model however, there is a consistent, significant negative effect of income inequality on the pay moral in public transport across all configuration. Also the Wald test of exogeneity can be rejected at reasonable levels so that Instrumenting seems justified.

Table 12K. Coefficients of Net-Gini for *justify-nofare-never*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.197**	x			
	(-2.78)	x			
p_exog	0.014	x			
B + Macro	-0.230	-0.743	x		
	(-1.57)	(-0.47)	x		
p_exog	0.144	0.773	x		
B + M + Year FE	-0.302+	0.410	0.279	0.296	0.275
	(-1.74)	(0.49)	(0.38)	(0.54)	(0.54)
p_exog	0.108	0.694	0.778	0.656	0.654

Table 12L. Coefficients of Net-Gini for *justify-nofare-always*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.071	0.546	0.514	0.361	0.344
	(1.16)	(0.52)	(0.53)	(0.62)	(0.60)
p_exog	0.114	0.665	0.637	0.515	0.521
B + Macro	0.202+	0.899	x		
	(1.71)	(1.01)	x		
p_exog	0.075	0.724	x		
B + M + Year FE	0.138	-0.606	-0.297	-0.266	-0.234
	(0.86)	(-0.55)	(-0.36)	(-0.50)	(-0.48)
p_exog	0.268	0.669	0.811	0.725	0.744

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Net-Gini from iv-probit estimations on the sample of OECD countries

If the Gini of gross incomes is instrumented with *mature*, to explain the probability that respondents have high morals, again a negative effect of income inequality on moral attitudes is found. Some results are significant and instrumenting is adequate since endogeneity seems to be an issue, i.e. the Wald test of exogeneity is rejected. If the dependent variable indicates that it is always justifiable to cheat on transportation fees, estimated coefficients are positive but insignificant.

Table 12M. Coefficients of Gross-Gini for *justify-nofare-never*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.099***	-0.261	-0.235	-0.225	-0.217
	(-3.30)	(-0.63)	(-0.65)	(-0.62)	(-0.61)
p_exog	0.004	0.579	0.537	0.550	0.549
B + Macro	-0.119	-0.149	-0.127	x	
	(-1.62)	(-1.09)	(-0.74)	x	
p_exog	0.101	0.236	0.386	x	
B + M + Year FE	-0.121*	-0.076	-0.038	-0.072	-0.067
	(-2.56)	(-1.30)	(-0.84)	(-0.93)	(-0.89)
p_exog	0.021	0.111	0.191	0.296	0.311

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

Table 12N. Coefficients of Gross-Gini for *justify-nofare-always*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.037	0.252	0.238	0.241	0.230
	(1.21)	(0.60)	(0.62)	(0.62)	(0.60)
p_exog	0.096	0.577	0.536	0.541	0.546
B + Macro	0.104	0.250	0.266	0.512	x
	(1.62)	(1.12)	(0.89)	(0.91)	
p_exog	0.066	0.253	0.367	0.731	
B + M + Year FE	0.051	0.124	0.051	0.071	0.063
	(0.90)	(1.03)	(0.52)	(0.57)	(0.52)
p_exog	0.195	0.237	0.397	0.474	0.504

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

In sum, there is a positive relation between contemporary levels of inequality and the moral attitude towards paying for public transport. However, if lagged variables, the inequality experience when young or IV estimations are observed, a mostly negative effect of income inequality on the probability to find cheating on fares in public transport acceptable, is found.

6.4. Justify-taxcheat

6.4.1. Descriptive Statistic

In Table 13A the mean of *justify-taxcheat* by country and wave is depicted. There is a maximum of 182,487 observations for *justify-taxcheat*. The sample sizes for the estimated models vary between 164,746 and 70,093 cases.

Table 13A. Mean of *justify_taxcheat* by country and wave

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	7.927	.	8.843	.	8.965	.	8.641
Austria	.	9.026	.	8.900	.	8.435	8.785
Belgium	7.679	6.894	.	7.389	.	7.814	7.332
Canada	8.756	8.600	.	8.984	9.186	.	8.911
Czech Rep	.	9.185	8.020	8.977	.	8.515	8.768
Denmark	8.489	8.555	.	8.995	.	9.188	8.835
Estonia	.	8.920	7.627	7.824	.	8.723	8.327
Finland	.	7.843	8.433	8.454	8.858	9.072	8.603
France	7.555	7.918	.	7.965	8.176	8.530	8.049
Germany	.	8.435	8.014	8.629	8.861	9.028	8.576
Greece	.	.	.	7.843	.	8.585	8.271
Hungary	.	7.907	8.598	8.915	.	9.369	8.793
Iceland	8.467	8.447	.	8.773	.	9.024	8.683
Ireland	7.623	8.259	.	8.710	.	8.684	8.286
Italy	9.094	8.466	.	8.608	8.824	8.746	8.708
Japan	9.522	9.520	9.491	9.537	9.544	.	9.524
Luxembourg	.	.	.	7.650	.	8.308	8.029
Mexico	.	7.199	7.918	8.693	8.375	.	8.029
Netherlands	7.810	8.038	.	8.262	8.737	8.739	8.344
New Zealand	.	.	8.698	.	8.835	.	8.757

Norway	7.665	7.904	8.287	.	8.718	8.668	8.234
Poland	.	8.284	8.514	8.860	8.545	8.374	8.478
Portugal	.	7.182	.	8.564	.	8.855	8.247
South-Korea	9.444	9.452	9.213	9.409	9.336	.	9.367
Slovakia	.	8.873	7.740	8.852	.	8.669	8.561
Slovenia	.	8.971	8.185	8.663	8.630	9.015	8.714
Spain	8.148	8.392	9.082	8.750	8.937	8.574	8.555
Sweden	9.196	8.535	8.419	8.575	8.706	8.679	8.665
Switzerland	.	8.628	8.354	.	8.918	8.828	8.684
Turkey	.	9.755	.	9.820	9.661	9.713	9.730
UK	8.171	8.476	.	8.569	8.709	9.157	8.643
USA	8.880	9.052	9.315	8.777	9.045	.	9.011
Mean	8.402	8.412	8.477	8.637	8.903	8.789	8.605

6.4.2. Basic Results from contemporary inequality data

For contemporary inequality levels estimation results are ambiguous. There are positive and negative coefficients, mostly insignificant. This is true for the Gini of net and gross incomes. No relation between income inequality and tax morals can be derived.

Table 13B. Coefficients of contemporary Gini-net for *justify-taxcheat*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.036**	0.021	0.017	0.016	0.018	0.004
	(2.79)	(1.56)	(1.14)	(1.00)	(1.14)	(0.23)
B + Macro	0.014	0.017	0.010	-0.010	-0.008	-0.056**
	(0.74)	(0.88)	(0.51)	(-0.48)	(-0.40)	(-2.98)
B + M + Year FE	0.017	-0.002	-0.003	0.002	0.005	-0.022
	(0.92)	(-0.11)	(-0.17)	(0.12)	(0.26)	(-1.31)

Table 13C. Coefficients of contemporary Gini-gross for *justify-taxcheat*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.006	0.015	0.016	0.015	0.015	0.014
	(0.49)	(0.78)	(0.78)	(0.69)	(0.66)	(0.59)
B + Macro	0.012	0.018	0.022	0.013	0.013	0.010
	(1.04)	(0.86)	(1.01)	(0.53)	(0.53)	(0.36)
B + M + Year FE	0.000	-0.002	-0.000	-0.007	-0.007	-0.011
	(0.03)	(-0.18)	(-0.03)	(-0.40)	(-0.38)	(-0.51)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

6.4.3. Results from lagged inequality data

For inequality levels ten and twenty years ago, the relation with *justify-taxcheat* is ambiguous. While most estimated coefficients are insignificant, there are significantly positive and significantly negative estimates for the ten year lags of the Gini of gross incomes. But since these results are contradictory, no conclusion can be derived.

Table 13D. Coefficients of ten-year-lags of Gini-net for *justify-taxcheat*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.036**	0.021	0.017	0.016	0.018	0.004
	(2.79)	(1.56)	(1.14)	(1.00)	(1.14)	(0.23)
OECD	0.014	0.017	0.010	-0.010	-0.008	-0.056**
	(0.74)	(0.88)	(0.51)	(-0.48)	(-0.40)	(-2.98)
B + M + Year FE	0.017	-0.002	-0.003	0.002	0.005	-0.022
	(0.92)	(-0.11)	(-0.17)	(0.12)	(0.26)	(-1.31)

Table 13E. Coefficients of ten-year-lags of Gini-gross for *justify-taxcheat*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.026***	0.020**	0.018*	0.017*	0.019**	0.012
	(3.94)	(2.88)	(2.47)	(2.42)	(2.65)	(1.50)
B + Macro	0.013	0.022	0.018	0.005	0.006	-0.021
	(1.02)	(1.51)	(1.17)	(0.37)	(0.42)	(-1.30)
B + M + Year FE	-0.005	-0.017	-0.023+	-0.020	-0.020	-0.039**
	(-0.35)	(-1.29)	(-1.69)	(-1.45)	(-1.45)	(-3.23)

Table 13F. Coefficients of twenty-year-lags of Gini-net for *justify-taxcheat*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.012	-0.011	-0.014	0.001	0.000	-0.008
	(-0.51)	(-0.41)	(-0.47)	(0.03)	(0.00)	(-0.25)
B + Macro	-0.016	-0.019	-0.021	-0.002	-0.002	-0.032
	(-0.68)	(-0.71)	(-0.74)	(-0.07)	(-0.07)	(-1.31)
B + M + Year FE	0.013	0.019	0.021	0.025	0.025	0.010
	(0.64)	(1.09)	(1.13)	(1.33)	(1.27)	(0.50)

Table 13G. Coefficients of twenty-year-lags of Gini-gross for *justify-taxcheat*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.021	0.002	-0.001	0.003	0.004	-0.002
	(-1.49)	(0.09)	(-0.08)	(0.17)	(0.22)	(-0.09)
B + Macro	-0.023+	-0.002	-0.005	-0.005	-0.004	-0.029+
	(-1.74)	(-0.10)	(-0.26)	(-0.31)	(-0.28)	(-1.88)
B + M + Year FE	-0.010	0.017+	0.016	0.018+	0.018+	0.007
	(-0.78)	(1.74)	(1.55)	(1.69)	(1.72)	(0.58)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

6.4.4. Effect of Inequality when aged eighteen to twenty-five

As can be seen in Table 13H, inequality levels of the net incomes when young do not have a clear relation with tax morals. For the Gini of gross incomes the estimated relation is positive for all estimated coefficients (Table 13J). Results for the basic configuration are significant at levels of 5 to 10%.

Table 13H. Coefficients of Gini-net when aged 18-25 for *justify-taxcheat*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.010*	0.005	0.005	0.004	0.004	0.002
	(2.10)	(1.23)	(1.29)	(1.08)	(1.10)	(0.43)
B + Macro	0.006	0.002	0.003	0.001	0.001	-0.002
	(1.33)	(0.51)	(0.62)	(0.18)	(0.18)	(-0.51)
B + M + Year FE	0.005	-0.000	-0.000	-0.000	-0.000	-0.001
	(1.10)	(-0.11)	(-0.08)	(-0.02)	(-0.02)	(-0.26)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 13J. Coefficients of Gini-gross when aged 18-25 for *justify-taxcheat*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.010*	0.007+	0.007+	0.007+	0.006+	0.005
	(2.42)	(1.72)	(1.93)	(1.75)	(1.71)	(1.31)
B + Macro	0.008+	0.004	0.005	0.003	0.003	0.001
	(1.69)	(0.94)	(1.22)	(0.77)	(0.70)	(0.29)
B + M + Year FE	0.006	0.001	0.002	0.002	0.002	0.002
	(1.50)	(0.35)	(0.63)	(0.57)	(0.49)	(0.53)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

6.4.5. Instrumental Variable Estimation

Instrumenting for the Gini of net incomes no obvious effect of income inequality on tax morals can be identified. Using the dependent variable *justify-taxcheat-never* which indicates high moral standards, coefficients have positive and negative signs which are all insignificant (Table 13K). Results are also mixed for the dependent variable indicating low tax morals (Table 13L). The Wald test of exogeneity can never be rejected so that endogeneity does not seem to be a pressing issue.

Table 13K. Coefficients of Net-Gini for *justify-taxcheat-never*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.016	0.242	0.277	0.198	0.212
	(0.22)	(0.36)	(0.37)	(0.61)	(0.61)
p_exog	0.793	0.782	0.769	0.653	0.643
B + Macro	-0.174	0.180	0.299	0.214	0.223
	(-0.72)	(0.32)	(0.36)	(0.38)	(0.39)
p_exog	0.434	0.814	0.774	0.764	0.758
B + M + Year FE	-0.339	0.003	-0.020	-0.008	-0.009
	(-1.00)	(0.02)	(-0.06)	(-0.02)	(-0.03)
p_exog	0.348	0.881	0.888	0.919	0.920

Table 13L. Coefficients of Net-Gini for *justify-taxcheat-always*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.072+	-0.195	-0.173	-0.111	-0.137
	(-1.68)	(-0.30)	(-0.32)	(-0.47)	(-0.51)
p_exog	0.750	0.827	0.832	0.848	0.782
B + Macro	0.222	0.214	0.143	0.144	0.096
	(1.34)	(0.30)	(0.21)	(0.22)	(0.17)
p_exog	0.162	0.726	0.780	0.758	0.793
B + M + Year FE	0.373	0.218	0.318	x	
	(1.09)	(0.37)	(0.29)	x	
p_exog	0.305	0.650	0.737	x	

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Net-Gini from iv-probit estimations on the sample of OECD countries

If the Gini of gross incomes is instrumented, the majority of coefficients indicate that higher income inequality increases tax morals. This is not true if the binary dependent variable that indicates low tax morals is used and macro controls are included in the specifications. All estimated coefficients are insignificant and the Wald test of exogeneity is not rejected so that endogeneity does not seem to be a problem.

Table 13M. Coefficients of Gross-Gini for *justify-taxcheat-never*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.009	0.090	0.140	0.175	0.187
	(0.21)	(0.53)	(0.45)	(0.44)	(0.45)
p_exog	0.826	0.644	0.690	0.701	0.697
B + Macro	-0.110	0.049	0.111	0.146	0.151
	(-0.80)	(0.46)	(0.52)	(0.33)	(0.34)
p_exog	0.395	0.712	0.650	0.765	0.760
B + M + Year FE	-0.146	0.001	0.011	0.007	0.007
	(-1.49)	(0.01)	(0.08)	(0.06)	(0.06)
p_exog	0.185	0.978	0.920	0.921	0.921

Table 13N. Coefficients of Gross-Gini for *justify-taxcheat-always*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.034	-0.075	-0.088	-0.108	-0.131
	(-1.51)	(-0.43)	(-0.38)	(-0.37)	(-0.39)
p_exog	0.984	0.813	0.828	0.814	0.786
B + Macro	0.144	0.049	0.044	0.067	0.036
	(1.64)	(0.37)	(0.21)	(0.16)	(0.10)
p_exog	0.083	0.529	0.702	0.806	0.842
B + M + Year FE	0.161	-0.149	-0.142	-0.141	-0.150
	(1.44)	(-0.53)	(-0.57)	(-0.64)	(-0.65)
p_exog	0.177	0.669	0.652	0.597	0.584

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

Estimation results for the relation between tax morals and income inequality are ambivalent for contemporaneous and historical measures of income inequality alike. Given all this results, no clear relation between the Gini of gross and net incomes and tax morals can be identified.

6.5. Justify-bribe

The variable *justify-bribe* evaluates respondents' moral attitude toward corruption.

6.5.1. Descriptive Statistic

In Table 14A the mean of *justify-bribe* by country and wave is presented. There is a maximum of 186,620 observations. The sample size varies from 167,462 to 70,187 cases.

Table 14A. Mean of *justify-bribe* by country and wave

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	9.325	.	9.731	.	9.518	.	9.561
Austria	.	9.401	.	9.430	.	9.078	9.302
Belgium	8.702	8.650	.	9.023	.	9.014	8.834
Canada	9.340	9.384	.	9.449	9.454	.	9.416
Czech Rep	.	8.806	8.719	8.820	.	8.432	8.713
Denmark	9.791	9.788	.	9.854	.	9.804	9.808
Estonia	.	9.072	9.493	9.074	.	9.479	9.304
Finland	.	9.431	9.587	9.560	9.402	9.722	9.553
France	8.384	8.888	.	8.923	8.809	9.086	8.838
Germany	.	9.080	9.087	9.065	9.291	9.152	9.129
Greece	.	.	.	9.073	.	9.209	9.152
Hungary	9.139	8.298	7.306	8.413	.	9.083	8.635

Iceland	9.614	9.589	.	9.731	.	9.782	9.682
Ireland	9.482	9.666	.	9.596	.	8.994	9.439
Israel	.	.	.	9.575	.	.	9.575
Italy	8.984	9.334	.	9.498	9.681	9.426	9.379
Japan	9.126	9.211	9.421	9.472	9.460	.	9.345
Luxembourg	.	.	.	9.177	.	9.282	9.238
Mexico	.	8.248	8.450	8.872	8.564	.	8.522
Netherlands	8.990	9.215	.	9.436	9.448	9.527	9.333
New Zealand	.	.	9.543	.	9.550	.	9.546
Norway	9.651	9.541	9.679	.	9.481	9.590	9.589
Poland	.	9.441	9.630	9.474	9.615	8.925	9.391
Portugal	.	9.313	.	9.217	.	9.302	9.282
South-Korea	8.912	9.189	9.494	9.582	9.409	.	9.336
Slovakia	.	8.517	8.384	8.076	.	8.508	8.382
Slovenia	.	9.327	9.170	9.224	9.141	9.441	9.273
Spain	9.418	9.522	9.581	9.346	9.181	9.504	9.441
Sweden	9.400	9.363	9.205	9.149	9.016	8.936	9.169
Switzerland	.	9.407	9.412	.	9.481	9.474	9.443
Turkey	.	9.804	.	9.880	9.718	9.769	9.786
UK	9.294	9.485	.	9.220	9.347	9.568	9.405
USA	9.502	9.535	9.783	9.440	9.413	.	9.541
Mean	9.257	9.200	9.236	9.246	9.343	9.275	9.254

6.5.2. Basic Results from contemporary inequality data

For the Gini of net incomes there is a consistent negative, weakly significant relation with *justify-bribe*. For the Gini of gross incomes coefficients are negative as well. If macro controls are included, most estimated coefficients are negative at a five to ten percent significance level. Accordingly, in countries with higher income inequality, people are more likely to justify bribery, i.e. they have lower morals with respect to corruption.

Table 14B. Coefficients of contemporary Gini-net for *justify-bribe*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.004	-0.005	-0.001	-0.009	-0.011	-0.016
	(-0.32)	(-0.17)	(-0.06)	(-0.41)	(-0.49)	(-0.56)
OECD	0.007	-0.016	-0.009	-0.020	-0.021	-0.025
	(0.38)	(-0.50)	(-0.34)	(-0.68)	(-0.72)	(-0.81)
B + M + Year FE	-0.016	-0.043	-0.063^{+}	-0.072^{+}	-0.075^{+}	-0.066
	(-0.93)	(-1.20)	(-1.69)	(-1.85)	(-1.93)	(-0.98)

Table 14C. Coefficients of contemporary Gini-gross for *justify-bribe*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.003	-0.019	-0.014	-0.016	-0.017	-0.013
	(0.36)	(-1.17)	(-1.07)	(-1.23)	(-1.25)	(-1.06)
B + Macro	0.011	-0.028	-0.020	-0.025	-0.025	-0.031^{+}
	(0.97)	(-1.55)	(-1.35)	(-1.64)	(-1.61)	(-1.93)
B + M + Year FE	0.010	-0.037^{+}	-0.036*	-0.044*	-0.044*	-0.048*
	(0.89)	(-1.94)	(-2.15)	(-2.42)	(-2.38)	(-2.00)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Coefficients of Gross-Gini from ologit estimations on the sample of OECD countries

6.5.3. Results from lagged inequality data

The levels of net income inequality ten years ago have a positive, statistically highly significant relation with *justify-bribe* (Table 14D). The Gini of gross incomes also exhibits a positive significant relation with anti-corruption morals (Table 14E). These findings are opposed to those for contemporaneous values. For twenty year lags, there is no obvious relation between income inequality levels and anti-corruption morals (Table 14F and 14G).

Table 14D. Coefficients of ten-year-lags of Gini-net for *justify-bribe*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.005	0.008	0.002	0.006	0.008	0.012
	(0.52)	(0.62)	(0.22)	(0.53)	(0.68)	(0.84)
B + Macro	0.024	0.060**	0.059**	0.071***	0.072***	0.091***
	(1.38)	(2.80)	(3.19)	(4.15)	(4.25)	(4.08)
B + M + Year FE	0.026	0.076**	0.089***	0.095***	0.097***	0.108***
	(1.44)	(3.16)	(4.47)	(4.80)	(4.98)	(4.02)

Table 14E. Coefficients of ten-year-lags of Gini-gross for *justify-bribe*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.003	0.001	-0.003	-0.001	0.000	0.002
	(0.56)	(0.10)	(-0.49)	(-0.08)	(0.06)	(0.19)
B + Macro	0.011	0.025+	0.021+	0.030+	0.031*	0.021
	(1.10)	(1.68)	(1.67)	(1.95)	(2.04)	(0.90)
B + M + Year FE	0.012	0.037+	0.031	0.035+	0.035+	0.022
	(0.91)	(1.82)	(1.56)	(1.68)	(1.72)	(0.86)

Table 14F. Coefficients of twenty-year-lags of Gini-net for *justify-bribe*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.006	0.016	0.008	0.013	0.012	-0.008
	(0.25)	(0.52)	(0.29)	(0.43)	(0.40)	(-0.25)
B + Macro	-0.012	-0.006	-0.015	-0.019	-0.020	-0.058*
	(-0.43)	(-0.15)	(-0.48)	(-0.54)	(-0.55)	(-2.50)
B + M + Year FE	-0.014	-0.017	-0.014	-0.020	-0.021	-0.053
	(-0.51)	(-0.51)	(-0.40)	(-0.55)	(-0.57)	(-1.43)

Table 14G. Coefficients of twenty-year-lags of Gini-gross for *justify-bribe*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.006	0.018	0.007	0.007	0.007	-0.001
	(-0.42)	(0.62)	(0.27)	(0.26)	(0.27)	(-0.04)
B + Macro	-0.010	0.016	0.006	0.002	0.002	-0.029
	(-0.68)	(0.52)	(0.23)	(0.07)	(0.07)	(-1.13)
B + M + Year FE	-0.004	0.008	0.008	0.008	0.008	-0.018
	(-0.53)	(0.40)	(0.35)	(0.36)	(0.34)	(-1.13)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

6.5.4. Effect of Inequality when aged eighteen to twenty-five

Inequality experience when young consistently reveals a negative relation between *justify-bribe* and the Gini of gross and net incomes. For most estimations the relations are statistically significant at levels between five to ten percent. This is in line with the effect of contemporaneous inequality levels but contradicts the estimations for lagged variables.

