# Inequality Attitudes in Central European Countries: Changes in Normative Attitudes during Two Decades of Adaptation

By

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## Abstract

Paper presents an overview and an analysis of changes in differences in attitudes towards economic inequality in the Visegrad countries and Slovenia. Data come from rounds 1992, 1999, and 2009 of International Social Survey Programme surveys on social inequality. Posed questions are relevant in debates on theories of social justice and attitude change in transitional societies. The dependent variable is the level of income inequality measured as a ratio of incomes of high-status occupations and low-status occupations. The first part of the analysis looks into differences in legitimate levels of income inequality between countries and across time. In the second part, determinants of attitudes towards inequality are tested through two methods. Multivariate OLS regressions are used to estimate effects at the individual level, and multi-level random effects model is used to estimate the influence of the national level characteristics. The multi-level model uses a constructed pseudo-panel dataset to accommodate for the lack of true panel data. The results show that, that differences between countries have grown and that studied countries followed different trajectories in regards to attitudes towards inequality. Formerly egalitarian nations have adapted their attitudes towards income disparities and started to accept higher levels of inequality as legitimate. Perceived and objective rate of inequality have the strongest effects out of the tested variables. Other factors, such as material self-interest and ideology, also report to have a measurable influence, though do not explain as much variance as the inequality ones.

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# Introduction

Economic inequality is a phenomenon which has kept human societies company throughout the history. Though a total equality may sound like a utopia, it is not hard to imagine that the concept of at least relative equality is a very appealing one. However, a concept of similar appeal is the one of effort and reward, which is similarly intertwined with history of human thought. It seems that there is a need of finding the right balance between rewarding efforts and keeping inequality on an acceptable level. Most of the literature recognizes two main justice ideologies determining the opposite positions in terms of legitimizing the amount of just inequality in a society – individualism and egalitarianism (Castillo 2007). In short, people who believe that being successful is a matter individual effort (individualists) are more likely to tolerate higher levels of inequality - i.e. rich deserve their money and poor are lazy. On the other hand, people who believe that success is more of a matter of influences outside the control of an individual are more likely to be in favor of smaller differences (egalitarianists).

Consequences of inequality are linked with various important subjects such as its impact on social capital and social cohesion (Putnam 2000), economic growth (Alesina 1997; Rodrik 1998), and political stability (Posner 1997; Glyn and Miliband 1994). However, while differences in distribution of wealth and resources may cause social unrest (Alesina and Perotti 1996; Justino 2004), a high rate of inequality does not necessarily mean that the given population will get overly upset or even aggressive towards the government. Indeed, there are differences in how societies actually evaluate what is a legitimate and acceptable level of inequality (Atkinson 1988; Kreidl 2000; Verwiebe and Wegener 2000; Lambert, Millimet, and Slottje 2003; Osberg and Smeeding 2006). As Loveless and Whitefield (2011) conclude, the actual problems only arise when inequality is perceived as unfair and disproportionate by

the citizens, and when people blame the market and democratic institutions as responsible for the situation. Furthermore, as Stimson (1995) and Wleizen (2004) suggest, politicians are responsive to public opinion to further their chances on re-election. Therefore, whatever the mechanisms which actually translate the wishes of the majority into legislation are, theoretical justification for looking into attitudes towards inequality is very strong.<sup>1</sup>

Perhaps the most grandiose effort to reduce economic inequality was lead by the Soviet Union in the 20<sup>th</sup> century. Before its spectacular collapse, the Soviet Union has disseminated and enforced ideas of a classless society into many countries throughout the world. The true test of the appeal of ideas of egalitarianism has started only once the ideology was stopped being enforced by the political officers and indeed, people from many former communist countries have rejected the regime that claimed to be based on egalitarian values. The decades following the year 1989 have seen the former communist countries experience large scale transformation, consequences of which have lead to changes in structure of economic inequality. As much as people have rejected the previous regime, only time could answer whether they would accept the inequality that came as a part of the free market.