Table 14H. Coefficients of Gini-net when aged 18-25 for *justify-bribe*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.009^{+}	-0.013*	-0.016**	-0.013*	-0.013*	-0.013*
	(-1.91)	(-2.40)	(-2.74)	(-2.36)	(-2.36)	(-2.04)
B + Macro	-0.008	-0.012^{+}	-0.014*	-0.011^{+}	-0.011^{+}	-0.012^{+}
	(-1.48)	(-1.79)	(-2.07)	(-1.70)	(-1.70)	(-1.77)
B + M + Year FE	-0.009^{+}	-0.013*	-0.014*	-0.012^{+}	-0.011^{+}	-0.010
	(-1.80)	(-2.09)	(-2.22)	(-1.88)	(-1.85)	(-1.61)

Table 14J. Coefficients of Gini-gross when aged 18-25 for *justify-bribe*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.008^{+}	-0.013*	-0.015**	-0.012*	-0.012*	-0.012^{+}
	(-1.73)	(-2.35)	(-2.69)	(-2.33)	(-2.31)	(-1.95)
B + Macro	-0.007	-0.011^{+}	-0.012^{+}	-0.010	-0.010	-0.011
	(-1.20)	(-1.71)	(-1.91)	(-1.60)	(-1.58)	(-1.61)
B + M + Year FE	-0.008	-0.012*	-0.013*	-0.010^{+}	-0.010^{+}	-0.009
	(-1.44)	(-1.97)	(-2.02)	(-1.73)	(-1.69)	(-1.44)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

6.5.5. Instrumental Variable Estimation

The instrumental variable estimation for the Gini of net incomes produces mixed results. Coefficients are positive or negative and throughout insignificant. The Wald test for exogeneity suggests that IV estimations are not necessary. The results allow no conclusion.

Table 14K. Coefficients of Net-Gini for *justify-bribe-never*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.049	-0.148	-0.048	-0.041	-0.028
	(0.77)	(-0.25)	(-0.12)	(-0.19)	(-0.13)
p_exog	0.542	0.804	0.892	0.843	0.892
B + Macro	0.160	0.164	0.368	0.279	0.287
	(0.91)	(0.22)	(0.33)	(0.35)	(0.35)
p_exog	0.381	0.817	0.759	0.733	0.729
B + M + Year FE	0.264	-0.149	-0.268	-0.295	-0.297
	(0.90)	(-0.46)	(-0.41)	(-0.41)	(-0.41)
p_exog	0.365	0.693	0.718	0.724	0.725

Table 14L. Coefficients of Net-Gini for *justify-bribe-always*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.029	0.646	0.643	0.422	0.406
	(0.32)	(0.53)	(0.54)	(0.62)	(0.61)
p_exog	0.759	0.702	0.694	0.559	0.562
B + Macro	x				
	x				
p_exog	x				
B + M + Year FE	-0.098	-0.085	-0.141	0.132	0.184
	(-0.27)	(-0.20)	(-0.22)	(0.19)	(0.24)
p_exog	0.797	0.853	0.849	0.842	0.810

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Net-Gini from iv-probit estimations on the sample of OECD countries

If the Gini of gross incomes is instrumented, the estimated coefficients are mostly positive for the binary dependent variable indicating high anti-corruption morals (Table 14M)

as well as its complement indicating low anti-corruption morals (Table 14N). All estimates are insignificant and the Wald test for exogeneity can never be rejected. No conclusion can be derived from these results.

Table 14M. Coefficients of Gross-Gini for *justify-bribe-never*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.027	-0.052	-0.023	-0.036	-0.024
	(0.85)	(-0.31)	(-0.12)	(-0.17)	(-0.12)
p_exog	0.549	0.812	0.938	0.899	0.940
B + Macro	0.103	0.049	0.142	0.191	0.195
	(0.94)	(0.32)	(0.48)	(0.32)	(0.33)
p_exog	0.369	0.633	0.607	0.748	0.744
B + M + Year FE	0.113	0.112	0.122	0.121	0.122
	(1.00)	(0.37)	(0.41)	(0.48)	(0.48)
p_exog	0.358	0.656	0.633	0.556	0.558

Table 14N. Coefficients of Gross-Gini for *justify-bribe-always*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.021	0.254	0.320	x	x
	(0.36)	(0.65)	(0.61)		
p_exog	0.556	0.550	0.625		
B + Macro	0.092	0.253	0.316	0.415	0.408
	(0.56)	(1.00)	(0.82)	(0.71)	(0.68)
p_exog	0.537	0.351	0.496	0.670	0.673
B + M + Year FE	-0.045	0.056	0.058	-0.063	-0.083
	(-0.30)	(0.19)	(0.22)	(-0.30)	(-0.36)
p_exog	0.874	0.851	0.820	0.720	0.676
N	140511.000	98990.000	87882.000	84042.000	83524.000

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

The estimates for twenty year lags and the IV estimates are ambiguous. Results for ten year lags indicate that higher levels of income inequality have a positive effect on anti-corruption morals. In contrast, contemporary values and income inequality when young point to a negative relation between *justify-bribe* and the Gini of gross and net incomes. I interpret these results as indicating a negative relation between levels of income inequality and the civic or moral attitude toward bribing. Higher income inequality comes with a higher probability that respondents find bribing justifiable.

6.6. Conclusion on Income Inequality and Civism

The results for Civism are heterogeneous and mostly ambiguous. There is some indication that the acceptance of not paying fares in public transport decrease with higher levels of income inequality. On the other hand the acceptance of bribing and corruption increases with higher levels of income inequality. For cheating on taxes and government benefits results are ambiguous altogether. From this results I conclude that no effect of income inequality on Civism, as presently defined, can be identified.

7. Income Inequality and Obedience

From a normative perspective obedience is ambivalent. For total institutions like the military, obedience is a basic functioning principle. However, in companies or more general in the production process there is a trade-off between obedience on the one hand and new ideas, innovations and creativity on the other hand. In any case, the societal level of obedience will matter for the optimal choice of corporate governance, making an analysis of its relation to income inequality an interesting task. Since there are only three basic items used to proxy for obedience and since in the literature these concepts are often analyzed together, the relevant literature will be discussed jointly.

Inglehart and Welzel (2005) use *child-obedience* and *respect-authority* as elements in the construction of their modernist/traditionalist-index. Berry et al. (2010) undertake the exercise to compute cross national distance as used in the management literature (e.g. Hofstede 2001) and use *child-obedience* and *respect-authority-good* to calculate "power distance". As already mentioned, Maystre et al. (2009) measure cultural distance in the context of openness to trade, but do so by using all child-qualities, *child-obedience* being one of them. DiTella and Dubra (2010) use *respect-authority* and *instructions-follow* to study Peronist intervention policies in Argentina and the underlying beliefs of the electorate. Extending the analysis from Argentina to Latin America, Arancibia (2008) analyses political trust, also using *respect-authority*. Rice and Feldman (1997) measure the civic culture in Europe and the U.S. using among others *respect-authority*. Finally, Xiao (2005) in the Journal of Human Values argues on ground of descriptive statistics that the Chinese population values economic progress more and human rights less than populations of western countries. He also employs *respect-authority-good* in his study.

7.1. Child-obedience

7.1.1. Descriptive Statistic

Table 15A shows the fraction of respondents by country and wave that indicate "obedience" to be an important child quality. There are 192,675 observations of *child-obedience* for OECD countries. The sample size for each estimated model varies between 174,602 and 70,292 cases.

Table 15A. Mean of *child-obedience* by country and wave

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	0.411	.	0.287	.	0.366	.	0.343
Austria	.	0.254	.	0.177	.	0.140	0.190
Belgium	0.288	0.365	.	0.421	.	0.365	0.367
Canada	0.210	0.282	.	0.311	0.313	.	0.287
Czech Rep	.	0.208	0.140	0.166	.	0.256	0.199
Denmark	0.128	0.203	.	0.144	.	0.142	0.152
Estonia	.	0.188	0.270	0.283	.	0.275	0.256
Finland	.	0.256	0.281	0.298	0.330	0.202	0.274
France	0.175	0.530	.	0.364	0.415	0.275	0.341
Germany	.	0.230	0.123	0.139	0.165	0.101	0.161
Greece	.	.	.	.	.	0.245	0.245
Hungary	0.307	0.448	0.308	0.297	.	0.416	0.360
Iceland	0.155	0.678	.	0.174	.	0.129	0.262
Ireland	0.333	0.352	.	0.479	.	0.573	0.414
Italy	0.259	0.320	.	0.278	0.261	0.316	0.291
Japan	0.061	0.101	0.063	0.043	0.051	.	0.062
Luxembourg	.	.	.	.	.	0.293	0.293
Mexico	.	0.451	0.506	0.586	0.583	.	0.529
Netherlands	0.232	0.330	.	0.254	0.413	0.293	0.301
New Zealand	.	.	0.219	.	0.241	.	0.229
Norway	0.256	0.313	0.259	.	0.287	0.195	0.264
Poland	.	0.420	0.487	0.346	0.486	0.316	0.406
Portugal	.	0.494	.	0.367	.	0.298	0.379
South-Korea	0.129	0.181	0.144	0.132	0.105	.	0.139
Slovakia	.	0.358	0.268	0.262	.	0.352	0.315
Slovenia	.	0.398	0.283	0.251	0.313	0.219	0.291
Spain	0.294	0.419	0.438	0.488	0.369	0.291	0.392
Sweden	0.133	0.249	0.159	0.122	0.162	0.163	0.159
Switzerland	.	0.210	0.262	.	0.206	0.147	0.206
Turkey	.	0.314	0.318	0.401	0.452	1.000	0.432
UK	0.358	0.417	0.509	0.468	0.461	0.418	0.435
USA	0.275	0.379	0.368	0.322	0.287	.	0.325
Mean	0.245	0.328	0.292	0.301	0.313	0.281	0.297

7.1.2. Basic Results from contemporary inequality data

The estimated coefficients for the Gini of net incomes are mostly positive but insignificant (Table 15B). For the Gini of gross incomes the relation to *child-obedience* is ambiguous (Table 15C). Coefficients change the sign and are significant.

Table 15B. Coefficients of contemporary Gini-net for *child-obedience*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.000	0.030	0.028	0.031	0.030	0.027
	(-0.01)	(1.04)	(1.12)	(1.24)	(1.20)	(0.88)
OECD	-0.022	0.035	0.035	0.011	0.010	0.013
	(-1.04)	(1.11)	(1.20)	(0.45)	(0.43)	(0.51)
B + M + Year FE	-0.008	0.042	0.028	0.013	0.013	0.065
	(-0.36)	(1.10)	(0.76)	(0.38)	(0.39)	(1.57)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 15C. Coefficients of contemporary Gini-gross for *child-obedience*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.002	0.006	0.007	0.005	0.005	0.008
	(0.17)	(0.38)	(0.46)	(0.32)	(0.32)	(0.49)
B + Macro	-0.004	0.006	0.011	-0.007	-0.007	-0.012
	(-0.25)	(0.43)	(0.74)	(-0.80)	(-0.82)	(-1.43)
B + M + Year FE	0.017	0.003	0.001	-0.014	-0.013	-0.011
	(1.16)	(0.19)	(0.05)	(-1.21)	(-1.16)	(-0.69)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

7.1.3. Results from lagged inequality data

The relation between historical levels of income inequality and obedience are all ambiguous. Estimations result in positive and negative coefficients for the Gini of gross and net incomes as well as for ten year lags and twenty year lags. The only conclusion that can be drawn from these results is that no association between historical inequality levels and obedience can be identified.

Table 15D. Coefficients of ten-year-lags of Gini-net for *child-obedience*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.012	0.009	0.010	0.010	0.011	0.031
	(-0.72)	(0.37)	(0.39)	(0.38)	(0.40)	(1.46)
B + Macro	-0.009	0.008	0.016	0.005	0.007	-0.029
	(-0.42)	(0.27)	(0.56)	(0.18)	(0.28)	(-0.74)
B + M + Year FE	-0.010	-0.036	-0.016	-0.021	-0.020	-0.093***
	(-0.45)	(-0.99)	(-0.36)	(-0.47)	(-0.45)	(-3.90)

Table 15E. Coefficients of ten-year-lags of Gini-gross for *child-obedience*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.022*	0.000	0.002	0.004	0.005	0.014
	(-2.10)	(0.03)	(0.14)	(0.27)	(0.31)	(1.36)
B + Macro	-0.033*	-0.005	0.003	-0.002	-0.001	-0.025
	(-2.19)	(-0.25)	(0.17)	(-0.14)	(-0.08)	(-1.39)
B + M + Year FE	-0.019	-0.028+	-0.016	-0.008	-0.010	-0.023+
	(-1.26)	(-1.91)	(-1.07)	(-0.59)	(-0.69)	(-1.78)

Table 15F. Coefficients of twenty-year-lags of Gini-net for *child-obedience*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.007	-0.032	-0.043	-0.043	-0.044	-0.021
	(-0.18)	(-0.71)	(-0.98)	(-0.91)	(-0.91)	(-0.43)
B + Macro	0.031	0.009	0.001	0.019	0.021	0.016
	(1.11)	(0.34)	(0.03)	(0.77)	(0.84)	(0.56)
B + M + Year FE	0.017	0.015	0.012	0.028	0.028	0.034*
	(0.72)	(0.71)	(0.61)	(1.56)	(1.53)	(2.49)

Table 15G. Coefficients of ten-year-lags of Gini-gross for *child-obedience*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.002	-0.006	-0.013	-0.014	-0.014	-0.004
	(-0.11)	(-0.21)	(-0.42)	(-0.43)	(-0.41)	(-0.12)
B + Macro	0.007	0.012	0.007	0.002	0.003	-0.009
	(0.44)	(0.76)	(0.43)	(0.14)	(0.20)	(-0.44)
B + M + Year FE	-0.008	0.006	0.007	0.006	0.006	-0.002
	(-0.52)	(0.40)	(0.43)	(0.38)	(0.38)	(-0.09)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

7.1.4. Effect of Inequality when aged eighteen to twenty-five

Inequality experience when young results in a negative association with *child-obedience.* The estimated coefficients are mostly negative, both, for the Gini of gross incomes and the Gini of net incomes. Results however are not statistically significant.

Table 15H. Coefficients of Gini-net when aged 18-25 for *child-obedience*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.002	-0.005	-0.005	-0.004	-0.004	0.000
	(-0.39)	(-0.85)	(-0.75)	(-0.71)	(-0.70)	(0.05)
B + Macro	0.000	-0.002	-0.001	-0.000	-0.000	-0.003
	(0.10)	(-0.52)	(-0.31)	(-0.02)	(-0.03)	(-0.61)
B + M + Year FE	0.002	-0.003	-0.002	-0.001	-0.001	-0.003
	(0.71)	(-0.88)	(-0.55)	(-0.20)	(-0.24)	(-0.50)

Table 15J. Coefficients of Gini-gross when aged 18-25 for *child-obedience*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.000	-0.005	-0.005	-0.004	-0.004	0.000
	(-0.03)	(-0.81)	(-0.77)	(-0.70)	(-0.74)	(0.04)
B + Macro	0.002	-0.002	-0.001	-0.000	-0.000	-0.003
	(0.57)	(-0.48)	(-0.35)	(-0.01)	(-0.09)	(-0.76)
B + M + Year FE	0.004	-0.003	-0.002	-0.001	-0.001	-0.003
	(1.13)	(-0.85)	(-0.61)	(-0.22)	(-0.32)	(-0.65)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

7.1.5. Instrumental Variable Estimation

If the Gini of net incomes is instrumented, results are ambiguous. The first two configurations indicate a negative association. The third configuration, which adds year fixed effects, results in positive coefficients. Since results are insignificant and the test for exogeneity can not be rejected, no further conclusion is derived. For the Gini of gross incomes, IV-estimates are mostly negative but insignificant.

Table 15K. Coefficients of Net-Gini for *child-obedience*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.018	-0.304	-0.231	-0.125	-0.106
	(0.47)	(-0.29)	(-0.28)	(-0.36)	(-0.33)
p_exog	0.563	0.767	0.764	0.664	0.686
B + Macro	-0.032	-0.752	-0.715	-0.733	-0.712
	(-0.39)	(-0.67)	(-0.59)	(-0.68)	(-0.64)
p_exog	0.866	0.674	0.692	0.639	0.647
B + M + Year FE	0.002	0.862	1.039	1.098	0.981
	(0.01)	(0.79)	(0.76)	(0.66)	(0.61)
p_exog	0.984	0.582	0.682	0.755	0.714

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Net-Gini from iv-probit estimations on the sample of OECD countries

Table 15L. Coefficients of Gross-Gini for *child-obedience*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.010	-0.133	-0.148	-0.150	-0.120
	(0.47)	(-0.36)	(-0.28)	(-0.25)	(-0.25)
p_exog	0.718	0.719	0.784	0.804	0.804
B + Macro	-0.022	-0.228	-0.276	-0.407	-0.386
	(-0.38)	(-1.03)	(-0.81)	(-0.69)	(-0.65)
p_exog	0.753	0.326	0.473	0.664	0.661
B + M + Year FE	0.002	-0.446	-0.418	-0.350	-0.353
	(0.03)	(-0.94)	(-0.91)	(-0.83)	(-0.80)
p_exog	0.864	0.530	0.525	0.498	0.519

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

The overall impression for the association between *child-obedience* and income inequality is mixed. Contemporaneous inequality levels indicate a positive association; lagged values point to an ambiguous, inequality when young a negative association between income inequality and obedience. IV-estimates are negative for the Gini of gross incomes and ambiguous for the Gini of net incomes. No stable relation between income inequality and obedience can be identified.

7.2. Instructions-follow

The variable *instructions-follow* and its complement *instructions-convince* are two dependent variables measuring (dis-)obedience. They are constructed from one single survey item asking respondents:

> *People have different ideas about following instructions at work. Some say that one should follow one's superior's instructions even when one does not fully agree with them. Others say that one should follow one's superior's instructions only when one is convinced that they are right. With which of these two opinions do you agree?*
>
> *1 'Follow instructions' 2 'Must be convinced first' 3 'Depends'*

Accordingly, *instructions-follow* is one if respondents answer "Follow instructions" and zero otherwise; *instructions-convince* is one if respondents answer "Must be convinced first" and zero for all other responses. Since there is a third category ("Depends"), both variables are not perfectly correlated so that results need not be symmetric.

7.2.1. Descriptive Statistic

In Table 16A are shown the fractions of respondents per country and survey wave which follow the instructions of their superiors without questioning them. There are 159,127 observations for *instructions-follow*. The sample size for each model varies, ranging from 142,704 to 58,138 cases.

Table 16A. Mean of *instructions-follow* by country and wave

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	.	.	0.489	.	.	.	0.489
Austria	.	0.395	.	0.248	.	0.228	0.288
Belgium	0.370	0.307	.	0.304	.	0.345	0.323
Canada	0.545	0.525	.	0.581	0.439	.	0.518
Czech Rep	.	0.172	0.245	0.313	.	0.250	0.257
Denmark	0.614	0.354	.	0.357	.	0.432	0.441
Estonia	.	0.127	0.264	0.208	.	0.249	0.216
Finland	.	0.146	0.293	0.291	.	0.158	0.230
France	0.243	0.357	.	0.334	.	0.310	0.311
Germany	.	0.424	0.260	0.394	.	0.334	0.364
Greece	.	.	.	.	.	0.405	0.405
Hungary	0.286	0.283	0.357	0.425	.	0.356	0.338
Iceland	0.477	0.380	.	0.423	.	0.327	0.406
Ireland	0.465	0.471	.	0.385	.	0.348	0.420
Italy	0.221	0.285	.	0.269	.	0.291	0.269
Japan	0.360	0.326	.	0.289	.	.	0.323
Luxembourg	.	.	.	.	.	0.318	0.318
Mexico	.	0.388	0.356	0.444	.	.	0.389
Netherlands	0.408	0.384	.	0.283	.	0.298	0.340
New Zealand	.	.	0.350	.	0.325	.	0.339
Norway	0.632	0.617	0.603	.	.	0.472	0.583
Poland	.	0.215	.	0.266	.	0.264	0.251
Portugal	.	0.460	.	0.403	.	0.313	0.383
South-Korea	0.270	0.088	0.163	0.494	.	.	0.250
Slovakia	.	0.159	0.210	0.336	.	0.370	0.297
Slovenia	.	0.195	0.224	0.187	.	0.199	0.201
Spain	0.315	0.316	0.378	0.403	.	0.283	0.336
Sweden	0.409	0.440	0.407	0.371	.	0.277	0.377
Switzerland	.	.	0.333	.	.	0.316	0.324
Turkey	.	0.268	0.233	0.387	.	0.401	0.348
UK	0.496	0.446	.	0.438	.	0.370	0.433
USA	0.673	0.620	0.665	0.647	.	.	0.653
Mean	0.430	0.357	0.348	0.369	0.406	0.318	0.360

7.2.2. Basic Results from contemporary inequality data

The Gini of net incomes has a statistically significant, positive relation to *instructions-follow*. The coefficients for the Gini of gross incomes are also mostly positive. However, there are some negative estimates and most coefficients are insignificant. In countries with a more unequal distribution of after tax income, respondents are more likely to uncritically follow the instructions of their superior.

Table 16B. Coefficients of contemporary Gini-net for *instructions-follow*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.011	0.052*	0.058*	0.082+	0.080+	0.046+
	(0.67)	(2.12)	(2.25)	(1.95)	(1.92)	(1.93)
OECD	0.006	0.046+	0.051+	0.082*	0.079*	0.060*
	(0.34)	(1.89)	(1.91)	(2.10)	(2.05)	(2.48)
B + M + Year FE	-0.001	0.080**	0.073**	0.079**	0.076**	0.072*
	(-0.07)	(3.18)	(2.85)	(3.11)	(3.04)	(2.56)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 16C. Coefficients of contemporary Gini-gross for *instructions-follow*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.004	0.004	0.010	0.015	0.016	0.023***
	(-0.47)	(0.27)	(0.69)	(1.03)	(1.12)	(3.30)
B + Macro	-0.009	-0.001	0.007	0.015	0.015	0.025**
	(-0.84)	(-0.04)	(0.51)	(1.29)	(1.28)	(3.18)
B + M + Year FE	-0.000	0.014	0.014	0.016	0.016	0.021+
	(-0.07)	(0.97)	(1.05)	(1.24)	(1.29)	(1.80)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

7.2.3. Results from lagged inequality data

The estimates for the ten year lags of the Gini of net and gross incomes are significantly negative (Table 16D and 16E). The coefficients for twenty year lags of the Gini of net income are mostly negative but insignificant. The estimation results for twenty year lags of the Gini of gross incomes are significantly negative. In sum, historical inequality values seem to have a negative association with *instructions-follow.* More income inequality in the past reduces the likelihood that respondents say that they uncritically follow instructions of their superiors. These results for historical inequality values contradict those for contemporaneous values.

Table 16D. Coefficients of ten-year-lags of Gini-net for *instructions-follow*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.030*	-0.025	-0.027	-0.022	-0.021	-0.001
	(-1.97)	(-1.19)	(-1.19)	(-1.10)	(-1.07)	(-0.05)
B + Macro	-0.033	-0.080*	-0.075*	-0.070*	-0.071*	-0.072**
	(-1.39)	(-2.53)	(-2.17)	(-1.99)	(-2.11)	(-2.71)
B + M + Year FE	-0.017	-0.087***	-0.096***	-0.088***	-0.086***	-0.083***
	(-1.35)	(-5.11)	(-4.89)	(-5.45)	(-5.32)	(-5.12)

Table 16E. Coefficients of ten-year-lags of Gini-gross for *instructions-follow*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.015	-0.008	-0.008	-0.003	-0.002	0.007
	(-1.50)	(-0.63)	(-0.59)	(-0.25)	(-0.19)	(0.79)
B + Macro	-0.031*	-0.057**	-0.051*	-0.041+	-0.042+	-0.037*
	(-2.06)	(-2.91)	(-2.33)	(-1.73)	(-1.84)	(-2.17)
B + M + Year FE	-0.013	-0.045***	-0.042***	-0.039***	-0.039***	-0.041**
	(-1.53)	(-3.43)	(-3.53)	(-3.30)	(-3.36)	(-2.99)

Table 16F. Coefficients of twenty-year-lags of Gini-net for *instructions-follow*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.014	0.003	0.001	-0.035	-0.033	-0.011
	(0.71)	(0.11)	(0.05)	(-1.15)	(-1.11)	(-0.34)
B + Macro	0.027	-0.041	-0.043	-0.078	-0.077	-0.004
	(0.96)	(-0.67)	(-0.67)	(-0.89)	(-0.89)	(-0.07)
B + M + Year FE	0.022	-0.019	-0.009	-0.004	-0.004	-0.011
	(0.99)	(-0.80)	(-0.35)	(-0.15)	(-0.16)	(-0.46)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 16G. Coefficients of twenty-year-lags of Gini-gross for *instructions-follow*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.005	-0.016	-0.018	-0.032*	-0.031*	-0.033+
	(0.50)	(-1.01)	(-1.15)	(-2.04)	(-1.98)	(-1.89)
B + Macro	0.007	-0.142***	-0.147***	-0.145***	-0.143***	-0.113***
	(0.56)	(-4.64)	(-4.60)	(-4.12)	(-4.08)	(-4.13)
B + M + Year FE	0.016	-0.076***	-0.076***	-0.076***	-0.074***	-0.101***
	(1.16)	(-5.13)	(-4.76)	(-4.75)	(-4.66)	(-5.64)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

7.2.4. Effect of Inequality when aged eighteen to twenty-five

For inequality levels when young no reasonable association between the level of Gini coefficients and *instructions-follow* can be identified. Estimated coefficients often change the sign and are all insignificant.

Table 16H. Coefficients of Gini-net when aged 18-25 for *instructions-follow*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.001	-0.005	-0.006	-0.002	-0.001	0.004
	(0.19)	(-0.74)	(-0.83)	(-0.37)	(-0.21)	(0.69)
B + Macro	-0.001	-0.007	-0.007	-0.003	-0.002	0.001
	(-0.11)	(-1.34)	(-1.37)	(-0.66)	(-0.46)	(0.20)
B + M + Year FE	0.003	-0.004	-0.004	-0.002	-0.001	0.001
	(0.65)	(-0.80)	(-0.86)	(-0.34)	(-0.13)	(0.22)

Table 16J. Coefficients of Gini-gross when aged 18-25 for *instructions-follow*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.003	-0.005	-0.006	-0.002	-0.001	0.004
	(0.51)	(-0.71)	(-0.94)	(-0.45)	(-0.31)	(0.71)
B + Macro	0.001	-0.007	-0.007+	-0.004	-0.003	0.001
	(0.22)	(-1.38)	(-1.66)	(-0.88)	(-0.69)	(0.16)
B + M + Year FE	0.004	-0.004	-0.005	-0.002	-0.002	0.001
	(0.94)	(-0.87)	(-1.18)	(-0.58)	(-0.37)	(0.19)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

7.2.5. Instrumental Variable Estimation

The IV-estimations produced mostly positive but insignificant coefficients for the Gini of gross and net incomes. However, there are sufficient negative estimates to consider the association with *instructions-follow* as ambiguous. The exogeneity hypothesis can not be rejected for any estimation so that IV-estimations seem redundant.

Table 16K. Coefficients of Net-Gini for *instructions-follow*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.048	0.044	0.102	0.066	0.062
	(-0.79)	(0.24)	(0.52)	(0.51)	(0.50)
p_exog	0.465	0.981	0.752	0.976	0.986
B + Macro	-0.077	-0.079	0.007	0.007	0.008
	(-0.93)	(-0.38)	(0.04)	(0.05)	(0.07)
p_exog	0.371	0.601	0.879	0.713	0.728
B + M + Year FE	0.016	x			
	(0.18)	x			
p_exog	0.795	x			

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Net-Gini from iv-probit estimations on the sample of OECD countries

Table 16L. Coefficients of Gross-Gini for *instructions-follow*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.026	0.026	0.083	0.086	0.078
	(-0.73)	(0.22)	(0.37)	(0.33)	(0.34)
p_exog	0.533	0.861	0.736	0.771	0.768
B + Macro	-0.055	-0.035	0.003	0.006	0.007
	(-0.81)	(-0.44)	(0.04)	(0.06)	(0.07)
p_exog	0.444	0.674	0.992	0.975	0.983
B + M + Year FE	0.010	0.042	0.034	0.010	0.014
	(0.20)	(0.57)	(0.46)	(0.13)	(0.19)
p_exog	0.908	0.653	0.731	0.998	0.957

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

In sum there seems to be a positive relation between income inequality today and the attitude that instructions of superiors have to be followed. On the other hand, historical experience of high levels of income inequality seems to reduce the probability that people hold such views.

7.3. Instructions-convince

7.3.1. Descriptive Statistic

Table 17A depicts the fractions of respondents per country and survey wave which follow the instructions of their superiors only if they are convinced. There are 159,127 observations for *instructions-convince.* Sample size for each estimated model varies, ranging from 142,704 to 58,138 cases.

Table 17A. Mean of *instructions-convince* by country and wave

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	.	.	0.407	.	.	.	0.407
Austria	.	0.376	.	0.383	.	0.401	0.387
Belgium	0.361	0.450	.	0.442	.	0.419	0.429
Canada	0.323	0.286	.	0.311	0.421	.	0.341
Czech Rep	.	0.506	0.249	0.347	.	0.283	0.334
Denmark	0.246	0.537	.	0.264	.	0.324	0.339
Estonia	.	0.438	0.572	0.307	.	0.308	0.396
Finland	.	0.454	0.629	0.603	.	0.417	0.532
France	0.609	0.475	.	0.406	.	0.438	0.473
Germany	.	0.284	0.592	0.262	.	0.279	0.344
Greece	.	.	.	.	.	0.358	0.358
Hungary	0.072	0.593	0.250	0.343	.	0.357	0.312
Iceland	0.444	0.331	.	0.326	.	0.358	0.367
Ireland	0.269	0.413	.	0.368	.	0.314	0.338
Italy	0.418	0.469	.	0.331	.	0.330	0.388
Japan	0.095	0.109	.	0.095	.	.	0.099
Luxembourg	.	.	.	.	.	0.293	0.293
Mexico	.	0.377	0.166	0.429	.	.	0.299
Netherlands	0.366	0.473	.	0.312	.	0.347	0.371

New Zealand	.	.	0.235	.	0.249	.	0.241
Norway	0.329	0.340	0.332	.	.	0.220	0.308
Poland	.	0.598	.	0.483	.	0.432	0.494
Portugal	.	0.374	.	0.435	.	0.452	0.423
South-Korea	0.345	0.478	0.346	0.506	.	.	0.423
Slovakia	.	0.525	0.214	0.317	.	0.332	0.318
Slovenia	.	0.580	0.652	0.478	.	0.484	0.543
Spain	0.452	0.504	0.523	0.417	.	0.406	0.465
Sweden	0.330	0.415	0.112	0.334	.	0.245	0.294
Switzerland	.	.	0.425	.	.	0.373	0.399
Turkey	.	0.192	0.077	0.555	.	0.423	0.394
UK	0.366	0.431	.	0.328	.	0.342	0.370
USA	0.253	0.231	0.313	0.207	.	.	0.253
Mean	0.328	0.409	0.349	0.381	0.371	0.359	0.371

7.3.2. Basic Results from contemporary inequality data

Since *instructions-convince* is the complement of *instructions-follow*, a negative relation between levels of the Gini coefficient and *instructions-convince* should be expected. However, for the Gini of net incomes there is no straight effect whatsoever (insignificant estimates with changing algebraic sign). For the Gini of gross incomes most estimated coefficients are in fact negative. The estimates for the second configuration are significant at levels of five to ten percent.

Table 17B. Coefficients of contemporary Gini-net for *instructions-convince*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.001	0.040	0.046	0.046	0.046	-0.021
	(-0.09)	(0.66)	(0.73)	(0.68)	(0.69)	(-0.33)
OECD	0.024	0.011	0.012	0.002	0.002	-0.041
	(0.82)	(0.15)	(0.17)	(0.02)	(0.02)	(-0.58)
B + M + Year FE	0.019	-0.025	-0.033	-0.035	-0.030	0.002
	(0.94)	(-0.54)	(-0.58)	(-0.62)	(-0.54)	(0.07)

Table 17C. Coefficients of contemporary Gini-gross for *instructions-convince*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.018	-0.058	-0.060	-0.062	-0.059	-0.036
	(-1.57)	(-1.53)	(-1.55)	(-1.60)	(-1.59)	(-1.09)
B + Macro	-0.011	-0.054*	-0.052^{+}	-0.064*	-0.064*	-0.056^{+}
	(-0.74)	(-2.00)	(-1.76)	(-2.27)	(-2.26)	(-1.94)
B + M + Year FE	0.007	-0.023	-0.025	-0.026	-0.026	-0.012
	(0.49)	(-1.00)	(-1.11)	(-1.21)	(-1.21)	(-1.03)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

7.3.3. Results from lagged inequality data

For the values of the Gini of net incomes lagged ten years, the relation to *instructions-convince* is significantly negative for the basic configuration without macro controls and significantly positive if macro controls and year fixed effects are included. Since no specification is a priory more true, we take these results as inconclusive. For the ten year lags

of the Gini of gross incomes resulting coefficients are all negative, sometimes significantly so. For twenty year lags, the results for both, the Gini of gross and net incomes are inconclusive with different signs with and without macro controls. Only the Gini of gross incomes ten years ago has a negative association with *instructions-convince*.

Table 17D. Coefficients of ten-year-lags of Gini-net for *instructions-convince*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.025	-0.036^{+}	-0.041*	-0.043*	-0.043*	-0.002
	(-1.43)	(-1.81)	(-2.00)	(-2.05)	(-2.10)	(-0.17)
B + Macro	0.021	0.018	0.036	0.022	0.012	0.054
	(1.21)	(0.61)	(0.90)	(0.50)	(0.30)	(1.27)
B + M + Year FE	0.028^{+}	0.061^{+}	0.082*	0.082^{+}	0.075^{+}	0.031
	(1.68)	(1.87)	(2.01)	(1.87)	(1.80)	(1.40)

Table 17E. Coefficients of ten-year-lags of Gini-gross for *instructions-convince*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.023*	-0.032*	-0.037**	-0.038**	-0.037**	-0.015^{+}
	(-2.54)	(-2.48)	(-2.59)	(-2.63)	(-2.76)	(-1.66)
B + Macro	-0.015	-0.031	-0.030	-0.059	-0.062	-0.034
	(-0.99)	(-1.16)	(-0.88)	(-1.34)	(-1.51)	(-1.25)
B + M + Year FE	-0.002	-0.009	-0.016	-0.017	-0.018	-0.025
	(-0.15)	(-0.37)	(-0.51)	(-0.53)	(-0.60)	(-1.51)

Table 17F. Coefficients of twenty-year-lags of Gini-net for *instructions-convince*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.016	0.007	0.003	0.012	0.010	0.030
	(0.58)	(0.22)	(0.08)	(0.32)	(0.27)	(0.61)
B + Macro	-0.013	-0.053	-0.066	-0.062	-0.062	-0.056
	(-0.30)	(-0.63)	(-0.82)	(-0.70)	(-0.70)	(-0.47)
B + M + Year FE	-0.033	-0.086	-0.103	-0.116*	-0.116*	-0.170***
	(-0.95)	(-1.32)	(-1.62)	(-2.10)	(-2.09)	(-6.28)

Table 17G. Coefficients of twenty-year-lags of Gini-gross for *instructions-convince*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.026*	0.049	0.047	0.053	0.052	0.037
	(2.56)	(1.56)	(1.46)	(1.61)	(1.58)	(1.01)
B + Macro	0.024**	0.040	0.032	0.021	0.020	0.030
	(2.66)	(0.48)	(0.38)	(0.23)	(0.22)	(0.21)
B + M + Year FE	-0.021	-0.074	-0.066	-0.068	-0.068	-0.118*
	(-1.22)	(-1.30)	(-1.03)	(-1.06)	(-1.06)	(-2.44)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

7.3.4. Effect of Inequality when aged eighteen to twenty-five

The mean of the Gini coefficient over the years when the respondent was aged eighteen to twenty-five has a negative and significant relation with *instructions-convince*, both for the Gini of gross and net incomes. The results for the Gini of gross incomes are in line with the negative association for contemporaneous and historical levels of inequality.

Table 17H. Coefficients of Gini-net when aged 18-25 for *instructions-convince*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.019***	-0.018**	-0.019**	-0.018*	-0.019*	-0.007
	(-3.68)	(-2.96)	(-2.73)	(-2.46)	(-2.52)	(-1.25)
B + Macro	-0.010*	-0.009	-0.010	-0.010	-0.011+	-0.005
	(-1.98)	(-1.54)	(-1.55)	(-1.53)	(-1.72)	(-0.61)
B + M + Year FE	-0.008+	-0.007	-0.009	-0.007	-0.008	-0.004
	(-1.69)	(-1.33)	(-1.45)	(-1.23)	(-1.43)	(-0.52)

Table 17J. Coefficients of Gini-gross when aged 18-25 for *instructions-convince*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.019***	-0.018**	-0.018**	-0.018*	-0.018*	-0.007
	(-3.94)	(-3.10)	(-2.74)	(-2.53)	(-2.56)	(-1.31)
B + Macro	-0.011*	-0.009+	-0.010	-0.009	-0.011+	-0.005
	(-2.50)	(-1.66)	(-1.56)	(-1.62)	(-1.79)	(-0.72)
B + M + Year FE	-0.009*	-0.007	-0.008	-0.007	-0.008	-0.004
	(-2.31)	(-1.54)	(-1.53)	(-1.40)	(-1.58)	(-0.59)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

7.3.5. Instrumental Variable Estimation

The coefficients emerging from IV-estimation are mostly positive for the Gini of net and gross incomes. Surprisingly coefficients have the same sign as for instructions-follow. However, results are insignificant and the Wald test for exogeneity suggests that IV estimation is not necessary.

Table 17K. Coefficients of Net-Gini for *instructions-convince*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.006	x			
	(-0.14)	x			
p_exog	0.691	x			
B + Macro	-0.023	0.172	0.201	0.140	0.133
	(-0.17)	(1.03)	(0.96)	(1.16)	(1.15)
p_exog	0.752	0.303	0.311	0.202	0.205
B + M + Year FE	0.003	x			
	(0.04)	x			
p_exog	0.873	x			

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Net-Gini from iv-probit estimations on the sample of OECD countries

Table 17L. Coefficients of Gross-Gini for *instructions-convince*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.004	0.169	0.241	x	
	(-0.16)	(0.71)	(0.55)	x	
p_exog	0.798	0.394	0.569	x	
B + Macro	-0.018	0.073	0.108	0.107	0.101
	(-0.20)	(0.98)	(0.86)	(0.72)	(0.72)
p_exog	0.940	0.171	0.231	0.293	0.286
B + M + Year FE	0.001	0.006	0.021	0.027	0.031
	(0.02)	(0.08)	(0.30)	(0.36)	(0.42)
p_exog	0.970	0.775	0.590	0.557	0.509

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

For the Gini of net incomes results are ambiguous for contemporary and historical values. Only the inequality levels of net income when young have a significant negative relationship with *instructions-convince*. The coefficients estimated for the Gini of gross incomes show a significant negative association with the dependent variable for contemporaneous and historical values. While results for the post-tax income inequality are ambiguous, higher income inequality before taxes and transfers reduce the probability that subordinates question the instructions of their superiors.

7.4. Respect-authority-good

To analyse the effect of income inequality on the symbolic valuation of authority, a single survey item is used to code two complementary binary dependent variables. The survey question used to code *respect-authority-good* and *respect-authority-bad* has the following wording:

> *I'm going to read out a list of various changes in our way of life that might take place in the near future. Please tell me for each one, if it were to happen, whether you think it would be a good thing, a bad thing, or don't you mind? Greater respect for authority. 1 'Good thing' 2 'Don't mind' 3 'Bad thing'*

Both, respect-authority-good and *respect-authority-bad* are binary variables, taking the value one if the response is "Good thing" and "Bad thing" respectively and zero otherwise. The survey item asks respondents to judge potential future developments in "our way of life". The reference to "our way of life" in the future introduces considerable interpretation bias in the question. Still, a general attitude toward authority can be derived from this question.

7.4.1. Descriptive Statistic

The fraction of respondents per country and survey wave which find that more respect would be a good thing for society are shown in Table 18A. There are 185,942 observations for *respect-authority-good.* The sample size for each model varies, ranging from 169,066 to 67,798 cases.

Table 18A. Mean of *respect-authority-good* by country and wave

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	0.683	.	0.727	.	0.588	.	0.674
Austria	.	0.474	.	0.401	.	0.517	0.464
Belgium	0.600	0.493	.	0.627	.	0.793	0.606
Canada	0.756	0.642	.	0.685	0.712	.	0.695
Czech Rep	.	0.617	0.465	0.522	.	0.537	0.556
Denmark	0.359	0.349	.	0.382	.	0.617	0.444

Estonia	.	.	0.454	0.436	.	0.455	0.450
Finland	.	0.262	0.272	0.392	0.430	0.385	0.356
France	0.568	0.592	.	0.692	0.858	0.782	0.703
Germany	.	0.404	0.313	0.517	0.520	0.476	0.440
Greece	.	.	.	.	.	0.233	0.233
Hungary	0.714	0.611	0.585	0.674	.	0.617	0.646
Iceland	0.463	0.423	.	0.469	.	0.520	0.469
Ireland	0.845	0.825	.	0.780	.	0.724	0.799
Italy	0.619	0.472	.	0.513	0.486	0.693	0.550
Japan	0.065	0.055	0.069	0.042	0.033	.	0.052
Luxembourg	.	.	.	.	.	0.586	0.586
Mexico	.	0.654	0.625	0.754	0.859	.	0.712
Netherlands	0.569	0.524	.	0.671	0.732	0.788	0.666
New Zealand	.	.	0.528	.	0.540	.	0.533
Norway	0.383	0.321	0.315	.	0.311	0.340	0.333
Poland	.	0.731	0.583	0.551	0.471	0.448	0.575
Portugal	.	0.746	.	0.777	.	0.879	0.810
South-Korea	0.103	0.136	0.161	0.194	0.272	.	0.176
Slovakia	.	0.544	0.423	0.684	.	0.653	0.579
Slovenia	.	0.660	0.365	0.433	0.382	0.493	0.470
Spain	0.760	0.676	0.719	0.595	0.815	0.768	0.704
Sweden	0.315	0.216	0.208	0.220	0.239	0.210	0.232
Switzerland	.	0.454	0.330	.	.	0.640	0.475
Turkey	.	0.645	0.654	0.658	0.559	0.609	0.635
UK	0.699	0.732	0.814	0.702	0.787	0.818	0.760
USA	0.850	0.772	0.770	0.712	0.604	.	0.760
Mean	0.589	0.542	0.490	0.549	0.553	0.595	0.553

7.4.2. Basic Results from contemporary inequality data

The distribution of income as measured by the Gini coefficient does not exhibit a clearly identifiable relation with *respect-authority-good*, neither for the Gini of net incomes (Table 18B), nor for the Gini of gross incomes (Table 18C). For both measures of income inequality, the inclusion of year fixed effects result in negative coefficients, while without these year dummies, most coefficients are positive.

Table 18B. Coefficients of contemporary Gini-net for *respect-authority-good*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.032	0.049	0.051	0.059	0.056	0.053
	(-1.33)	(1.19)	(1.25)	(1.30)	(1.20)	(1.07)
OECD	-0.004	0.050	0.054	0.057	0.054	0.057
	(-0.15)	(1.48)	(1.55)	(1.34)	(1.23)	(1.18)
B + M + Year FE	-0.062^{+}	-0.007	0.001	-0.016	-0.016	-0.048
	(-1.82)	(-0.15)	(0.03)	(-0.32)	(-0.33)	(-0.99)

Table 18C. Coefficients of contemporary Gini-gross for *respect-authority-good*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.001	0.027	0.026	0.027	0.026	0.023
	(-0.10)	(1.40)	(1.25)	(1.24)	(1.14)	(1.03)
B + Macro	0.022**	0.030^{+}	0.030^{+}	0.029	0.028	0.025
	(2.59)	(1.86)	(1.66)	(1.34)	(1.30)	(1.01)
B + M + Year FE	0.002	-0.001	0.002	-0.014	-0.013	-0.036*
	(0.14)	(-0.03)	(0.10)	(-0.70)	(-0.65)	(-2.22)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

7.4.3. Results from lagged inequality data

The estimated results for the Gini of net incomes ten years ago are ambiguous. The estimates for ten year lags of the Gini of gross incomes have a significantly positive association with *respect-authority-good*. For twenty year lags the results are consistently negative and significant for both, the Gini of gross and net incomes. In countries with higher income inequality twenty years ago, there is a lower probability that respondents consider a society with more respect for authority a good thing.

Table 18D. Coefficients of ten-year-lags of Gini-net for *respect-authority-good*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.003	0.013	0.005	0.010	0.012	0.005
	(0.13)	(0.68)	(0.28)	(0.55)	(0.63)	(0.23)
B + Macro	-0.003	-0.023	-0.036	-0.035	-0.030	-0.101^{+}
	(-0.12)	(-0.69)	(-1.09)	(-0.89)	(-0.76)	(-1.67)
B + M + Year FE	-0.013	-0.020	-0.036	-0.022	-0.016	-0.020
	(-0.48)	(-0.59)	(-0.96)	(-0.61)	(-0.47)	(-0.39)

Table 18E. Coefficients of ten-year-lags of Gini-gross for *respect-authority-good*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.026^{+}	0.033*	0.029*	0.035*	0.036*	0.034*
	(1.92)	(2.45)	(2.07)	(2.54)	(2.54)	(2.48)
B + Macro	0.036**	0.030	0.023	0.036^{+}	0.038^{+}	0.033
	(2.75)	(1.51)	(1.12)	(1.79)	(1.85)	(1.22)
B + M + Year FE	0.009	0.021	0.014	0.024	0.020	0.005
	(0.59)	(0.90)	(0.54)	(0.92)	(0.78)	(0.19)

Table 18F. Coefficients of twenty-year-lags of Gini-net for *respect-authority-good*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.042	-0.052	-0.053	-0.063	-0.065	-0.099**
	(-1.35)	(-1.18)	(-1.16)	(-1.25)	(-1.23)	(-2.69)
B + Macro	-0.064*	-0.079*	-0.082*	-0.103***	-0.104***	-0.143***
	(-2.52)	(-2.45)	(-2.42)	(-3.72)	(-3.85)	(-7.91)
B + M + Year FE	-0.036	-0.064**	-0.068**	-0.090***	-0.091***	-0.107***
	(-1.50)	(-2.98)	(-3.02)	(-4.44)	(-4.56)	(-4.96)

Table 18G. Coefficients of twenty-year-lags of Gini-gross for *respect-authority-good*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.024*	-0.027	-0.032	-0.035	-0.036	-0.044
	(-2.36)	(-1.08)	(-1.18)	(-1.28)	(-1.26)	(-1.51)
B + Macro	-0.029**	-0.052*	-0.058*	-0.064**	-0.064**	-0.081**
	(-3.08)	(-2.26)	(-2.51)	(-2.84)	(-2.82)	(-2.90)
B + M + Year FE	-0.021*	-0.030*	-0.035*	-0.035*	-0.034*	-0.044*
	(-2.01)	(-2.17)	(-2.37)	(-2.54)	(-2.43)	(-2.36)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

7.4.4. Effect of Inequality when aged eighteen to twenty-five

The inequality levels when the respondent was young do not have an identifiable relation with *respect-authority-good*. Estimated coefficients have positive and negative signs and no statistical significance. This is true for the Gini of gross and net income.

Table 18H. Coefficients of Gini-net when aged 18-25 for *respect-authority-good*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.004	-0.001	-0.001	0.000	0.001	0.001
	(0.68)	(-0.31)	(-0.21)	(0.02)	(0.14)	(0.10)
B + Macro	0.004	-0.004	-0.003	-0.001	-0.001	-0.003
	(0.77)	(-0.89)	(-0.53)	(-0.23)	(-0.24)	(-0.42)
B + M + Year FE	0.002	-0.004	-0.003	-0.001	-0.001	-0.001
	(0.32)	(-0.88)	(-0.52)	(-0.24)	(-0.22)	(-0.11)

Table 18J. Coefficients of Gini-gross when aged 18-25 for *respect-authority-good*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.007	0.001	0.000	0.002	0.002	0.003
	(1.12)	(0.11)	(0.08)	(0.30)	(0.33)	(0.38)
B + Macro	0.007	-0.003	-0.002	-0.000	-0.001	-0.001
	(1.26)	(-0.55)	(-0.35)	(-0.06)	(-0.13)	(-0.19)
B + M + Year FE	0.005	-0.003	-0.002	-0.001	-0.001	0.000
	(0.93)	(-0.54)	(-0.35)	(-0.10)	(-0.14)	(0.02)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

7.4.5. Instrumental Variable Estimation

Instrumenting the Gini of net incomes, estimations result in positive and negative coefficients. If the Gini of gross incomes is used, most estimates have a positive sign. However, the only significant result is the estimation of model 1 in configuration 3. This coefficient is significantly negative and the Wald test for exogeneity can be rejected. No conclusion is derived from these results.

Table 18K. Coefficients of Net-Gini for *respect-authority-good*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.050	0.569	0.544	0.342	0.380
	(-0.81)	(0.45)	(0.45)	(0.53)	(0.55)
p_exog	0.468	0.737	0.731	0.666	0.656
B + Macro	-0.164	0.310	0.315	0.257	0.317
	(-0.95)	(0.32)	(0.32)	(0.30)	(0.33)
p_exog	0.377	0.781	0.786	0.796	0.773
B + M + Year FE	-0.292	-0.401	-0.631	-0.758	-0.694
	(-1.60)	(-0.49)	(-0.37)	(-0.28)	(-0.35)
p_exog	0.232	0.649	0.754	0.830	0.779

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Net-Gini from iv-probit estimations on the sample of OECD countries

Table 18L. Coefficients of Gross-Gini for *respect-authority-good*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.029	0.271	0.345	0.350	0.355
	(-0.83)	(0.50)	(0.46)	(0.43)	(0.48)
p_exog	0.230	0.699	0.751	0.772	0.754
B + Macro	-0.102	0.087	0.123	0.177	0.205
	(-1.16)	(0.45)	(0.39)	(0.26)	(0.30)
p_exog	0.189	0.736	0.752	0.824	0.802
B + M + Year FE	-0.127*	0.199	0.208	0.159	0.192
	(-2.16)	(0.49)	(0.52)	(0.55)	(0.57)
p_exog	0.091	0.650	0.635	0.577	0.575

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

There is a tendency for a positive relation between inequality levels ten years ago and the valuation of authority as a good thing. In contrast, twenty year lags have a significant negative relation with *respect-authority-good*. The relation between income inequality and the belief that more respect for authority is a good thing remains ambiguous.

7.5. Respect-authority-bad

Table 19A depicts the fractions of respondents per country and survey wave which find that more respect would be a bad thing for society. There are 185,942 observations for *respect-authority-bad*. The sample size for each model varies, ranging from 169,066 to 67,798 cases.

7.5.1. Descriptive Statistic

Table 19A. Mean of *respect-authority-bad* by country and wave

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	0.074	.	0.092	.	0.062	.	0.078
Austria	.	0.296	.	0.380	.	0.298	0.325
Belgium	0.077	0.206	.	0.123	.	0.060	0.135
Canada	0.074	0.215	.	0.077	0.065	.	0.107
Czech Rep	.	0.162	0.116	0.224	.	0.197	0.177
Denmark	0.440	0.377	.	0.375	.	0.214	0.341
Estonia	.	.	0.119	0.110	.	0.122	0.118
Finland	.	0.573	0.391	0.387	0.306	0.378	0.391
France	0.170	0.198	.	0.098	0.038	0.050	0.105
Germany	.	0.376	0.520	0.282	0.174	0.290	0.336
Greece	.	.	.	.	.	0.185	0.185
Hungary	0.136	0.084	0.269	0.174	.	0.152	0.153
Iceland	0.121	0.159	.	0.144	.	0.105	0.132
Ireland	0.055	0.075	.	0.068	.	0.073	0.067
Italy	0.094	0.149	.	0.094	0.085	0.056	0.101
Japan	0.797	0.772	0.116	0.776	0.822	.	0.665
Luxembourg	.	.	.	.	.	0.133	0.133
Mexico	.	0.142	0.082	0.065	0.035	.	0.081
Netherlands	0.127	0.236	.	0.128	0.052	0.062	0.116
New Zealand	.	.	0.095	.	0.058	.	0.079
Norway	0.381	0.481	0.452	.	0.401	0.390	0.424
Poland	.	0.149	0.077	0.069	0.119	0.117	0.113
Portugal	.	0.067	.	0.050	.	0.039	0.051
South-Korea	0.718	0.694	0.464	0.558	0.431	.	0.567
Slovakia	.	0.130	0.090	0.109	.	0.059	0.099
Slovenia	.	0.129	0.163	0.211	0.168	0.203	0.176
Spain	0.080	0.107	0.062	0.110	0.046	0.094	0.091
Sweden	0.499	0.596	0.577	0.390	0.586	0.538	0.512
Switzerland	.	0.265	0.263	.	.	0.213	0.247
Turkey	.	0.088	0.240	0.091	0.075	0.147	0.125
UK	0.067	0.094	0.044	0.075	0.047	0.049	0.064
USA	0.049	0.153	0.044	0.061	0.069	.	0.076
Mean	0.206	0.235	0.212	0.192	0.180	0.160	0.199

7.5.2. Basic Results from contemporary inequality data

The estimated coefficients for the Gini of gross and net incomes have a significant negative sign for configurations 1 and 2. If however year fixed effects are included in the regression equation, most estimated coefficients are positive. The relation between contemporary levels of income inequality and *respect-authority-bad* remain ambiguous.

Table 19B. Coefficients of contemporary Gini-net for *respect-authority-bad*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.007	-0.084	-0.082	-0.108*	-0.106^{+}	-0.155**
	(-0.17)	(-1.49)	(-1.40)	(-2.04)	(-1.96)	(-2.84)
OECD	0.017	-0.066	-0.061	-0.095^{+}	-0.092^{+}	-0.150***
	(0.31)	(-1.14)	(-1.02)	(-1.77)	(-1.71)	(-3.85)
B + M + Year FE	0.102*	-0.014	-0.003	0.015	0.018	0.013
	(2.55)	(-0.31)	(-0.05)	(0.32)	(0.39)	(0.23)

Table 19C. Coefficients of contemporary Gini-gross for *respect-authority-bad*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.020	-0.055^{+}	-0.055^{+}	-0.061*	-0.061*	-0.072**
	(-1.31)	(-1.86)	(-1.85)	(-2.06)	(-2.08)	(-2.62)
B + Macro	-0.015	-0.056*	-0.055*	-0.064**	-0.064**	-0.073***
	(-0.95)	(-2.29)	(-2.23)	(-2.60)	(-2.59)	(-3.44)
B + M + Year FE	0.023**	-0.021	-0.019	0.007	0.007	0.029
	(2.74)	(-1.29)	(-1.15)	(0.47)	(0.45)	(1.23)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

7.5.3. Results from lagged inequality data

There are no resilient results for historical Gini levels. The estimated results for ten and twenty year lags for the Gini of gross and net incomes are ambiguous and mostly insignificant. There is no clearly identifiable relation between the levels of income inequality ten or twenty years ago with *respect-authority-bad*.

Table 19D. Coefficients of ten-year-lags of Gini-net for *respect-authority-bad*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.001	-0.003	0.003	-0.011	-0.013	-0.017
	(0.04)	(-0.13)	(0.17)	(-0.71)	(-0.80)	(-0.84)
B + Macro	0.006	0.012	0.017	0.014	0.014	0.097^{+}
	(0.31)	(0.39)	(0.53)	(0.39)	(0.42)	(1.91)
B + M + Year FE	0.001	0.003	0.002	-0.012	-0.014	0.010
	(0.02)	(0.08)	(0.04)	(-0.35)	(-0.42)	(0.22)

Table 19E. Coefficients of ten-year-lags of Gini-gross for *respect-authority-bad*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.029*	-0.030	-0.026	-0.040*	-0.042*	-0.052**
	(-2.25)	(-1.63)	(-1.40)	(-2.44)	(-2.49)	(-2.78)
B + Macro	-0.024^{+}	-0.019	-0.016	-0.032	-0.033	-0.057^{+}
	(-1.96)	(-0.84)	(-0.66)	(-1.42)	(-1.45)	(-1.70)
B + M + Year FE	0.003	0.001	0.005	-0.004	-0.005	-0.020
	(0.22)	(0.06)	(0.19)	(-0.18)	(-0.21)	(-0.73)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 19F. Coefficients of twenty-year-lags of Gini-net for *respect-authority-bad*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.004	-0.024	-0.022	0.016	0.017	0.019
	(-0.12)	(-0.69)	(-0.61)	(0.48)	(0.49)	(0.39)
B + Macro	-0.010	-0.001	-0.000	0.022	0.022	0.063
	(-0.39)	(-0.05)	(-0.01)	(0.90)	(0.87)	(0.99)
B + M + Year FE	-0.089*	-0.036	-0.031	-0.015	-0.015	-0.025
	(-2.45)	(-1.14)	(-0.99)	(-0.46)	(-0.47)	(-0.64)

Table 19G. Coefficients of twenty-year-lags of Gini-gross for *respect-authority-bad*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.019	0.003	0.008	0.020	0.021	0.032
	(0.85)	(0.09)	(0.29)	(0.70)	(0.70)	(0.74)
B + Macro	0.013	0.028	0.032	0.037	0.037	0.092
	(0.58)	(0.97)	(1.16)	(1.35)	(1.31)	(1.42)
B + M + Year FE	-0.024	-0.002	0.002	-0.002	-0.003	0.006
	(-0.77)	(-0.07)	(0.10)	(-0.09)	(-0.13)	(0.17)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

7.5.4. Effect of Inequality when aged eighteen to twenty-five

The mean Gini levels when aged eighteen to twenty-five have a consistently negative relation with *respect-authority-bad*. For the Gini of net incomes all estimates are negative, a lot of them significantly so. The estimates obtained for the Gini of gross incomes are also negative but only three out of eighteen coefficients are significant.

Table 19H. Coefficients of Gini-net when aged 18-25 for *respect-authority-bad*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.015+	-0.009	-0.008	-0.010	-0.011	-0.009
	(-1.86)	(-1.32)	(-1.12)	(-1.35)	(-1.40)	(-0.98)
B + Macro	-0.016*	-0.011	-0.011	-0.012+	-0.012+	-0.006
	(-2.27)	(-1.45)	(-1.40)	(-1.70)	(-1.67)	(-0.71)
B + M + Year FE	-0.012+	-0.012	-0.013	-0.014*	-0.014*	-0.008
	(-1.82)	(-1.56)	(-1.55)	(-2.06)	(-2.06)	(-1.05)

Table 19J. Coefficients of Gini-gross when aged 18-25 for *respect-authority-bad*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.017*	-0.009	-0.008	-0.010	-0.010	-0.009
	(-2.05)	(-1.25)	(-1.06)	(-1.26)	(-1.28)	(-0.92)
B + Macro	-0.017*	-0.009	-0.009	-0.010	-0.009	-0.004
	(-2.38)	(-1.17)	(-1.11)	(-1.32)	(-1.28)	(-0.42)
B + M + Year FE	-0.014*	-0.010	-0.010	-0.011	-0.011	-0.005
	(-2.04)	(-1.27)	(-1.25)	(-1.62)	(-1.62)	(-0.66)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

7.5.5. Instrumental Variable Estimation

Instrumenting the Gini of net incomes, negative coefficients are obtained for estimations without year fixed effect and positive one if year fixed effects are included. Accordingly, no association with *respect-authority-bad* can be derived. IV-estimations for the

Gini of gross incomes result in consistently negative, but insignificant coefficients. The Wald test for exogeneity can never be rejected.

Table 19K. Coefficients of Net-Gini for *respect-authority-bad*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.111	-0.663	-0.679	-0.386	-0.392
	(-1.55)	(-0.57)	(-0.61)	(-0.62)	(-0.60)
p_exog	0.265	0.702	0.687	0.634	0.639
B + Macro	-0.114	-0.305	-0.399	-0.345	-0.368
	(-0.68)	(-0.34)	(-0.37)	(-0.41)	(-0.41)
p_exog	0.555	0.777	0.759	0.746	0.742
B + M + Year FE	-0.119	0.291	0.515	0.332	0.281
	(-0.36)	(0.45)	(0.34)	(0.21)	(0.28)
p_exog	0.599	0.650	0.755	0.840	0.794

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Net-Gini from iv-probit estimations on the sample of OECD countries

Table 19L. Coefficients of Gross-Gini for *respect-authority-bad*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.060	-0.318	-0.410	-0.378	-0.362
	(-1.39)	(-0.64)	(-0.68)	(-0.51)	(-0.51)
p_exog	0.372	0.656	0.708	0.756	0.747
B + Macro	-0.073	-0.080	-0.147	-0.215	-0.220
	(-0.63)	(-0.54)	(-0.52)	(-0.34)	(-0.35)
p_exog	0.645	0.754	0.693	0.795	0.783
B + M + Year FE	-0.047	-0.141	-0.159	-0.063	-0.072
	(-0.37)	(-0.48)	(-0.50)	(-0.37)	(-0.38)
p_exog	0.680	0.671	0.658	0.699	0.690

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

The level of income inequality when the respondent was young has a negative association with *respect-authority-bad*. Most estimates for contemporaneous levels and the IV-estimations are negative, too. Results for historic inequality values are ambiguous. Accordingly, a negative relation between income inequality and *respect-authority-bad* can be derived. Higher levels of income inequality reduce the probability that respondents find more respect for authority a bad thing.

7.6. Conclusion on Income Inequality and Obedience

While for each individual item the empirical evidence is not particularly strong, overall a clear image surges. Obedience as an important child quality has some weak indication of a positive relation with income inequality. The attitude to strictly follow instructions also has a weak positive association with income inequality. In line with this, the attitude that the respondent needs to be convinced to follow instructions is mostly negatively related to levels of income inequality. The view that more authority is a good thing, is more likely in countries with higher levels of income inequality. The contrary view that more authority is a bad thing, is less likely in countries with higher levels of income inequality. In

sum, each items points to a positive association between obedience and levels of income inequality as measured by the Gini of gross or net incomes. In countries with higher levels of income inequality, people are more likely to teach their children obedience, blindly follow instructions and find more respect for authority in society a good thing.

8. Income Inequality and Honesty

Honesty refers to truth telling and rule abiding behaviour. More honesty should lower transaction costs, reduce corruption and increase trust. However, the unconditional correlation coefficient by country and wave between trust and the presently used variable to measure honesty is no higher than .243.

8.1. Justify-lying

To measure honesty, respondents are asked:

Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between, using this card. (Read out statements. Code one answer for each statement). Lying in your own interest

1 'Never justifiable' 10 'Always justifiable'

Guiso et al. (2010) included this item into their concept of civic capital.

8.1.1. Descriptive Statistic

Table 20A shows the mean of *justify-lying* by country and survey wave. There are 123,634 observations for *justify-lying*. The sample size for each estimated model varies, ranging from 110,578 to 42,495 cases.

Table 20A. Mean of *justify-lying* by country and wave

country\wave	*1980-1984*	*1989-1993*	*1999-2004*	*2008-2009*	Mean
Austria	.	8.266	7.925	7.781	7.988
Belgium	7.645	7.055	7.385	7.346	7.290
Canada	8.317	8.203	.	.	8.251
Czech Rep	.	7.730	8.217	7.839	7.897
Denmark	8.864	8.913	9.016	8.963	8.939
Estonia	.	8.416	7.988	8.526	8.343
Finland	.	8.128	8.150	8.435	8.260
France	7.488	7.258	7.326	7.878	7.507
Germany	.	7.717	7.805	8.046	7.832
Greece	.	.	7.896	8.540	8.268
Hungary	.	7.297	8.496	8.270	8.056
Iceland	9.277	9.236	9.253	9.187	9.240
Ireland	8.391	8.650	8.780	8.312	8.529
Italy	8.920	8.258	8.587	8.815	8.605

Japan	.	8.747	.	.	8.747
Luxembourg	.	.	7.806	7.972	7.902
Mexico	.	6.761	.	.	6.761
Netherlands	7.602	7.457	7.772	8.019	7.743
Norway	9.131	9.003	.	8.699	8.949
Poland	.	8.769	8.951	7.955	8.547
Portugal	.	7.443	8.592	8.728	8.284
South-Korea	.	8.396	.	.	8.396
Slovakia	.	7.695	7.794	8.061	7.849
Slovenia	.	8.924	8.462	8.925	8.787
Spain	7.747	7.976	8.065	7.821	7.905
Sweden	8.898	8.909	8.370	7.838	8.482
Switzerland	.	8.358	.	8.239	8.301
Turkey	.	.	9.588	9.503	9.532
UK	8.070	8.222	8.028	8.613	8.268
USA	8.456	8.641	.	.	8.537
Mean	8.319	8.059	8.211	8.332	8.210

8.1.2. Basic Results from contemporary inequality data

The Gini of net incomes has a mostly positive significant relation with the present item measuring honesty. In contrast, estimated coefficients are often negative if the Gini of gross incomes is employed. Estimation results for the gross-ginis are all insignificant.

Table 20B. Coefficients of contemporary Gini-net for *justify-lying*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.018	0.020	0.027	0.029	0.028	0.016
	(-1.34)	(0.75)	(0.86)	(0.86)	(0.78)	(0.54)
OECD	0.018	0.048**	0.058**	0.062*	0.061*	0.045*
	(1.05)	(2.84)	(2.70)	(2.46)	(2.23)	(2.16)
B + M + Year FE	0.015	0.031	0.009	0.004	-0.001	-0.003
	(1.00)	(1.05)	(0.25)	(0.12)	(-0.02)	(-0.08)

Table 20C. Coefficients of contemporary Gini-gross for *justify-lying*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.010	-0.012	-0.008	-0.006	-0.005	-0.012
	(-1.26)	(-0.55)	(-0.29)	(-0.21)	(-0.16)	(-0.46)
B + Macro	0.001	-0.006	0.002	0.004	0.006	-0.002
	(0.14)	(-0.26)	(0.07)	(0.17)	(0.24)	(-0.10)
B + M + Year FE	-0.002	-0.028	-0.028	-0.028	-0.026	-0.030
	(-0.18)	(-1.14)	(-1.27)	(-1.25)	(-1.16)	(-1.41)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

8.1.3. Results from lagged inequality data

For historical Gini levels results are mostly ambiguous. For the Gini of net incomes, ten and twenty year lags produce ambiguous estimates. The algebraic signs often switch and estimated coefficients are not statistically different from zero. This is also true for the ten year lags of the Gini of gross incomes. However, the Gini of gross incomes twenty years ago has a consistent and significant negative association with *justify-lying*.

Table 20D. Coefficients of ten-year-lags of Gini-net for *justify-lying*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.015	0.002	0.001	0.003	0.005	0.001
	(1.18)	(0.15)	(0.07)	(0.25)	(0.36)	(0.09)
B + Macro	0.012	-0.032	-0.037	-0.036	-0.032	-0.026
	(0.84)	(-1.57)	(-1.38)	(-1.24)	(-1.09)	(-0.97)
B + M + Year FE	0.019	-0.026	-0.007	-0.002	0.004	0.000
	(0.95)	(-1.37)	(-0.26)	(-0.06)	(0.16)	(0.02)

Table 20E. Coefficients of ten-year-lags of Gini-gross for *justify-lying*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.007	0.004	0.004	0.006	0.007	0.004
	(0.96)	(0.55)	(0.49)	(0.71)	(0.88)	(0.54)
B + Macro	0.004	-0.008	-0.009	-0.004	-0.002	-0.002
	(0.31)	(-0.38)	(-0.31)	(-0.13)	(-0.06)	(-0.09)
B + M + Year FE	0.001	-0.028	-0.033	-0.029	-0.028	-0.022
	(0.03)	(-1.34)	(-1.34)	(-1.17)	(-1.11)	(-1.01)

Table 20F. Coefficients of twenty-year-lags of Gini-net for *justify-lying*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.027	0.028	0.027	0.026	0.024	0.020
	(0.89)	(1.23)	(1.11)	(1.03)	(0.93)	(0.75)
B + Macro	-0.011	-0.119	-0.138	-0.143	-0.152	-0.115
	(-0.45)	(-0.82)	(-0.89)	(-0.92)	(-1.01)	(-0.83)
B + M + Year FE	-0.006	-0.084	-0.096	-0.097	-0.107	-0.081
	(-0.20)	(-0.69)	(-0.72)	(-0.75)	(-0.85)	(-0.68)

Table 20G. Coefficients of twenty-year-lags of Gini-gross for *justify-lying*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.002	-0.010	-0.012	-0.010	-0.010	-0.019
	(-0.14)	(-0.49)	(-0.58)	(-0.49)	(-0.46)	(-0.92)
B + Macro	-0.017	-0.099*	-0.119*	-0.114*	-0.108*	-0.103*
	(-1.54)	(-2.13)	(-2.44)	(-2.32)	(-2.15)	(-2.36)
B + M + Year FE	-0.022+	-0.091*	-0.107*	-0.101*	-0.095+	-0.093*
	(-1.67)	(-1.97)	(-2.23)	(-2.08)	(-1.89)	(-2.08)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

8.1.4. Effect of Inequality when aged eighteen to twenty-five

The levels of income inequality when young have a negative, but insignificant relation to the symbolic value of honesty. This is true for income inequality measure based on gross and net incomes.

Table 20H. Coefficients of Gini-net when aged 18-25 for *justify-lying*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.004	-0.004	-0.003	-0.004	-0.004	-0.003
	(-0.63)	(-0.67)	(-0.56)	(-0.78)	(-0.79)	(-0.62)
B + Macro	-0.002	-0.005	-0.006	-0.007	-0.007	-0.007
	(-0.37)	(-0.92)	(-0.97)	(-1.28)	(-1.25)	(-1.24)
B + M + Year FE	-0.003	-0.005	-0.006	-0.007	-0.007	-0.007
	(-0.46)	(-0.98)	(-1.01)	(-1.26)	(-1.23)	(-1.23)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 20J. Coefficients of Gini-gross when aged 18-25 for *justify-lying*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.002	-0.002	-0.001	-0.002	-0.003	-0.001
	(-0.29)	(-0.31)	(-0.25)	(-0.46)	(-0.56)	(-0.22)
B + Macro	0.001	-0.001	-0.001	-0.003	-0.003	-0.002
	(0.17)	(-0.11)	(-0.21)	(-0.50)	(-0.62)	(-0.45)
B + M + Year FE	0.001	-0.001	-0.001	-0.003	-0.003	-0.002
	(0.10)	(-0.18)	(-0.25)	(-0.49)	(-0.62)	(-0.44)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

8.1.5. Instrumental Variable Estimation

Instrumenting the Gini of net incomes, estimation results indicate that higher levels of income inequality reduce honesty. However, the maximum likelihood estimator does not converge for most specifications so that conclusions, drawn from this few results, should be considered with caution.

Table 20K Coefficients of Net-Gini for *justify_lying_never*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.198^{+}	0.102	x		
	(-1.67)	(1.13)	x		
p_exog	0.077	0.443	x		
B + Macro	x				
	x				
p_exog	x				
B + M + Year FE	-0.328	x			
	(-1.24)	x			
p_exog	0.221	x			

Table 20L. Coefficients of Net-Gini for *justify_lying_always*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.022	x			
	(0.20)	x			
p_exog	0.361	x			
B + Macro	x				
	x				
p_exog	x				
B + M + Year FE	0.292	x			
	(0.97)	x			
p_exog	0.275	x			

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Net-Gini from iv-probit estimations on the sample of OECD countries

If the Gini of gross incomes is instrumented, estimated coefficients point to an opposite effect than for the net-gini: higher levels of income inequality result in more honesty. Most coefficients are insignificant and the Wald test for exogeneity is not rejected. Note that results from IV-estimation are contradictory to those for contemporary Gini levels.

Table 20M. Coefficients of Gross-Gini for *justify_lying_never*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	-0.071	0.039	0.065	0.069	0.077
	(-1.57)	(1.08)	(1.15)	(1.18)	(1.23)
p_exog	0.092	0.308	0.327	0.322	0.299
B + Macro	-0.242	0.044	0.060	0.064	0.071
	(-0.74)	(1.46)	(1.43)	(1.44)	(1.48)
p_exog	0.584	0.199	0.228	0.231	0.217
B + M + Year FE	-0.132	0.086	0.068	0.073	0.095
	(-1.29)	(0.67)	(0.71)	(0.68)	(0.70)
p_exog	0.242	0.470	0.435	0.457	0.464

Table 20N. Coefficients of Gross-Gini for *justify_lying_always*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.014	-0.106	-0.108	-0.119	-0.121
	(0.36)	(-1.64)	(-1.32)	(-1.37)	(-1.37)
p_exog	0.325	0.142	0.225	0.214	0.208
B + Macro	0.260	-0.118^{+}	-0.112	-0.122	-0.123
	(1.06)	(-1.69)	(-1.51)	(-1.58)	(-1.59)
p_exog	0.455	0.112	0.157	0.155	0.153
B + M + Year FE	0.118	-0.261	-0.261	-0.264	-0.274
	(1.22)	(-0.86)	(-0.93)	(-0.92)	(-0.92)
p_exog	0.221	0.439	0.411	0.421	0.427

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

8.2. Conclusion on Inequality and Honesty

The Gini of gross and net incomes produce quite different results. For the Gini of net incomes, contemporaneous levels result in a positive association with honesty. Historical inequality levels and income inequality when young result in an ambiguous or negative association with honesty.

For the Gini of gross incomes, contemporaneous values, historical values and inequality levels when young result in a negative association between levels of income inequality and honesty. The IV-regression produces contradictory results. However, since the Wald test for exogeneity is never rejected and the instrument is not particularly strong for the Gini of gross incomes, the results from IV-estimations are disregarded. In sum, the results for the Gini of gross incomes point to a negative association between income inequality and honesty. A more unequal distribution of pre-tax market incomes might come with a lower morality of truth-telling. For the Gini of net incomes results are ambiguous.

9. Income Inequality and Tolerance

Tolerance refers to the acceptance of diverse lifestyles. Becker (1971) shows that discrimination as one form of non-tolerance can lead to Pareto-inferior outcomes in the labour market. Corneo (2010) formulates a more systematic approach to the phenomenon of tolerance, differentiating between the characteristic under evaluation (i.e. being tolerated or not) which might be exogenous or endogenous.

9.1. Child-tolerance

Tolerance is measured with the item, indicating tolerance as an important child quality.

9.1.1. Literature

Aghion et al. (2010) set out to explain the inverse relationship between generalized trust in society and the level of government intervention. A central element in their explanation is civic education, which allows for better cooperation and less need for government intervention. Empirically they capture civic education with *child-tolerance*, also used here, and *child-unselfish* (see below). Tabellini (2008a, 2008b) explains the circular relation between political institutions and societal propensity to cooperate. The degree of cooperation is based on individual values of generalized morality which in turn is measured with *child-tolerance* and the WVS variable on generalized trust. In their task to pin down the cultural aspects which influence long run growth, Gorodnichenko and Roland (2011) include *child-tolerance* in an index of tolerance, constructed from four items. Dobler (2009) undertakes a similar task and empirically analyses the influence of culture, religion and institutions on the level of real per capita income. Balan and Knack (2011) include *child-tolerance* as a proxy for morality in their analysis of morality, education and economic performance. As already mentioned, Maystre et al. (2009) use all child-quality items to calculate the cultural distance between countries that are trading partners.

9.1.2. Descriptive Statistic

In Table 21A are depicted the fractions of respondents per country and survey wave which find tolerance an important child quality. There are 193,159 observations for *child-tolerance.* The sample size for each estimated model varies, ranging from 174,877 to 70,494 cases.

Table 21A. Mean of *child-tolerance* by country and wave

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	0.671	.	0.809	.	0.916	.	0.805
Austria	.	0.661	.	0.716	.	0.687	0.689
Belgium	0.453	0.675	.	0.846	.	0.822	0.715
Canada	0.530	0.802	.	0.816	0.837	.	0.768
Czech Rep	.	0.661	0.600	0.632	.	0.501	0.609
Denmark	0.584	0.809	.	0.873	.	0.867	0.785
Estonia	.	0.702	0.596	0.712	.	0.768	0.702
Finland	.	0.803	0.825	0.827	0.860	0.868	0.840
France	0.589	0.783	.	0.847	0.869	0.871	0.797
Germany	.	0.760	0.883	0.707	0.732	0.730	0.762
Greece	.	.	.	.	.	0.536	0.536
Hungary	0.307	0.617	0.635	0.665	.	0.708	0.572
Iceland	0.580	0.930	.	0.843	.	0.861	0.794
Ireland	0.560	0.764	.	0.765	.	0.742	0.698
Italy	0.433	0.670	.	0.750	0.739	0.711	0.667
Japan	0.410	0.595	0.583	0.712	0.745	.	0.611
Luxembourg	.	.	.	.	.	0.825	0.825
Mexico	.	0.643	0.573	0.718	0.781	.	0.667
Netherlands	0.594	0.885	.	0.916	0.859	0.855	0.816
New Zealand	.	.	0.779	.	0.825	.	0.799
Norway	0.317	0.637	0.659	.	0.914	0.905	0.682
Poland	.	0.765	0.815	0.791	0.843	0.739	0.788
Portugal	.	0.678	.	0.667	.	0.678	0.675
South-Korea	0.249	0.554	0.468	0.647	0.560	.	0.505
Slovakia	.	0.552	0.571	0.571	.	0.516	0.551
Slovenia	.	0.745	0.720	0.701	0.750	0.720	0.727
Spain	0.442	0.733	0.756	0.796	0.716	0.814	0.702
Sweden	0.711	0.908	0.904	0.923	0.936	0.916	0.891
Switzerland	.	0.774	0.786	.	0.907	0.856	0.830
Turkey	.	0.691	0.613	0.623	0.692	1.000	0.676
UK	0.619	0.796	0.861	0.830	0.854	0.794	0.790
USA	0.524	0.726	0.749	0.797	0.790	.	0.693
Mean	0.500	0.716	0.710	0.748	0.802	0.761	0.716

9.1.3. Basic Results from contemporary inequality data

There is a consistent and often strongly significant negative association between the Gini levels of the income distribution and the probability that respondents find it important to teach their children tolerance. This is true for the Gini of gross and net incomes. The first model is contradictory in that respect, resulting in positive coefficients for all three configurations.

Table 21B. Coefficients of contemporary Gini-net for *child-tolerance*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.062*	-0.019	-0.023	-0.025	-0.024	-0.066*
	(2.12)	(-0.51)	(-0.58)	(-0.64)	(-0.59)	(-1.97)
OECD	0.023	-0.007	-0.010	-0.021	-0.019	-0.076*
	(0.72)	(-0.18)	(-0.23)	(-0.49)	(-0.45)	(-1.99)
B + M + Year FE	0.009	-0.058**	-0.079***	-0.068**	-0.068**	-0.029
	(0.33)	(-2.65)	(-3.69)	(-3.20)	(-3.13)	(-0.99)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 21C. Coefficients of contemporary Gini-gross for *child-tolerance*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.055**	-0.030+	-0.033+	-0.035*	-0.035+	-0.051**
	(2.91)	(-1.68)	(-1.79)	(-1.97)	(-1.92)	(-2.87)
B + Macro	0.023	-0.039*	-0.042*	-0.051*	-0.051*	-0.069***
	(1.04)	(-2.03)	(-2.18)	(-2.57)	(-2.55)	(-4.07)
B + M + Year FE	0.019	-0.039***	-0.044***	-0.036*	-0.036*	-0.019
	(1.28)	(-3.32)	(-3.70)	(-2.56)	(-2.55)	(-1.42)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

9.1.4. Results from lagged inequality data

The estimation results are very similar for the Gini of gross and net incomes. For the lagged levels of the Gini coefficient, results are ambiguous. Estimates are all insignificant for ten year lags. For twenty year lags, most estimated coefficients are negative. However, there are enough positive coefficients to consider results for twenty year lags ambiguous.

Table 21D. Coefficients of ten-year-lags of Gini-net for *child-tolerance*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.011	-0.006	-0.006	-0.006	-0.005	-0.007
	(0.59)	(-0.36)	(-0.33)	(-0.33)	(-0.27)	(-0.38)
B + Macro	-0.039	-0.001	0.004	-0.000	-0.000	0.012
	(-1.50)	(-0.06)	(0.18)	(-0.02)	(-0.01)	(0.27)
B + M + Year FE	-0.026	0.028	0.034+	0.032	0.031	0.003
	(-1.02)	(1.48)	(1.66)	(1.62)	(1.57)	(0.13)

Table 21E. Coefficients of ten-year-lags of Gini-gross for *child-tolerance*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.013	-0.001	-0.002	-0.001	-0.001	-0.002
	(0.94)	(-0.06)	(-0.14)	(-0.09)	(-0.06)	(-0.13)
B + Macro	-0.015	0.005	0.007	0.006	0.006	0.017
	(-0.78)	(0.37)	(0.38)	(0.33)	(0.33)	(0.59)
B + M + Year FE	-0.012	0.026	0.024	0.018	0.017	0.002
	(-0.67)	(1.19)	(0.95)	(0.75)	(0.69)	(0.09)

Table 21F. Coefficients of twenty-year-lags of Gini-net for *child-tolerance*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.083***	-0.055+	-0.061+	-0.069+	-0.067+	-0.071
	(-3.67)	(-1.69)	(-1.85)	(-1.92)	(-1.77)	(-1.27)
B + Macro	-0.039	-0.023	-0.027	-0.015	-0.013	-0.033
	(-1.52)	(-0.68)	(-0.75)	(-0.36)	(-0.29)	(-0.62)
B + M + Year FE	-0.040	0.021	0.020	0.006	0.006	0.031
	(-1.47)	(0.66)	(0.61)	(0.21)	(0.21)	(1.38)

Table 21G. Coefficients of twenty-year-lags of Gini-gross for *child-tolerance*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.030*	-0.024	-0.028	-0.030	-0.027	-0.024
	(-2.28)	(-0.77)	(-0.81)	(-0.84)	(-0.72)	(-0.59)
B + Macro	-0.007	-0.002	-0.003	-0.003	-0.001	-0.011
	(-0.71)	(-0.07)	(-0.08)	(-0.10)	(-0.03)	(-0.24)
B + M + Year FE	-0.008	0.005	0.007	0.005	0.005	0.012
	(-0.78)	(0.27)	(0.37)	(0.27)	(0.26)	(0.74)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

9.1.5. Effect of Inequality when aged eighteen to twenty-five

The experience of income inequality when young shows a consistently negative relation with *child-tolerance*. The estimated coefficients for the Gini of gross and net incomes are all negative and mostly significant.

Table 21H. Coefficients of Gini-net when aged 18-25 for *child-tolerance*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.005	-0.010*	-0.010*	-0.010^{+}	-0.009^{+}	-0.006
	(-0.57)	(-2.21)	(-2.13)	(-1.85)	(-1.70)	(-0.92)
B + Macro	-0.013**	-0.008^{+}	-0.009^{+}	-0.009^{+}	-0.008	-0.008
	(-2.97)	(-1.67)	(-1.78)	(-1.72)	(-1.46)	(-0.85)
B + M + Year FE	-0.011**	-0.007	-0.008	-0.008	-0.007	-0.003
	(-2.69)	(-1.43)	(-1.52)	(-1.53)	(-1.32)	(-0.51)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 21J. Coefficients of Gini-gross when aged 18-25 for *child-tolerance*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.007	-0.010*	-0.011**	-0.011*	-0.010*	-0.007
	(-0.80)	(-2.47)	(-2.58)	(-2.35)	(-2.17)	(-1.16)
B + Macro	-0.013**	-0.009^{+}	-0.011*	-0.011*	-0.010^{+}	-0.009
	(-3.11)	(-1.87)	(-2.18)	(-2.20)	(-1.92)	(-1.14)
B + M + Year FE	-0.012**	-0.007	-0.009^{+}	-0.009*	-0.008^{+}	-0.004
	(-3.04)	(-1.56)	(-1.84)	(-2.06)	(-1.82)	(-0.76)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

9.1.6. Instrumental Variable Estimation

If the Gini of net incomes is instrumented, results are ambiguous with positive and negative, mostly insignificant, estimates. The first model in the basic configuration produces a highly significant positive estimate and the Wald test for exogeneity is rejected. If instead the Gini of gross incomes is employed, all coefficients are positive and one coefficient is significant.

Table 21K. Coefficients of Net-Gini for *child-tolerance*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.265***	0.635	0.630	0.424	0.436
	(3.71)	(0.50)	(0.51)	(0.64)	(0.64)
p_exog	0.004	0.712	0.702	0.555	0.561
B + Macro	0.254	0.782	0.798	0.753	0.762
	(1.51)	(0.75)	(0.77)	(0.72)	(0.73)
p_exog	0.187	0.659	0.665	0.622	0.624
B + M + Year FE	0.330	-0.092	-0.111	-0.056	-0.048
	(1.43)	(-0.29)	(-0.23)	(-0.10)	(-0.11)
p_exog	0.199	0.861	0.895	0.979	0.989

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Net-Gini from iv-probit estimations on the sample of OECD countries

Table 21L. Coefficients of Gross-Gini for *child-tolerance*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.145***	0.281	0.362	0.377	0.367
	(4.42)	(0.60)	(0.56)	(0.56)	(0.58)
p_exog	0.000	0.604	0.689	0.710	0.695
B + Macro	0.159	0.251	0.332	0.417	0.411
	(1.60)	(1.03)	(0.91)	(0.76)	(0.77)
p_exog	0.164	0.309	0.450	0.634	0.622
B + M + Year FE	0.137	0.056	0.045	0.016	0.018
	(1.55)	(0.34)	(0.31)	(0.14)	(0.14)
p_exog	0.214	0.628	0.625	0.734	0.742

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

9.2. Conclusion on Inequality and Tolerance

Higher levels of income inequality reduce tolerance. Results are significant and robust for contemporary and youth levels of income inequality. The findings for lagged data are ambiguous. IV-estimations indicate a positive effect of income inequality on tolerance. However, IV-results are mostly insignificant and endogeneity does not seem to be of utter importance.

10. Income Inequality and Altruism

10.1. Child-unselfish

10.1.1. Literature

Aghion et al. (2010) use this item as a measure of family civic education and Gorodnichenko and Roland (2011) use it together with *justify-nofare* and *justify-taxcheat* (see above) to construct an index of the propensity for public goods provision. Maystre et al. (2009) also include *child-unselfish*, like all other items on important child qualities, to compute a measure of cultural distance.

10.1.2. Descriptive Statistic

In Table 22A are shown the fractions of respondents per country and survey wave which find unselfishness an important child quality. There are 191,335 observations for *child-unselfish*. The sample size for each estimated model ranges from 173,524 to 70,305 cases.

Table 22A. Mean of *child-unselfish* by country and wave

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	0.377	.	0.396	.	0.536	.	0.434
Austria	.	0.073	.	0.054	.	0.100	0.075
Belgium	0.144	0.272	.	0.361	.	0.225	0.265
Canada	0.204	0.423	.	0.456	0.464	.	0.406
Czech Rep	.	0.369	0.323	0.363	.	0.343	0.355
Denmark	0.249	0.506	.	0.559	.	0.634	0.494
Estonia	.	0.249	0.168	0.164	.	0.158	0.182
Finland	.	0.211	0.182	0.218	0.303	0.280	0.242
France	0.217	0.399	.	0.402	0.556	0.409	0.393
Germany	.	0.080	0.054	0.087	0.069	0.051	0.070
Greece	.	.	.	.	.	0.283	0.283
Hungary	0.140	0.258	0.288	0.230	.	0.343	0.249
Iceland	0.209	0.752	.	0.346	.	0.314	0.385
Ireland	0.227	0.526	.	0.492	.	0.512	0.421
Italy	0.022	0.399	.	0.414	0.439	0.408	0.345
Japan	0.281	0.440	0.378	0.532	0.503	.	0.429
Luxembourg	.	.	.	.	.	0.323	0.323
Mexico	.	0.110	0.365	0.487	0.476	.	0.361
Netherlands	0.090	0.222	.	0.279	0.235	0.227	0.208
New Zealand	.	.	0.328	.	0.386	.	0.353
Norway	0.055	0.095	0.112	.	0.198	0.174	0.125
Poland	.	0.094	0.139	0.120	0.184	0.191	0.148
Portugal	.	0.302	.	0.402	.	0.389	0.365
South-Korea	0.119	0.106	0.107	0.147	0.120	.	0.119
Slovakia	.	0.223	0.189	0.186	.	0.264	0.218
Slovenia	.	0.331	0.293	0.376	0.380	0.310	0.337
Spain	0.044	0.078	0.143	0.119	0.334	0.016	0.103
Sweden	0.102	0.293	0.237	0.332	0.347	0.313	0.281
Switzerland	.	0.391	0.326	.	0.221	0.120	0.268
Turkey	.	0.278	0.227	0.234	0.320	1.000	0.293
UK	0.406	0.566	.	0.602	0.547	0.499	0.522
USA	0.188	0.368	0.348	0.391	0.400	.	0.321
Mean	0.175	0.273	0.247	0.308	0.347	0.292	0.278

10.1.3. Basic Results from contemporary inequality data

Estimating the association with contemporary Gini levels, results are mostly positive and mostly insignificant. This holds true for the Gini of gross and net incomes. There is a weak indication that higher levels of income inequality are associated with more unselfishness.

Table 22B. Coefficients of contemporary Gini-net for *child-unselfish*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.050*	0.019	0.013	0.020	0.019	0.037
	(2.04)	(0.84)	(0.55)	(0.78)	(0.75)	(0.85)
OECD	0.004	0.017	0.010	0.008	0.006	0.034
	(0.24)	(0.73)	(0.41)	(0.29)	(0.23)	(0.68)
B + M + Year FE	-0.013	0.018	0.011	0.007	0.007	0.044
	(-0.54)	(0.50)	(0.30)	(0.20)	(0.19)	(0.79)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 22C. Coefficients of contemporary Gini-gross for *child-unselfish*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.044***	0.007	0.005	0.004	0.004	0.003
	(3.30)	(0.47)	(0.29)	(0.21)	(0.24)	(0.12)
B + Macro	0.017+	0.010	0.005	0.004	0.004	-0.006
	(1.84)	(0.53)	(0.24)	(0.18)	(0.18)	(-0.31)
B + M + Year FE	0.015	0.011	0.006	0.002	0.001	0.011
	(1.28)	(0.69)	(0.35)	(0.11)	(0.05)	(0.45)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

10.1.4. Results from lagged inequality data

Historical inequality levels do not show a clear association with *child-unselfish*. For ten year lags and twenty year lags of the Gini levels for both, gross and net incomes, the algebraic sign often switches and coefficients are mostly insignificant.

Table 22D. Coefficients of ten-year-lags of Gini-net for *child-unselfish*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.001	0.010	0.010	0.009	0.009	0.011
	(-0.08)	(0.62)	(0.55)	(0.51)	(0.50)	(0.57)
B + Macro	-0.038	0.021	0.021	0.021	0.020	0.016
	(-1.58)	(1.24)	(1.13)	(1.04)	(0.98)	(0.29)
B + M + Year FE	-0.035	0.021	0.004	0.005	0.005	-0.069+
	(-1.13)	(0.97)	(0.19)	(0.22)	(0.22)	(-1.68)

Table 22E. Coefficients of ten-year-lags of Gini-gross for *child-unselfish*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.000	-0.002	-0.003	-0.002	-0.002	-0.003
	(0.01)	(-0.13)	(-0.16)	(-0.15)	(-0.14)	(-0.22)
B + Macro	-0.022	0.016	0.017	0.017	0.017	0.007
	(-1.04)	(1.61)	(1.48)	(1.41)	(1.39)	(0.28)
B + M + Year FE	-0.019	0.033*	0.029+	0.032+	0.032+	0.008
	(-0.71)	(2.12)	(1.69)	(1.74)	(1.74)	(0.25)

Table 22F. Coefficients of twenty-year-lags of Gini-net for *child-unselfish*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.073*	-0.057	-0.059	-0.064	-0.064	-0.027
	(-2.57)	(-1.40)	(-1.37)	(-1.45)	(-1.42)	(-0.45)
B + Macro	-0.018	-0.002	0.000	0.006	0.006	0.017
	(-1.09)	(-0.12)	(0.00)	(0.32)	(0.32)	(0.47)
B + M + Year FE	0.000	0.049	0.048	0.048	0.047	0.065+
	(0.01)	(1.40)	(1.41)	(1.37)	(1.37)	(1.78)

Table 22G. Coefficients of twenty-year-lags of Gini-gross for *child-unselfish*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.060**	-0.031	-0.033	-0.034	-0.034	-0.013
	(-2.64)	(-0.92)	(-0.88)	(-0.90)	(-0.88)	(-0.35)
B + Macro	-0.042*	-0.001	-0.001	0.001	0.000	-0.003
	(-2.01)	(-0.10)	(-0.04)	(0.04)	(0.04)	(-0.15)
B + M + Year FE	-0.042+	0.025	0.024	0.024	0.024	0.024
	(-1.85)	(1.39)	(1.35)	(1.38)	(1.38)	(1.49)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

10.1.5. Effect of Inequality when aged eighteen to twenty-five

The mean Gini level during youth shows a consistent negative relation with the present measure of altruism. Estimated coefficients are all negative, but mostly insignificant for both, the Gini of gross and net incomes.

Table 22H. Coefficients of Gini-net when aged 18-25 for *child-unselfish*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.002	-0.006^{+}	-0.004	-0.005	-0.005	-0.005
	(-0.28)	(-1.72)	(-1.27)	(-1.39)	(-1.30)	(-1.24)
B + Macro	-0.008^{+}	-0.006	-0.005	-0.005	-0.005	-0.009
	(-1.70)	(-1.33)	(-1.04)	(-1.08)	(-1.02)	(-1.55)
B + M + Year FE	-0.006	-0.004	-0.003	-0.004	-0.003	-0.008
	(-1.33)	(-0.81)	(-0.60)	(-0.61)	(-0.56)	(-1.23)

Table 22J. Coefficients of Gini-gross when aged 18-25 for *child-unselfish*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.002	-0.004	-0.003	-0.003	-0.003	-0.003
	(-0.25)	(-1.12)	(-0.76)	(-0.85)	(-0.72)	(-0.61)
B + Macro	-0.006	-0.004	-0.003	-0.004	-0.003	-0.006
	(-1.35)	(-1.00)	(-0.71)	(-0.75)	(-0.66)	(-1.16)
B + M + Year FE	-0.004	-0.002	-0.001	-0.002	-0.001	-0.005
	(-0.97)	(-0.44)	(-0.25)	(-0.27)	(-0.20)	(-0.79)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

10.1.6. Instrumental Variable Estimation

The results from IV-estimations for the Gini of net incomes indicate a positive effect of income inequality on *child-unselfish*. However, results are mostly insignificant and the Wald test for exogeneity is never rejected. If the Gini of gross incomes is instrumented, results are ambiguous with both, positive and negative estimates. Again most estimates are insignificant and the Wald test for exogeneity is only rejected once.

Table 22K. Coefficients of Net-Gini for *child-unselfish*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.265*	0.512	0.488	0.279	0.280
	(2.09)	(0.38)	(0.39)	(0.52)	(0.53)
p_exog	0.103	0.755	0.744	0.620	0.617
B + Macro	0.268	0.414	0.391	0.320	0.329
	(0.68)	(0.35)	(0.33)	(0.39)	(0.39)
p_exog	0.551	0.754	0.764	0.707	0.707
B + M + Year FE	0.542	0.194	0.345	0.450	0.437
	(1.14)	(0.49)	(0.38)	(0.30)	(0.31)
p_exog	0.376	0.653	0.723	0.780	0.775

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Net-Gini from iv-probit estimations on the sample of OECD countries

Table 22L. Coefficients of Gross-Gini for *child-unselfish*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.147**	0.214	0.286	0.285	0.275
	(2.58)	(0.48)	(0.41)	(0.37)	(0.38)
p_exog	0.030	0.668	0.740	0.765	0.754
B + Macro	0.167	0.097	0.127	0.183	0.186
	(0.72)	(0.76)	(0.58)	(0.39)	(0.39)
p_exog	0.535	0.435	0.555	0.709	0.707
B + M + Year FE	0.232	-0.127	-0.142	-0.129	-0.129
	(1.17)	(-0.39)	(-0.45)	(-0.48)	(-0.48)
p_exog	0.365	0.696	0.667	0.642	0.644

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

10.2. Conclusion on Inequality and Altruism

Estimation results for contemporary inequality levels are positive with regular logit estimation and instrumental variable estimation. Historical values produce ambiguous results. Inequality when young results in a consistently negative association between levels of income inequality and altruism. However, since most results are insignificant, no conclusion is drawn from these estimation results.

11. Income Inequality and Saving Behaviour

11.1. Child-thrift

Saving behaviour is derived from the item measuring "thrift, saving money and things" as an important child quality.

11.1.1. Literature

Anderson and Nevitte (2006) focus on the determinants of *child-thrift* and its relation to actual saving behaviour. Gorodnichenko and Roland (2011) construct an index of „hard work and thrift" using *child-thrift* and *child-determination* (see above) in order to determine the cultural factors driving economic growth. Minkov and Blagoev (2009) also analyze the effect of cultural values - among them *child-thrift* - on economic growth, using confirmatory factor analysis. Giuso et al. (2003) study the effect of religion on a set of economically relevant attitudes, *child-thrift* being one of their dependent variables. Being raised religiously has a significant positive effect on the probability that respondents find it important to teach children "thrift, saving money and things". Finally, *child-thrift* is also contained in the measure of cultural distance in Maystre et al. (2009).

11.1.2. Descriptive Statistic

Table 23A depicts the fraction of respondents per country and survey wave which find thrift an important child quality. There are 192,871 observations for *child-thrift.* The sample size for each estimated model varies from 174,738 to 70,411 cases.

Table 23A. Mean of *child-thrift* by country and wave

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	0.155	.	0.185	.	0.335	.	0.222
Austria	.	0.555	.	0.487	.	0.429	0.490
Belgium	0.356	0.362	.	0.439	.	0.454	0.400
Canada	0.145	0.212	.	0.285	0.280	.	0.241
Czech Rep	.	0.386	0.441	0.304	.	0.420	0.381
Denmark	0.139	0.187	.	0.096	.	0.094	0.126
Estonia	.	0.351	0.304	0.444	.	0.465	0.399
Finland	.	0.384	0.292	0.207	0.268	0.214	0.261
France	0.307	0.359	.	0.376	0.428	0.429	0.381
Germany	.	0.501	0.528	0.397	0.511	0.440	0.479
Greece	.	.	.	.	.	0.309	0.309
Hungary	0.327	0.495	0.417	0.396	.	0.491	0.424
Iceland	0.119	0.688	.	0.205	.	0.201	0.280
Ireland	0.144	0.219	.	0.215	.	0.400	0.226
Italy	0.182	0.273	.	0.347	0.394	0.436	0.323
Japan	0.308	0.403	0.435	0.481	0.523	.	0.430
Luxembourg	.	.	.	.	.	0.463	0.463
Mexico	.	0.332	0.491	0.376	0.394	.	0.409
Netherlands	0.167	0.286	.	0.208	0.417	0.337	0.285
New Zealand	.	.	0.251	.	0.332	.	0.287
Norway	0.125	0.216	0.132	.	0.140	0.098	0.145
Poland	.	0.437	0.568	0.393	0.535	0.440	0.474
Portugal	.	0.348	.	0.322	.	0.453	0.385
South-Korea	0.336	0.533	0.663	0.675	0.727	.	0.597
Slovakia	.	0.377	0.445	0.385	.	0.498	0.424
Slovenia	.	0.577	0.395	0.354	0.404	0.330	0.410
Spain	0.106	0.225	0.191	0.322	0.189	0.356	0.231
Sweden	0.322	0.482	0.421	0.300	0.387	0.513	0.393
Switzerland	.	0.419	0.374	.	0.223	0.365	0.347
Turkey	.	0.362	0.285	0.303	0.384	1.000	0.378
UK	0.081	0.282	0.291	0.318	0.250	0.278	0.251
USA	0.095	0.289	0.285	0.227	0.303	.	0.226
Mean	0.190	0.364	0.370	0.343	0.373	0.396	0.347

11.1.3. Basic Results from contemporary inequality data

The levels of the Gini of gross and net incomes today have an ambiguous relation with the present symbolic value of saving. Estimations result in positive and negative and mostly insignificant coefficients.

Table 23B. Coefficients of contemporary Gini-net for *child-thrift*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.033^{+}	-0.008	-0.011	-0.001	-0.001	-0.006
	(1.89)	(-0.25)	(-0.34)	(-0.04)	(-0.04)	(-0.13)
OECD	0.032	-0.003	-0.004	-0.004	-0.003	-0.004
	(1.52)	(-0.09)	(-0.14)	(-0.13)	(-0.11)	(-0.12)
B + M + Year FE	0.077***	0.019	0.024	0.021	0.019	-0.011
	(3.55)	(0.70)	(0.91)	(0.79)	(0.72)	(-0.34)

Table 23C. Coefficients of contemporary Gini-gross for *child-thrift*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.013	0.005	0.002	0.002	0.001	-0.004
	(1.35)	(0.28)	(0.13)	(0.11)	(0.07)	(-0.21)
B + Macro	0.001	0.003	0.001	-0.004	-0.005	-0.006
	(0.07)	(0.15)	(0.03)	(-0.21)	(-0.27)	(-0.30)
B + M + Year FE	0.020*	0.011	0.011	0.005	0.005	0.000
	(2.28)	(0.77)	(0.81)	(0.36)	(0.32)	(0.00)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

11.1.4. Results from lagged inequality data

Historical Gini levels have no clear association with *child-thrift*. For both, the Gini of gross and net incomes, lagged ten and twenty years, there are positive and negative estimates.

Table 23D. Coefficients of ten-year-lags of Gini-net for *child-thrift*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.011	0.021	0.016	0.023	0.022	0.034*
	(0.90)	(1.22)	(0.91)	(1.38)	(1.32)	(2.10)
B + Macro	-0.003	0.015	0.008	0.018	0.017	-0.001
	(-0.21)	(1.00)	(0.56)	(1.23)	(1.15)	(-0.04)
B + M + Year FE	-0.009	-0.047**	-0.053**	-0.049**	-0.051**	-0.050^{+}
	(-0.58)	(-3.20)	(-3.22)	(-2.99)	(-3.29)	(-1.87)

Table 23E. Coefficients of ten-year-lags of Gini-gross for *child-thrift*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.000	0.009	0.006	0.013	0.012	0.019*
	(-0.04)	(0.81)	(0.52)	(1.11)	(1.06)	(2.17)
B + Macro	-0.016	0.003	-0.001	0.012	0.011	0.010
	(-1.56)	(0.32)	(-0.11)	(1.13)	(1.01)	(0.41)
B + M + Year FE	-0.005	-0.022	-0.023	-0.018	-0.017	0.004
	(-0.38)	(-1.22)	(-1.18)	(-0.94)	(-0.90)	(0.15)

Table 23F. Coefficients of twenty-year-lags of Gini-net for *child-thrift*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.026	-0.009	-0.016	-0.033	-0.034	-0.013
	(-0.71)	(-0.16)	(-0.28)	(-0.57)	(-0.58)	(-0.21)
B + Macro	0.028^{+}	0.045**	0.043**	0.049**	0.051**	0.074***
	(1.84)	(2.63)	(2.60)	(2.63)	(2.79)	(3.87)
B + M + Year FE	-0.027	-0.004	-0.004	-0.005	-0.006	0.019
	(-1.30)	(-0.21)	(-0.21)	(-0.27)	(-0.31)	(0.98)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

Table 23G. Coefficients of twenty-year-lags of Gini-gross for *child-thrift*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	-0.014	0.008	0.006	-0.002	-0.002	0.011
	(-0.98)	(0.24)	(0.15)	(-0.04)	(-0.06)	(0.31)
B + Macro	-0.000	0.021	0.021	0.013	0.014	0.040
	(-0.04)	(0.97)	(0.99)	(0.58)	(0.61)	(1.52)
B + M + Year FE	-0.021^{+}	-0.012	-0.012	-0.012	-0.013	0.006
	(-1.70)	(-0.67)	(-0.63)	(-0.67)	(-0.70)	(0.28)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

11.1.5. Effect of Inequality when aged eighteen to twenty-five

The level of income inequality experienced when young, does not produce any resilient results, either. All estimates are insignificant with switching algebraic signs.

Table 23H. Coefficients of Gini-net when aged 18-25 for *child-thrift*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.002	-0.006	-0.004	-0.003	-0.002	0.005
	(0.29)	(-0.78)	(-0.58)	(-0.45)	(-0.32)	(0.84)
B + Macro	0.003	-0.002	0.000	0.002	0.002	0.006
	(0.53)	(-0.49)	(0.04)	(0.34)	(0.36)	(1.14)
B + M + Year FE	0.003	-0.006	-0.003	-0.002	-0.002	0.004
	(0.52)	(-0.98)	(-0.46)	(-0.39)	(-0.37)	(0.71)

Table 23J. Coefficients of Gini-gross when aged 18-25 for *child-thrift*

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	(6)
Basic	0.004	-0.005	-0.004	-0.003	-0.002	0.005
	(0.51)	(-0.71)	(-0.55)	(-0.40)	(-0.29)	(0.83)
B + Macro	0.005	-0.002	-0.000	0.001	0.001	0.005
	(0.93)	(-0.44)	(-0.01)	(0.29)	(0.30)	(1.04)
B + M + Year FE	0.005	-0.005	-0.003	-0.002	-0.002	0.004
	(0.91)	(-0.89)	(-0.46)	(-0.37)	(-0.36)	(0.61)

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*

11.1.6. Instrumental Variable Estimation

For the Gini of net incomes IV-estimations produce mostly positive but insignificant coefficients. If the Gini of gross incomes is instrumented, most resulting coefficients are negative. However, again there is no statistical significant relation. For both measures only the first model in the basic configuration results in a significantly positive coefficient. For this estimation the Wald test of exogeneity is rejected. For all other estimations it can never be rejected, indicating that endogeneity is not a major problem.

Table 23K. Coefficients of Net-Gini for *child-thrift*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.119**	0.441	0.366	0.150	0.154
	(2.61)	(0.41)	(0.40)	(0.55)	(0.55)
p_exog	0.042	0.723	0.716	0.622	0.620
B + Macro	0.088	0.088	0.000	-0.085	-0.064
	(0.65)	(0.22)	(0.00)	(-0.20)	(-0.16)
p_exog	0.572	0.815	0.988	0.853	0.882
B + M + Year FE	0.134	0.041	0.056	0.289	0.221
	(0.73)	(0.27)	(0.23)	(0.23)	(0.29)
p_exog	0.633	0.843	0.860	0.826	0.783

Coefficients of Net-Gini from iv-probit estimations on the sample of OECD countries

Table 23L. Coefficients of Gross-Gini for *child-thrift*

	(1)	*(2)*	*(3)*	*(4)*	(5)
Basic	0.066**	0.191	0.225	0.172	0.164
	(2.69)	(0.51)	(0.38)	(0.31)	(0.33)
p_exog	0.014	0.648	0.738	0.774	0.760
B + Macro	0.056	0.020	-0.001	-0.051	-0.037
	(0.67)	(0.23)	(-0.01)	(-0.19)	(-0.16)
p_exog	0.515	0.845	0.990	0.859	0.883
B + M + Year FE	0.055	-0.023	-0.020	-0.063	-0.064
	(0.70)	(-0.28)	(-0.26)	(-0.61)	(-0.58)
p_exog	0.633	0.721	0.719	0.519	0.540

*t statistics in parentheses; + p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001*
Coefficients of Gross-Gini from iv-probit estimations on the sample of OECD countries

11.2. Conclusion on Inequality and Saving Behaviour

No clear cut effect of income inequality on the probability to find teaching children saving and thrift important, can be identified. There are a few significant estimates. However, they do not indicate a systematic association with *child-thrift*. The results for saving behaviour remain ambiguous.

12. Exploring the Results for Historical Values of Income Inequality

In the results sections above, it was often observed that results for ten year lags are contradictory to those for twenty year lags. How can we understand this difference? Is it that there is a differential effect of historical inequality experience contingent on the duration of time passed? We can not provide a conclusive answer here; to obtain a better understanding, the basic configuration with year fixed effects and the basic configuration with OECD macro controls and year fixed effects where estimated, using lagged Gini measures with lags running from 5 to 30 years. In Table 24 we see summary statistics for these estimates for the Gini of net incomes. Column 1 depicts the number of years the respective Gini measure was lagged. Then there are two columns for each symbolic value. The first, coloured column named "positive" shows the percentage of positive estimation coefficients in all twelve estimations for the respective time span. The second column with the title "star1" indicates the fraction of coefficients that are significant at five percent. The sign indicates the sign of the actual coefficients. The number in the first column will be set in bold if at least half the coefficients are significant. Presently, only the results for the items establishing work ethics are presented and discussed. The general problem with historical data will become clear in these examples. The same overview statistics for the other items and the estimates with the Gini of gross income can be found in Appendix I, Tables A8 to A14.

For *child-hardwork* the effect of net income inequality as measured by the Gini coefficient varies over the historical horizon. For five year lags all estimates are positive. But already for six year lags only two out of twelve coefficients are positive. Coefficients remain mostly negative until lagged 14 years. If the data is lagged for 8 to 12 years, there is a consistent negative, mostly significant relation. From 15 to 19 years the effect is undetermined with positive and negative coefficients. For 20 to 22 years all coefficients are positive. For the remaining years the coefficients are mostly negative again, however not significantly so.

Table 24. Summary of estimation results for lagged net-gini for work ethic

	child-hardwork		*child-determination*		*money-work*		*work-duty*		*work-unemp*	
	positive	star1	positive	star1	positive	star1	positive	star1	positive	star1
5	1.00	0.08	0.42	0.00	**1.00**	0.50	0.50	0.33	0.00	0.00
6	0.17	0.00	0.25	0.00	**1.00**	0.50	0.50	0.33	0.00	0.00
7	0.17	-0.42	0.17	0.00	0.50	0.33	**0.33**	-0.50	0.08	0.00
8	**0.00**	-0.75	0.00	-0.33	0.50	0.00	**0.33**	-0.50	0.42	0.00
9	**0.00**	-0.83	0.00	-0.33	0.00	0.00	**0.00**	-1.00	0.42	-0.08
10	**0.00**	-0.67	**0.00**	-0.50	0.00	0.00	**0.00**	-0.58	0.42	-0.08
11	**0.00**	-0.75	**0.00**	-0.50	0.00	0.00	**0.00**	-1.00	0.42	-0.08
12	**0.08**	-0.67	**0.00**	-0.50	0.00	0.00	**0.00**	-1.00	0.42	-0.08
13	0.08	-0.25	0.00	-0.42	0.00	0.00	**0.00**	-1.00	0.42	0.00
14	0.00	-0.17	**0.00**	-0.50	0.00	0.00	**0.00**	-1.00	0.50	0.25
15	0.58	0.00	0.00	0.00	0.00	0.00	**0.00**	-1.00	0.50	0.00
16	0.33	0.00	0.00	-0.08	0.00	0.00	**0.00**	-1.00	**0.33**	-0.50
17	0.42	0.00	0.00	-0.08	1.00	0.00	**0.00**	-0.83	**0.00**	-0.50
18	0.42	0.00	0.42	0.00	1.00	0.42	**0.00**	-0.50	**0.00**	-1.00
19	0.58	0.00	0.42	0.00	**1.00**	1.00	0.00	0.00	**0.00**	-0.58
20	1.00	0.00	0.42	0.00	**1.00**	1.00	0.25	0.00	**0.42**	-0.50
21	1.00	0.33	0.50	0.25	**1.00**	0.50	0.33	0.00	**0.17**	-0.50
22	**1.00**	0.50	0.50	0.00	**1.00**	0.50	0.75	0.00	**0.00**	-0.75
23	0.33	0.00	0.00	-0.42	1.00	0.00	0.67	0.00	**0.00**	-0.83
24	0.00	0.00	**0.00**	-0.50	0.00	0.00	0.67	0.00	**0.00**	-0.58
25	0.00	0.00	0.00	-1.00	0.00	0.00	0.17	0.00	0.17	0.00
26	0.00	0.00	0.50	0.00	0.50	0.00	0.42	-0.42	**0.00**	-0.83
27	0.50	0.00	1.00	0.17	0.50	0.00	0.50	0.00	**0.50**	0.50
28	0.00	0.00	0.50	0.00	**0.00**	-0.50	**0.33**	-0.50	**0.92**	0.50
29	0.00	0.00	0.50	0.00	0.00	0.00	**0.00**	-0.50	**0.00**	-0.50
30	0.00	0.00	0.67	0.00	1.00	0.00	1.00	0.00	**0.00**	-0.50

For *child-determination* the association with the Gini of net incomes is mostly negative over the whole time span. For a lot of years the results are undetermined. For the years 8 till 17 all coefficients are consistently negative, for the years 10 to 14 they are also often significant. For *money-work* the relation with different historical values of the net-gini is quite cyclical. For 5 and 6 year lags the association is positive and mostly significant. For 9 to 16 year all estimated coefficients are negative but insignificant. For the years 17 to 23 all estimated coefficients are positive and mostly significant. If the net-gini is lagged 24 to 29 years, the majority of resulting coefficients is negative. The historical effect of the net-gini on

work-duty is mostly negative. There are some positive coefficients for the years 5 and 6 and from 22 onward. However, these results are ambiguous. For the years 7 to 18 there is a consistent and often significant association between the Gini of net incomes and *work-duty*. For *work-unemp* the statistical association with the Gini of net incomes over the historical spectrum is again mostly negative. Results from 7 to 15 years are ambiguous. From 16 to 24 years most coefficients are significantly negative. From 26 to 30 years there are positive and negative results, both to a considerable degree significant. Accordingly, it is difficult to make sense of these results.

Since it is very unlikely that the effect of some historical inequality experience changes dramatically from one year to the next, these examples suggest that for any given year of lagged data the observed effect is spurious. It seems wise to assert a meaningful relation only if results are similar over the whole time span or the choice of a lag period is driven by theoretical guidance.

Taking a more aggregated look at the results might help to identify some statistical relations. Table 25 depicts the summary statistics for all estimation results. Column 1 indicates respective symbolic values, columns 2 and 5 the number of negative coefficients and the fraction of these with a significance level of 5% or higher. Columns 3 and 6 indicate the fraction of positive significant coefficients and their absolute number and Column 4 and 7 provide the total number of estimations and the percentage of significant coefficients. For example, for *child-determination*, *work-duty*, *work-unemp* and *child-thrift*, looking at the results for the Gini of net incomes, there are more than twice as much negative coefficients than positive ones. Also the fraction of significant negative coefficients is higher. Accordingly, there is some indication that for these variables there is a negative relation with historical levels of the Gini of net incomes. In contrast, *money-work* or *justify-bribe* does not exhibit any clear relation with historical values of the Gini of net incomes.

Table 25. Aggregate statistics of results of estimations with lagged Gini measures

	net			gross		
	negative Coef	positive Coef	Total	negative Coef	positive Coef	Total
child-hardwork	0.245	0.119	0.208	0.272	0.1	0.173
	220	92	312	132	180	312
child-determination	0.261	0.066	0.214	0.153	0.285	0.192
	237	75	312	221	91	312
money-work	0.053	0.395	0.211	0.442	0.298	0.358
	168	144	312	131	181	312
work-duty	0.588	0.098	0.461	0.192	0.121	0.169
	231	81	312	213	99	312
work-unemp	0.397	0.328	0.381	0.247	0.402	0.314
	239	73	312	178	134	312

justify-govbenefit	0.237	0.318	0.266	0.2	0.285	0.256
	202	110	312	105	207	312
justify-nofare	0.210	0.037	0.150	0.263	0.078	0.157
	204	108	312	133	179	312
justify-taxcheat	0.529	0.066	0.217	0.186	0.131	0.150
	102	210	312	107	205	312
justify-bribe	0.073	0.342	0.237	0.266	0.323	0.298
	122	190	312	139	173	312
child-obedience	0.103	0.033	0.083	0.136	0.107	0.128
	223	89	312	219	93	312
instructions-convince	0.272	0.08	0.195	0.247	0.153	0.208
	187	125	312	182	130	312
instructions-follow	0.324	0.593	0.407	0.489	0.518	0.496
	216	96	312	233	79	312
respect-authority-bad	0	0.157	0.116	0.086	0.293	0.169
	31	89	120	186	126	312
respect-authority-good	0.176	0.235	0.198	0.253	0	0.179
	193	119	312	221	91	312
justify-lying	0.190	0.220	0.201	0.129	0.088	0.112
	194	118	312	177	135	312
child-unselfish	0.011	0	0.006	0.006	0.176	0.086
	178	134	312	165	147	312
child-tolerance	0.030	0.129	0.067	0.019	0.065	0.035
	196	116	312	205	107	312
child-thrift	0.111	0.022	0.086	0.111	0.0384	0.092
	225	87	312	234	78	312
Total	0.225	0.183	0.209	0.201	0.195	0.198
	3368	2056	5424	3181	2435	5616

These estimation results from lagged Gini values indicate that the use of lagged measures of income inequality is problematic. While lags are an easy way to reduce the problem of endogeneity, it becomes obvious that the time frame chosen determines results. Unless a specific lag is proposed by the theory, lagged variables should rather not be used. In contrast, the use of individualised historical values, like mean level of the Gini coefficient when the respondent was aged 17-25 is justified on the ground of psychological findings (Giuliano and Spilimbergo 2009).

13. Conclusion

We find a statistically credible and economically sensible association between good work ethics and income inequality as measured by the Gini coefficient of gross- and net incomes. Higher levels of income inequality also seem to be associated with a more obedient but less tolerant society. While the statistical evidence is weak for each individual item measuring obedience, together they show a clear tendency. The level of inequality of market

incomes, i.e. the Gini of gross incomes, shoes a negative association with honesty. For the Gini of net incomes no association with honesty is observed. There is also no identifiable effect of income inequality on civism, altruism or saving behaviour.

Inequality is important to some, but not to all symbolic values analyzed in this paper. In contrast to many instances when high inequality results in negative social outcomes, as listed by Wilkinson and Pickett (2009), we only find detrimental effects of contemporaneous income inequality on tolerance and honesty. The normative implications for the effect of obedience are open to debate.[13]

The results on work ethic and obedience rise interesting questions with respect to productivity and innovation activity. Are more obedient societies less innovative? And do higher average levels of work ethic also imply higher average productivity? If symbolic values can be used to answer such questions, this will allow us to better understand the "constructive" and "destructive" (Birdsall 2001) aspects of income inequality.

To further our understanding of the effects of income inequality, it is necessary to better understand the interplay of historical and contemporaneous economic levels and characteristics of economic activity on individuals' values and mind sets. Given the limitations of the Gini coefficient as measure of the income distribution, it is necessary to repeat this analysis with different measures of income distribution. Keeping in mind Voitchovsky's (2005) cautionary tale, that not the level but the profile of income inequality might be decisive, the present work should be seen as a first step in the exploration of the effects of income inquality on symbolic values.

[13] Obviously, the author considers honesty and tolerance desirable traits. This normative position is of course debatable, as any normative position is.

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Appendix I

Table A1. Summary Statistics of Symbolic Values

Variable	*Obs.*	*Mean*	*Std. Dev.*	*Min*	*Max*
child-hardwork	193933	0.403	0.490	0	1
child-determination	189993	0.358	0.479	0	1
money-work	93802	3.346	1.219	1	5
work-duty	93964	3.728	1.053	1	5
work-unemp	102623	4.573	2.782	1	10
justify_govbenefit	181683	2.260	2.154	1	10
justify_nofare	170824	2.404	2.189	1	10
justify_taxcheat	182487	2.395	2.230	1	10
justify_bribe	186620	1.746	1.627	1	10
child-obedience	192675	0.295	0.456	0	1
instructions-follow	159128	0.359	0.480	0	1
instructions-convince	159128	0.371	0.483	0	1
respect-authority-good	185942	0.551	0.497	0	1
respect_ authority_bad	185942	0.199	0.399	0	1
justify_lying	123635	2.790	2.215	1	10
child-unselfish	191335	0.280	0.449	0	1
child-tolerance	193159	0.716	0.451	0	1
child-thrift	192871	0.347	0.476	0	1

Table A2. Log of per capita GDP (OECD)

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	9.88	.	10.11	.	10.35	.	10.12
Austria	.	10.06	.	10.23	.	10.40	10.23
Belgium	9.84	10.03	.	10.19	.	10.29	10.10
Canada	9.90	10.07	.	10.26	10.35	.	10.18
Czech Rep	.	9.50	9.56	9.58	.	9.93	9.63
Denmark	9.84	10.05	.	10.24	.	10.34	10.13
Estonia	.	.	8.89	9.10	.	9.72	9.30
Finland	.	9.99	9.96	10.15	10.27	10.27	10.14
France	9.80	9.98	.	10.11	10.20	10.21	10.07
Germany	.	9.99	10.09	10.13	10.22	10.26	10.12
Greece	.	.	.	9.78	.	10.09	9.95
Hungary	.	9.20	9.31	9.35	.	9.66	9.42
Iceland	9.99	10.12	.	10.24	.	10.40	10.18
Ireland	9.35	9.66	.	10.18	.	10.45	9.88
Israel	.	.	.	10.04	.	.	10.04
Italy	9.77	10.00	.	10.11	10.17	10.11	10.03
Japan	9.69	10.06	10.11	10.15	10.21	.	10.04
South Korea	8.52	9.21	9.60	9.78	9.95	.	9.45
Luxembourg	.	.	.	10.82	.	11.08	10.97
Mexico	.	9.06	9.06	9.21	9.25	.	9.14
Netherlands	9.86	10.04	.	10.26	10.36	10.41	10.20
New Zealand	.	.	9.90	.	10.07	.	9.97
Norway	9.99	10.19	10.39	.	10.60	10.60	10.35

Poland	.	8.90	9.13	9.22	9.42	9.60	9.28
Portugal	.	9.52	.	9.75	.	9.82	9.71
Slovakia	.	.	9.29	9.29	.	9.78	9.48
Slovenia	.	.	9.56	9.73	9.94	10.09	9.85
Spain	9.46	9.72	9.79	9.95	10.09	10.09	9.80
Sweden	9.89	10.07	10.08	10.20	10.39	10.33	10.17
Switzerland	.	10.29	10.28	.	10.44	10.45	10.36
Turkey	.	8.92	9.05	9.05	9.37	9.30	9.13
UK	9.68	9.95	10.10	10.13	10.29	10.25	10.07
USA	10.01	10.25	10.31	10.43	10.55	.	10.27
Mean	9.73	9.81	9.72	9.87	10.12	10.12	9.90

Table A3. Log of per capita GDP (WDI)

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	9.92	.	10.15	.	10.40	.	10.16
Austria	.	10.15	.	10.33	.	10.49	10.33
Belgium	9.94	10.13	.	10.28	.	10.38	10.20
Canada	10.01	10.18	.	10.37	10.48	.	10.29
Czech Rep	.	9.62	9.68	9.70	.	10.05	9.75
Denmark	9.93	10.14	.	10.33	.	10.44	10.23
Estonia	.	9.22	9.02	9.20	.	9.84	9.38
Finland	.	10.06	10.03	10.22	10.33	10.34	10.21
France	9.92	10.10	.	10.22	10.32	10.33	10.18
Germany	.	10.15	10.26	10.30	10.39	10.43	10.29
Greece	.	.	.	9.89	.	10.21	10.07
Hungary	9.33	9.29	9.41	9.45	.	9.80	9.48
Iceland	10.03	10.15	.	10.28	.	10.43	10.22
Ireland	9.47	9.78	.	10.31	.	10.58	10.00
Israel	.	.	.	10.03	.	.	10.03
Italy	9.85	10.08	.	10.19	10.25	10.19	10.11
Japan	9.85	10.16	10.22	10.26	10.32	.	10.16
South Korea	8.72	9.34	9.72	9.87	10.03	.	9.57
Luxembourg	.	.	.	10.95	.	11.20	11.09
Mexico	.	9.22	9.24	9.40	9.44	.	9.32
Netherlands	9.99	10.18	.	10.39	10.50	10.55	10.33
New Zealand	.	.	9.93	.	10.10	.	10.00
Norway	10.18	10.38	10.58	.	10.80	10.80	10.54
Poland	.	9.01	9.23	9.32	9.53	9.71	9.39
Portugal	.	9.67	.	9.89	.	9.96	9.85
Slovakia	.	9.32	9.44	9.44	.	9.93	9.54
Slovenia	.	9.56	9.68	9.85	10.06	10.21	9.89
Spain	9.63	9.89	9.95	10.11	10.26	10.25	9.97
Sweden	9.95	10.12	10.14	10.25	10.43	10.38	10.22
Switzerland	.	10.39	10.38	.	10.54	10.55	10.46
Turkey	.	8.96	9.09	9.08	9.39	9.32	9.16
UK	9.81	10.08	10.23	10.26	10.42	10.38	10.19
USA	10.15	10.39	10.45	10.57	10.67	.	10.40
Mean	9.81	9.88	9.84	9.97	10.23	10.23	10.00

Table A4. Unemployment rate (OECD)

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	5.78	.	8.49	.	5.04	.	6.75
Austria	.	3.23	.	3.79	.	3.83	3.62
Belgium	10.40	8.92	.	8.56	.	7.91	8.85
Canada	11.04	8.13	.	6.83	6.32	.	7.74
Czech Rep	.	3.30	6.51	8.80	.	4.41	5.35
Denmark	10.43	8.41	.	5.58	.	3.38	6.71
Finland	.	3.19	14.63	9.81	8.42	8.28	9.34
France	6.81	8.07	.	10.01	8.77	7.43	8.29
Germany	.	4.78	9.91	8.46	10.33	7.56	7.80
Greece	.	.	.	11.85	.	7.23	9.23
Hungary	.	.	7.93	7.06	.	7.89	7.63
Iceland	1.25	1.76	.	2.01	.	7.24	2.99
Ireland	10.50	13.03	.	5.94	.	5.67	8.88
Italy	7.99	11.48	.	11.52	7.81	7.87	9.73
Japan	2.21	2.10	3.15	4.73	4.42	.	3.39
South Korea	4.35	2.45	2.04	4.00	3.73	.	3.26
Luxembourg	.	.	.	2.08	.	3.06	2.64
Mexico	.	2.74	5.25	2.56	3.51	.	3.71
Netherlands	8.65	7.61	.	3.51	3.91	2.75	5.17
New Zealand	.	.	7.70	.	4.03	.	6.09
Norway	2.65	5.32	4.88	.	2.60	2.60	3.70
Poland	.	6.47	11.21	13.94	17.74	7.12	11.00
Portugal	.	4.61	.	4.43	.	7.64	5.82
Slovakia	.	.	12.60	16.35	.	9.57	12.71
Spain	14.16	16.32	22.96	14.80	8.29	11.38	14.94
Sweden	3.53	1.81	9.98	7.17	7.07	8.31	6.49
Switzerland	.	0.46	3.46	.	3.42	3.20	2.56
Turkey	.	8.00	6.62	8.37	10.28	14.03	9.44
UK	9.07	6.86	6.13	5.98	5.42	7.75	6.96
USA	9.69	5.60	5.60	4.22	4.62	.	6.42
Mean	8.09	6.87	8.08	7.87	6.65	7.00	7.39

Table A5. Unemployment rate (WDI)

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	5.80	.	8.50	.	5.10	.	6.77
Austria	.	3.20	.	4.70	.	3.80	3.91
Belgium	.	7.30	.	8.60	.	.	7.83
Canada	11.00	8.10	.	6.80	6.30	.	7.71
Czech Rep	.	.	6.50	8.70	.	4.40	6.59
Denmark	.	8.30	.	5.10	.	3.30	5.26
Estonia	.	0.60	9.90	12.20	.	5.50	6.88
Finland	.	3.10	14.40	9.70	8.40	.	9.55
France	7.00	9.40	.	12.00	8.80	7.40	9.04
Germany	.	.	9.90	8.90	10.20	7.50	9.12
Greece	.	.	.	11.90	.	7.70	9.51
Hungary	.	.	8.90	6.90	.	7.80	7.74
Iceland	.	.	.	2.00	.	.	2.00
Ireland	10.50	14.10	.	5.80	.	6.00	9.18
Israel	.	.	.	9.30	.	.	9.30

Italy	7.90	9.80	.	11.70	7.70	.	9.66
Japan	2.30	2.10	3.20	4.80	4.40	.	3.43
South Korea	4.40	2.50	2.00	4.00	3.70	.	3.26
Luxembourg	.	.	.	2.40	.	5.10	3.94
Mexico	.	.	5.20	2.60	3.50	.	3.97
Netherlands	.	7.40	.	3.50	4.30	2.80	4.31
New Zealand	.	.	7.40	.	3.90	.	5.86
Norway	2.70	5.30	4.80	.	2.60	2.60	3.69
Poland	.	.	11.20	12.50	17.70	7.10	11.59
Portugal	.	4.70	.	4.40	.	7.60	5.82
Slovakia	.	.	12.60	16.40	.	9.50	12.70
Slovenia	.	.	7.20	7.40	5.70	4.40	6.03
Spain	13.70	16.00	22.70	14.75	8.30	11.30	14.71
Sweden	3.50	1.80	9.90	7.10	7.00	.	6.08
Switzerland	.	.	3.70	.	3.60	3.40	3.56
Turkey	.	8.00	6.60	8.40	9.90	.	8.19
UK	.	7.00	6.20	6.00	5.40	.	6.23
USA	9.70	5.60	5.60	4.20	4.60	.	6.41
Mean	7.97	7.73	8.10	8.08	6.58	6.05	7.46

Table A6. Real growth rate of GDP (OECD)

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	3.17	.	4.10	.	3.00	.	3.53
Austria	.	4.17	.	3.34	.	2.05	3.18
Belgium	-0.28	3.14	.	3.54	.	.	2.60
Canada	-2.86	0.19	.	5.23	2.85	.	1.84
Czech Rep	.	-11.61	-0.76	1.34	.	2.46	-2.64
Denmark	-0.89	1.48	.	2.56	.	-0.87	0.38
Estonia	.	.	5.69	-0.30	.	-3.58	0.02
Finland	.	0.08	3.70	5.06	2.77	.	3.24
France	0.92	2.64	.	3.30	2.22	0.43	1.89
Germany	.	5.26	1.80	2.01	3.16	1.26	3.01
Greece	.	.	.	3.42	.	2.01	2.62
Hungary	.	.	5.16	4.23	.	0.64	2.71
Iceland	4.13	1.17	.	4.09	.	.	3.32
Ireland	3.33	8.47	.	10.65	.	-3.04	4.82
Israel	.	.	.	-0.04	.	.	-0.04
Italy	0.84	2.05	.	1.46	0.66	.	1.39
Japan	2.93	5.20	1.96	2.86	1.93	.	2.95
South Korea	7.33	9.16	7.00	3.97	3.96	.	6.27
Luxembourg	.	.	.	8.42	.	0.03	3.63
Mexico	.	5.07	5.15	6.59	3.28	.	5.03
Netherlands	-0.78	4.18	.	4.68	3.39	2.00	2.51
New Zealand	.	.	0.52	.	3.77	.	1.94
Norway	0.13	1.93	5.10	.	2.13	2.13	2.31
Poland	.	.	7.09	4.52	3.62	5.00	5.11
Portugal	.	3.95	.	3.84	.	-0.04	2.26
Slovakia	.	.	4.36	0.03	.	6.17	3.59
Slovenia	.	.	.	5.37	4.49	3.49	4.35
Spain	-0.13	3.78	2.76	4.90	3.56	0.86	2.83
Sweden	1.19	1.01	1.46	4.60	4.25	.	2.86

Switzerland	.	4.55	0.63	.	3.61	1.78	2.71
Turkey	.	9.26	7.01	-5.70	4.67	.	0.33
UK	-1.32	0.78	3.61	3.47	2.85	.	1.73
USA	-1.98	1.86	2.55	4.87	2.67	.	1.46
Mean	0.66	2.76	3.71	2.76	3.16	1.32	2.48

Table A7. Real growth rate of GDP (WDI)

country\wave	*1980-1984*	*1989-1993*	*1994-1998*	*1999-2004*	*2005-2008*	*2008-2009*	Mean
Australia	3.40	.	4.08	.	2.84	.	3.53
Austria	.	4.17	.	3.34	.	2.18	3.22
Belgium	-0.28	3.14	.	3.54	.	-2.75	1.50
Canada	-2.86	0.19	.	5.23	2.82	.	1.83
Czech Rep	.	-11.61	-0.76	1.34	.	2.46	-2.64
Denmark	-0.89	1.61	.	2.56	.	-0.87	0.40
Estonia	.	-7.06	4.98	-0.14	.	-5.13	-2.19
Finland	.	0.53	3.58	5.34	2.92	-8.02	0.73
France	0.92	2.64	.	3.30	2.22	0.22	1.84
Germany	.	5.26	1.80	2.01	3.37	0.99	3.00
Greece	.	.	.	3.42	.	2.01	2.62
Hungary	2.84	-11.89	5.16	4.23	.	0.60	0.14
Iceland	4.13	1.17	.	4.09	.	-6.49	0.99
Ireland	3.33	8.47	.	10.65	.	-3.04	4.82
Israel	.	.	.	-0.04	.	.	-0.04
Italy	0.84	2.05	.	1.46	0.66	-5.04	0.15
Japan	4.18	5.57	1.88	2.86	1.93	.	3.26
South Korea	7.33	9.16	7.00	3.97	3.96	.	6.27
Luxembourg	.	.	.	8.42	.	0.03	3.63
Mexico	.	5.07	5.14	6.60	3.21	.	5.01
Netherlands	-0.78	4.18	.	4.68	3.39	2.00	2.51
New Zealand	.	.	0.52	.	3.66	.	1.90
Norway	0.13	1.93	5.10	.	1.82	1.82	2.19
Poland	.	.	7.09	4.52	3.62	5.00	5.11
Portugal	.	3.95	.	4.08	.	-0.03	2.33
Slovakia	.	-11.11	4.36	0.03	.	6.17	-0.66
Slovenia	.	-5.46	3.64	5.37	4.49	3.49	2.36
Spain	-0.13	3.78	2.76	4.90	3.56	0.86	2.83
Sweden	1.20	1.00	1.61	4.66	4.30	-5.14	1.60
Switzerland	.	4.55	0.63	.	3.64	1.90	2.75
Turkey	.	9.27	7.38	-5.70	4.67	-4.69	-0.65
UK	-1.32	0.78	3.61	3.47	2.85	-4.92	0.33
USA	-1.98	1.86	2.55	4.87	2.67	.	1.46
Mean	0.88	1.42	3.70	2.78	3.15	-0.50	1.82

Table A8. Summary of estimation results for lagged net-gini for civic morals

	justify_govbenefit		*justify_nofare*		*justify_taxcheat*		*justify_bribe*	
	positive	star1	positive	star1	positive	star1	positive	star1
5	0.00	-0.25	0.08	0.00	0.67	0.00	0.33	0.00
6	0.00	-0.25	0.42	0.00	0.67	0.00	0.33	0.00
7	**0.00**	-0.67	0.25	-0.08	0.42	0.00	0.33	0.00
8	0.08	-0.33	0.42	0.00	0.25	0.00	0.83	0.00
9	0.33	-0.33	0.33	-0.17	1.00	0.08	**1.00**	0.83
10	0.33	0.00	0.33	-0.17	0.83	0.00	**1.00**	0.83
11	0.25	0.00	0.00	-0.42	0.83	0.00	**1.00**	0.83
12	0.25	0.00	0.00	-0.42	0.58	0.00	**1.00**	0.92
13	0.33	0.00	0.25	-0.17	0.67	0.08	**1.00**	0.83
14	0.33	0.00	0.42	-0.17	0.58	0.00	0.92	0.00
15	0.42	0.00	0.58	0.00	1.00	0.00	1.00	0.25
16	0.42	0.00	0.08	-0.25	1.00	0.00	0.83	0.42
17	**1.00**	0.75	0.33	0.00	1.00	0.25	1.00	0.42
18	**1.00**	0.75	0.58	0.00	1.00	0.00	1.00	0.00
19	0.92	0.00	0.58	0.00	1.00	0.25	0.42	0.00
20	**1.00**	0.58	0.50	0.00	1.00	0.00	0.25	0.00
21	**1.00**	0.83	0.83	0.25	1.00	0.00	0.00	0.00
22	1.00	0.00	0.75	0.00	1.00	0.00	0.00	-0.25
23	0.42	0.00	0.75	0.08	**1.00**	0.50	1.00	0.00
24	0.00	0.00	0.50	0.00	1.00	0.00	1.00	0.00
25	0.08	0.00	0.25	0.00	1.00	0.00	1.00	0.08
26	**0.00**	-0.50	0.50	0.00	**0.00**	-0.50	0.00	0.00
27	**0.00**	-0.50	0.25	-0.25	**0.00**	-1.00	**0.00**	-0.50
28	**0.00**	-0.50	**0.00**	-0.50	**0.00**	-1.00	0.00	0.00
29	**0.00**	-0.50	**0.00**	-0.50	**0.00**	-1.00	0.00	0.00
30	0.00	-0.17	**0.00**	-0.50	**0.00**	-1.00	0.58	0.00

Table A9. Summary of estimation results for lagged net-gini for obedience

	child-obedience		*instructions-follow*		*instructions-convince*		*respect-authority-good*		*respect-authority-bad*	
	positive	star1	positive	star1	positive	star1	positive	star1	positive	star1
5	0.92	0.00	0.00	0.00	0.50	0.00	0.00	-0.17	0.50	0.08
6	0.92	0.00	0.00	0.00	0.50	0.17	0.00	-0.17	0.75	0.08
7	0.33	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.42	0.00
8	0.00	0.00	0.00	0.00	0.50	0.08	0.00	0.00	0.92	0.00
9	0.08	0.00	0.00	-0.42	0.50	0.00	0.00	0.00	0.92	0.00
10	0.00	0.00	0.00	-0.42	0.50	0.08	0.00	0.00	0.67	0.00
11	0.00	0.00	0.00	-0.42	0.50	0.00	0.42	0.00	0.75	0.17
12	0.00	0.00	0.00	-0.42	0.50	0.00	0.50	0.00	0.75	0.17
13	0.00	0.00	0.00	-0.42	0.50	0.00	0.67	0.00	0.75	0.17
14	0.00	-0.08	0.08	-0.42	0.42	0.00	0.75	0.00	**1.00**	0.50
15	0.08	0.00	0.08	-0.42	0.42	-0.33	0.08	0.00		
16	0.08	0.00	0.00	-0.42	0.50	0.00	0.00	-0.08		
17	0.58	0.00	**0.00**	-0.83	0.00	0.00	0.00	0.00		
18	0.50	0.00	**0.00**	-1.00	0.00	0.00	0.00	-0.42		
19	0.42	0.00	0.00	-0.42	0.08	0.00	0.00	-0.58		
20	0.50	0.00	0.08	-0.25	0.00	-0.42	0.00	-0.42		
21	0.50	0.00	0.33	0.00	**0.00**	-0.50	**0.00**	-0.75		
22	0.42	0.00	**0.50**	0.50	0.50	0.00	0.00	-0.25		
23	0.50	0.00	**0.50**	0.50	0.50	0.00	1.00	0.00		
24	0.50	0.00	**1.00**	0.50	1.00	0.00	**1.00**	0.50		
25	0.00	0.00	0.83	0.33	**1.00**	0.50	**1.00**	0.50		
26	0.50	0.00	1.00	0.33	0.50	0.00	0.50	0.08		
27	0.17	-0.42	0.58	0.25	0.00	-0.33	1.00	0.00		

28	**0.00**	-1.00	**1.00**	1.00	**0.00**	-1.00	**1.00**	0.67	
29	0.00	-0.42	**1.00**	0.83	0.50	0.00	1.00	0.08	
30	0.42	0.00	**1.00**	0.50	0.50	0.00	**1.00**	0.50	

Table A10. Summary of estimation results for lagged net-gini for remaining symbolic values

	justify_lying		*child-unselfish*		*child-tolerance*		*child-thrift*	
	positive	star1	positive	star1	positive	star1	positive	star1
5	0.50	0.08	0.92	0.00	0.08	-0.33	0.42	0.00
6	0.58	0.33	0.92	0.00	0.25	0.00	0.42	0.00
7	0.58	0.33	0.08	0.00	0.08	0.00	0.08	0.00
8	0.92	0.33	0.08	0.00	0.42	0.00	0.08	0.00
9	0.50	0.00	0.08	0.00	0.42	0.00	0.17	0.00
10	0.25	0.00	0.42	0.00	0.50	0.00	0.00	-0.42
11	0.17	-0.08	0.42	0.00	0.42	0.00	0.00	-0.42
12	0.08	-0.08	0.42	0.00	0.42	0.00	0.00	-0.42
13	0.25	-0.08	0.42	0.00	0.75	0.33	0.00	-0.42
14	0.50	0.00	0.42	-0.08	0.75	0.00	0.00	-0.42
15	0.50	0.00	0.42	0.00	0.58	0.00	0.08	0.00
16	0.58	0.00	0.83	0.00	0.92	0.00	0.17	0.00
17	0.58	0.00	0.42	0.00	0.50	0.00	0.08	0.00
18	0.42	0.00	0.42	0.00	0.50	0.00	0.50	0.00
19	0.50	0.00	0.42	0.00	0.42	0.00	0.42	0.00
20	0.50	0.00	0.50	0.00	0.42	0.00	0.00	0.00
21	0.50	0.00	0.50	0.00	0.17	0.00	0.50	0.00
22	0.25	0.00	0.50	0.00	0.00	0.00	0.25	0.00
23	0.00	-0.33	0.50	0.00	0.50	0.08	0.00	0.00
24	**0.00**	-0.50	0.50	0.00	**0.58**	0.50	0.00	0.00
25	**0.00**	-0.50	0.50	0.00	0.50	0.00	0.00	0.00
26	0.00	-0.17	0.50	0.00	0.00	0.00	0.67	0.00
27	0.17	0.00	0.50	0.00	0.00	-0.17	1.00	0.08
28	0.50	0.25	0.00	0.00	0.00	0.00	0.42	0.00
29	0.00	-0.50	0.00	0.00	0.08	0.00	1.00	0.00
30	**1.00**	0.83	0.50	0.00	0.42	0.00	1.00	0.00

Table A11. Summary of estimation results for lagged gross-gini for work ethic

	child-hardwork		*child-determination*		*money-work*		*work-duty*		*work-unemp*	
	positive	star1	positive	star1	positive	star1	positive	star1	positive	star1
5	1.00	0.08	0.50	0.00	**1.00**	0.50	0.33	0.00	0.00	-0.42
6	0.58	0.00	0.00	0.00	**1.00**	0.50	0.33	0.00	0.00	-0.42
7	0.08	0.00	0.00	0.00	**1.00**	0.50	0.00	-0.42	0.00	-0.42
8	**0.00**	-0.75	0.00	-0.33	1.00	0.42	**0.00**	-0.50	**0.08**	-0.58
9	**0.00**	-0.83	0.00	-0.42	0.08	0.00	**0.00**	-0.50	0.42	0.00
10	**0.00**	-0.67	**0.00**	-0.58	**0.00**	-0.50	**0.00**	-0.58	0.50	0.42
11	0.00	-0.42	0.00	-0.33	**0.00**	-1.00	**0.00**	-0.50	**0.50**	0.50
12	0.17	-0.25	0.00	-0.33	**0.00**	-1.00	0.00	-0.08	**0.75**	0.50
13	0.25	0.00	0.00	0.00	**0.00**	-1.00	0.00	-0.33	0.92	0.42
14	0.17	0.00	0.00	0.00	**0.00**	-0.50	0.00	0.00	0.92	0.42
15	0.17	0.00	0.00	0.00	0.00	-0.42	0.00	-0.25	**0.92**	0.50
16	0.17	0.00	0.00	-0.08	0.00	0.00	0.00	-0.25	0.92	0.08
17	0.08	-0.08	0.33	0.00	0.00	0.00	0.33	0.00	0.92	0.00
18	0.50	0.00	0.42	0.00	1.00	0.00	0.67	0.00	0.83	0.00
19	0.92	0.08	0.33	-0.08	1.00	0.00	0.17	0.00	0.25	-0.08
20	1.00	0.00	0.42	0.00	1.00	0.00	0.00	0.00	0.50	0.33
21	1.00	0.33	1.00	0.17	0.50	0.00	0.00	0.00	**0.50**	0.50

22	1.00	0.00	**0.75**	0.50	1.00	0.00	0.50	0.00	0.00	0.00
23	1.00	0.00	0.50	0.00	1.00	0.42	0.92	0.00	0.00	0.00
24	1.00	0.00	0.00	0.00	1.00	0.42	0.83	0.00	0.17	0.00
25	1.00	0.00	0.08	0.00	1.00	0.42	0.00	0.00	1.00	0.42
26	1.00	0.25	**1.00**	0.50	1.00	0.42	0.67	0.00	**0.00**	-0.50
27	**1.00**	0.50	**1.00**	1.00	0.50	0.00	1.00	0.00	0.58	0.00
28	1.00	0.25	0.75	0.00	0.00	-0.42	0.50	0.00	0.50	0.00
29	0.92	0.00	0.00	-0.33	1.00	0.00	1.00	0.00	0.00	-0.33
30	1.00	0.00	0.50	0.00	**1.00**	0.92	**1.00**	1.00	**0.00**	-0.50

Table A12. Summary of estimation results for lagged gross-gini for civic morals

	justify_govbenefit		*justify_nofare*		*justify_taxcheat*		*justify_bribe*	
	positive	star1	positive	star1	positive	star1	positive	star1
5	0.92	0.00	0.67	0.00	0.92	0.33	0.42	0.00
6	1.00	0.00	0.92	0.00	1.00	0.42	0.92	0.00
7	1.00	0.00	0.42	0.00	1.00	0.08	0.92	0.00
8	1.00	0.08	0.33	0.00	1.00	0.00	1.00	0.33
9	0.50	0.00	0.08	0.00	0.58	0.08	**1.00**	0.67
10	0.50	0.00	0.00	-0.42	0.50	0.08	1.00	0.08
11	0.25	-0.42	**0.00**	-0.58	0.42	0.00	1.00	0.00
12	**0.00**	-0.50	**0.00**	-0.58	0.08	0.00	0.92	0.00
13	0.00	-0.17	**0.00**	-0.75	0.08	0.00	0.92	0.25
14	0.00	-0.08	0.00	-0.25	0.92	0.00	0.83	0.42
15	0.00	-0.08	0.83	0.00	0.83	0.17	**1.00**	0.83
16	0.00	-0.17	0.33	-0.08	0.83	0.25	**0.83**	0.83
17	0.83	0.00	0.25	-0.08	0.92	0.42	**1.00**	0.83
18	0.83	0.00	0.25	0.00	0.83	0.08	1.00	0.42
19	**0.83**	0.67	0.25	0.00	0.83	0.33	0.83	0.00
20	**0.83**	0.83	0.58	0.00	0.83	0.00	0.67	0.00
21	1.00	0.42	1.00	0.00	0.50	0.00	0.17	0.00
22	0.50	0.00	1.00	0.00	0.75	0.00	**0.00**	-0.92
23	0.58	0.00	1.00	0.00	1.00	0.00	0.00	0.00
24	0.67	0.00	1.00	0.00	1.00	0.00	0.00	0.00
25	1.00	0.42	1.00	0.17	0.92	0.00	0.00	-0.42
26	**1.00**	0.50	1.00	0.25	**0.00**	-0.83	**0.00**	-1.00
27	**1.00**	0.58	1.00	0.25	0.00	0.00	0.00	-0.33
28	**1.00**	0.50	1.00	0.00	**0.00**	-0.83	0.00	-0.42
29	1.00	0.25	1.00	0.17	0.67	0.00	0.00	0.00
30	**1.00**	0.67	1.00	0.33	0.67	0.00	0.00	0.00

Table A13. Summary of estimation results for lagged gross-gini for obedience

	child-obedience		*instructions-follow*		*instructions-convince*		*respect-authority-good*		*respect-authority-bad*	
	positive	star1	positive	star1	positive	star1	positive	star1	positive	star1
5	0.42	-0.08	0.08	0.00	**0.33**	-0.50	0.08	-0.08	0.17	0.00
6	0.42	0.00	0.00	-0.17	0.50	0.00	0.00	-0.08	0.08	0.00
7	0.42	0.00	0.08	-0.42	**0.42**	-0.50	0.08	0.00	0.00	0.00
8	0.33	0.00	0.00	-0.42	0.50	0.00	0.08	0.00	0.17	-0.08
9	0.00	0.00	0.00	-0.42	**0.33**	-0.50	0.58	0.00	0.17	-0.08
10	0.00	0.00	0.00	-0.42	**0.00**	-0.50	1.00	0.00	0.42	0.00
11	0.00	-0.25	0.00	-0.42	0.00	-0.08	1.00	0.00	0.42	0.00
12	**0.00**	-0.58	0.00	-0.42	0.00	-0.08	1.00	0.00	0.17	0.00
13	**0.00**	-0.58	0.00	-0.42	0.50	0.00	0.83	0.00	0.25	0.00
14	**0.00**	-0.50	**0.00**	-0.50	0.50	0.00	0.92	0.00	0.00	0.00

15	0.08	0.00	**0.00**	-0.75	0.50	0.42	0.50	0.00	0.00	-0.33
16	0.42	0.00	**0.00**	-1.00	1.00	0.00	0.17	-0.08	0.00	-0.17
17	0.00	0.00	**0.00**	-0.75	0.42	0.00	0.00	-0.08	**0.00**	-0.67
18	0.33	0.00	**0.00**	-0.50	0.42	0.00	0.00	-0.42	0.00	0.00
19	0.42	0.00	**0.00**	-0.58	0.50	0.25	0.00	-0.17	0.08	0.00
20	0.42	0.00	**0.08**	-0.83	0.50	0.00	**0.00**	-1.00	0.08	0.00
21	1.00	0.00	**0.00**	-1.00	**0.00**	-0.50	**0.00**	-0.58	1.00	0.00
22	0.92	0.42	**0.50**	0.50	0.67	0.00	**0.00**	-0.50	1.00	0.42
23	0.50	0.42	**0.50**	0.50	0.00	0.00	0.00	0.00	**1.00**	0.50
24	0.50	0.00	0.50	0.00	**0.75**	0.50	0.00	0.00	**1.00**	0.50
25	0.42	0.00	**0.42**	-0.50	1.00	0.00	**0.00**	-0.58	**1.00**	0.75
26	0.25	0.00	**0.50**	0.50	0.00	-0.08	**0.00**	-0.75	**1.00**	0.50
27	0.42	0.00	0.92	0.42	0.00	0.00	0.00	-0.33	0.33	0.00
28	**0.00**	-0.50	**1.00**	0.50	0.00	0.00	0.50	0.00	0.58	0.00
29	0.00	0.00	**1.00**	0.50	1.00	0.00	0.50	0.00	0.58	0.00
30	0.50	0.00	**1.00**	0.50	**1.00**	0.50	0.33	0.00	1.00	0.42

Table A14. Summary of estimation results for lagged gross-gini for remaining symbolic values

	justify_lying		*child-tolerance*		*child-unselfish*		*child-thrift*	
	positive	star1	positive	star1	positive	star1	positive	star1
5	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.75	0.00	0.00	0.00	0.42	0.00	0.00	-0.33
7	0.58	0.08	0.00	0.00	0.42	0.00	0.08	-0.42
8	0.58	0.00	0.42	0.00	0.42	0.00	0.08	-0.42
9	0.58	0.00	0.42	0.00	0.42	0.00	0.08	0.00
10	0.58	0.00	0.50	0.00	0.42	0.00	0.00	0.00
11	0.17	0.00	0.50	0.00	0.42	0.00	0.00	0.00
12	0.00	0.00	0.67	0.00	0.42	0.00	0.00	-0.17
13	0.00	0.00	0.67	0.17	0.42	0.00	0.00	-0.08
14	0.83	0.00	0.58	0.42	0.42	0.00	0.00	-0.17
15	0.83	0.00	0.42	0.00	0.83	0.42	0.00	-0.08
16	0.75	0.00	0.50	0.00	0.83	0.42	0.17	0.00
17	0.75	0.00	0.42	0.00	0.42	0.00	0.42	0.00
18	0.83	0.00	0.42	0.00	0.42	0.00	0.42	0.00
19	0.83	0.00	0.67	0.00	0.42	0.00	0.00	0.00
20	0.00	-0.33	0.42	0.00	0.42	-0.08	0.00	0.00
21	**0.00**	-0.50	0.08	0.00	0.50	0.00	1.00	0.17
22	0.08	0.00	0.08	0.00	0.00	0.00	0.92	0.00
23	0.00	0.00	0.50	0.00	0.50	0.00	0.42	0.00
24	**0.00**	-0.50	0.58	0.00	0.50	0.00	0.00	0.00
25	0.00	-0.33	0.00	-0.17	1.00	0.00	0.92	0.00
26	0.50	0.00	0.33	0.00	0.08	0.00	1.00	0.08
27	0.50	0.42	0.75	0.00	1.00	0.00	0.50	0.00
28	0.50	0.00	0.00	0.00	0.50	0.00	0.00	0.00
29	0.50	0.00	0.00	0.00	0.50	0.00	**0.00**	-0.50
30	**0.50**	0.50	0.00	0.00	0.58	0.00	0.50	0.00

Appendix II: Overview over items measuring symbolic values

*Work Ethic

child-hardwork

(a030) "Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five."
(CODE FIVE ONLY) Hard Work 0 'Not mentioned' 1 'Important' -1 'Don't know'

child-determination

(a039) child quality: Determination, perseverance

money-work

(c037) "Do you agree or disagree with the following statements? It is humiliating to receive money without having to work for it."
1 'Strongly agree' 2 'Agree' 3 'Neither agree or disagree' 4 'Disagree' 5 'Strongly disagree'

work-duty

(c039) "Do you agree or disagree with the following statements? Work is a duty towards society."
1 'Strongly agree' 2 'Agree' 3 'Neither agree or disagree' 4 'Disagree' 5 'Strongly disagree'

work-unemp

(e038) "Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between. Sentences: People who are unemployed should have to take any job available or lose their unemployment benefits vs. People who are unemployed should have the right to refuse a job they do not want."
1 'Unemployed should take any job' ... 10 'Unemployed have a right to refuse a job'

* Civism

justify-govbenefit

(f114) "Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between, using this card. (Read out statements. Code one answer for each statement). Justifiable: Claiming government benefits to which you are not entitled."
1 'Never justifiable' … 10 'Always justifiable'

justify-nofare

(f115) Justifiable: Avoiding a fare on public transport.
1 'Never justifiable' … 10 'Always justifiable'

justify-taxcheat

(f116) Justifiable: Cheating on taxes if you have a chance.
1 'Never justifiable' … 10 'Always justifiable'

justify-bribe

(f117) Justifiable: Someone accepting a bribe in the course of their duties.
1 'Never justifiable' … 10 'Always justifiable'

*Obedience

child-obedience
(a042) child quality: obedience

instructions-follow
(c061) “People have different ideas about following instructions at work. Some say that one should follow one’s superior’s instructions even when one does not fully agree with them. Others say that one should follow one’s superior’s instructions only when one is convinced that they are right. With which of these two opinions do you agree?”
1 ’Follow instructions’ 2 ’Must be convinced first’ 3 ’Depends’

instructions-convince
(c061) “People have different ideas about following instructions at work. Some say that one should follow one’s superior’s instructions even when one does not fully agree with them. Others say that one should follow one’s superior’s instructions only when one is convinced that they are right. With which of these two opinions do you agree?”
1 ’Follow instructions’ 2 ’Must be convinced first’ 3 ’Depends’

respect-authority-good
(e018) “I’m going to read out a list of various changes in our way of life that might take place in the near future. Please tell me for each one, if it were to happen, whether you think it would be a good thing, a bad thing, or don’t you mind? Greater respect for authority.”
1 ’Good thing’ 2 ’Don’t mind’ 3 ’Bad thing’

respect-authority-bad
(e018) “I’m going to read out a list of various changes in our way of life that might take place in the near future. Please tell me for each one, if it were to happen, whether you think it would be a good thing, a bad thing, or don’t you mind? Greater respect for authority.”
1 ’Good thing’ 2 ’Don’t mind’ 3 ’Bad thing’

*Honesty

justify-lying
(f127) “Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between, using this card. (Read out statements. Code one answer for each statement). Justifiable: Lying in your own interest.”
1 ’Never justifiable’ … 10 ’Always justifiable’

*Tolerance

child-tolerance
(a035) child quality: tolerance

*Altruism

child-unselfish
(a041) child quality: unselfishness

*Saving

child-thrift
(a038) child quality: thrift saving money and things

Zusammenfassung in Deutsch (Summary in German)

Die vorliegende Dissertationsschrift umfasst drei Aufsätze. In der Reihenfolge ihrer Anordnung tragen diese die Titel „Markets wanted: the overshooting of competition beliefs in transition countries", „Preferences for Redistribution around the World" und „Income Inequality and Symbolic Values: an exploratory analysis". Allen Beiträgen liegt die Annahme zugrunde, das ökonomische Aktivität innerhalb sozialer Strukturen stattfindet und von diesen beeinflusst wird.

Der erste Aufsatz, „Markets wanted: the overshooting of competition beliefs in transition countries", untersucht und erklärt die Entwicklung der Einstellung zu Wettbewerb in Transitionsländern. Es wird dokumentiert, dass in den Ländern des ehemaligen Ostblocks, deren wirtschaftlichen Aktivitäten über einen zentralen Plan koordiniert wurden, eine weitaus bessere Meinung von Wettbewerb herrschte, als dies in den Ländern mit marktwirtschaftlicher Organisation der Fall war. Dabei wird davon ausgegangen, dass Wettbewerb zentrales Element des Marktes ist und die Einstellung zu Wettbewerb also die Einstellung zu Märkten allgemein wiedergibt. Weiter wird gezeigt, dass sich die Einstellung in den Transitionsländern über die Zeit derjenigen in den Marktwirtschaften annähert. Diese Dynamik kann durch ein einfaches Signal-Model erklärt werden. Demnach wird das Meinungsbild der Bevölkerung zu Wettbewerb in Transitionsländern durch die Medien gebildet. Dabei sind sich die Akteure bewusst, dass die durch die Medien verbreitete Expertenmeinung verzerrt sein kann. Nach der Einführung von Märkten macht die Bevölkerung eigene Erfahrungen und revidiert Ihr Meinungsbild. Aus den empirischen und theoretischen Ergebnissen wird die Möglichkeit abgeleitet, dass die Marktreformen in den ehemals sozialistischen Staaten, aufgrund von überzogenen Erwartungen an die Wirkung von Märkten, umfassender waren als sie bei realistischen Erwartungen ausgefallen wären.

Der zweite Beitrag, „Preferences for Redistribution around the World", analysiert die Determinanten von individuellen Präferenzen für Umverteilung. Welche Faktoren, neben dem pekuniären Eigeninteresse, bestimmen den Wunsch nach mehr oder weniger Ungleichheit und mehr oder weniger Umverteilung in der Gesellschaft. Dabei werden zunächst die Länder, welche Mitglied der OECD sind untersucht und in einem zweiten Schritt die Analyse auf 66 weitere Staaten ausgeweitet. Es ergibt sich, dass neben Einkommen, Bildung und Geschlecht auch sozialer Status und soziale Identität, das Gefühl von Autonomie sowie vermutete Gründe für Armut einen maßgeblichen Einfluss auf Präferenzen für Umverteilung haben. In Länder, die nicht Mitglied der OECD sind, sind die Einflussfaktoren zum Teil andere. Der vermutete

Grund für Armut spielt hier keine Rolle. Auch die Rolle des Geschlechts ist weniger ausgeprägt.

Nachdem die Bestimmungsgründe der individuellen Einstellung zu Ungleichheit und Umverteilung analysiert wurden, wird im dritten Aufsatz, „Income Inequality and Symbolic Values: an exploratory analysis", die Wirkung von Einkommensungleichheit, gemessen anhand des Gini-Koeffizienten der Brutto- und Nettoeinkommen, auf symbolische Werte untersucht. Das Konzept der symbolischen Werte ist der Theorie symbolischer Werte von Corneo und Jeanne entlehnt. Symbolische Werte schaffen nicht-pekuniäre Anreize in ökonomisch relevanten Entscheidungssituationen und werden den Individuen durch Sozialisation vermittelt. In dem Aufsatz wird untersucht, wie und ob Einkommensungleichheit einen systematischen Einfluss auf die Ausprägung der symbolischen Werte hat. Dabei werden folgende Werte untersucht: Arbeitsethos, Zivilität, Gehorsamkeit, Ehrlichkeit, Sparsamkeit, Toleranz und Altruismus. Es ergibt sich, dass Arbeitsethos und Gehorsamkeit im Schnitt mit der Ungleichheit der Einkommen zunimmt. Eine ungleichere Verteilung der Markteinkommen senkt hingegen die Ehrlichkeit in einer Gesellschaft. Weitere Einflüsse lassen sich nicht feststellen.

Die drei Aufsätze untermauern die empirische Relevanz theoretischer Konzepte und zeigen, dass kulturelle Aspekte einen Beitrag zum Verständnis ökonomischer Phänomene liefern können.