However, although inequality is a discussed topic among academics (Rawls 1971; Sen 1973; Bénabou and Tirole 2006; Clapp and Wilkinson 2010), only a limited research has been done regarding the former communist societies. The works focusing on this area are usually focused on comparison with western societies (Kelley and Evans 1993; Kreidl 2000; Gijsberts 2002; Redmond, Schnepf, and Suhrcke 2002; Kelley and Zagorski 2004; Hadler 2005) or are primarily concerned with differences in related areas such as social welfare models (Cerami 2005; Inglot 2008) or poverty (Kainu and Niemelä 2010). Results of the former group of studies tend to focus on differences between the two obvious categories while putting aside

<sup>&</sup>lt;sup>1</sup> As the system can only be perceived as legitimate if the "is" equals the "ought to be" (Kreidl 2000).

differences occurring within the groupings. The latter group provides analyses on domains closely connected with inequality but do not consider it their main focus. With Stamm, Lamprecht, and Nef (2002) showing that the 'over time' changes can be significant even between countries with similar backgrounds, it would be interesting to see whether an over-time analysis will find a divergence from the implied homogeneity in attitudes among the category of post communist states. The central topic of the paper revolves around the following idea:

Central and Eastern European countries are used as a group in analyses on attitudes towards inequality<sup>2</sup> (Delhey 1999; Corneo and Grüner 2001; Suhrcke 2001; Gijsberts 2002; Kelley and Zagorski 2004). While is logical for historical reasons, is the expectation of ideological homogeneity among Central and Eastern European countries still justified?

The paper aims to add to the literature on social justice and public attitudes within post-communist societies in two areas where only limited research has been done so far. Firstly, while the spatial dimension has been given generous attention, the dimension of time was somewhat overlooked, perhaps due to a lack of suitable research methods or comparable data. Secondly, comparisons of countries with different backgrounds brought a solid amount of results, but a closer look into attitudes towards inequality among people from Central and Eastern Europe is missing, especially if we consider developments after the 2004 round of European Union's enlargement.

Using data from ISSP's module on Social Inequality which covers years across the whole period of their transition, I analyze changes in differences attitudes between people in selected post-communist countries. As the data for the 2009 round became available only in

<sup>&</sup>lt;sup>2</sup> To avoid repetitiveness, I will use legitimate inequality, suggested inequality, just inequality and inequality tolerance as synonyms; the same will apply to actually perceived inequality, actual inequality, and perceived inequality (objective rate of inequality has its own term); and to country-level, national-level, and macro-level.

2011, this is an opportunity to add to the previous research in a very straightforward way. I use quantitative approach to gain a clear and comparable picture. Given the data availability, I focus specifically on the Visegrad Group<sup>3</sup> and Slovenia, look for differences and similarities, and attempt to identify factors which shape normative attitudes of people from this part of Europe. Instead of using events of 1989 as a point from which countries of Central and Eastern Europe could be safely compared with western states, I decided to look at different patterns in formation of attitudes within the eastern group.

The thesis examines changes in perceptions attitudes towards economic inequality in the selected post-communist societies over the past 20 years, and the main factors affecting public attitudes towards inequality at the various stages of ongoing transformation. The study presents a mixed analysis in which individual level predictors are tested in a multivariate regression model, and are complemented with a multilevel random effects model used for observation of country-level effects using a pseudo-panel model dataset. The main dependent variable is the level of accepted inequality and was constructed similarly to Jasso's (1978) index of justice.

There are two parts of the analysis. The first part is concerned with changes in how citizens of these countries perceived actual and legitimate levels of income inequality. The aim of the part is to map out the trends and identify possible differences on a country level. The second part is focused on identification and evaluation of factors affecting personal attitudes towards differences in income distribution in different countries.

The covered research questions will be:

**Q1:** Are there (growing) differences in inequality tolerance between people in the studied countries?

<sup>&</sup>lt;sup>3</sup> Visegrad Group is a regional cooperation group comprising of Czech Republic, Hungary, Poland and Slovakia

**Q2:** If yes, to what extent can these differences be explained by national-level characteristics and compositional effects of individual-level factors?

As the thesis is limited to analysis of quantitative data from the previously mentioned ISSP survey, addition of qualitative data describing the circumstances of period this research is concerned with would add depth and explanatory power. Also, combining datasets from multiple years available have its limitations, and it was necessary to make several compromises in order to be able to use the data properly. These are discussed further in the paper.

# 1. Theoretical Framework and Literature Review

## 1.1 Central and Eastern Europe since 1989 – A Short Overview and Context

During the era of communism, both poverty and affluence were portrayed as undesirable. Poverty in a classless society would undermine the basis of official ideology and thus was largely ignored in the discourse (Kreidl 2000). Nevertheless, the meritocratic principle of just reward for more effort was present and desired even in communist societies, and this has manifested as soon as the change of the system allowed for income inequality to grow (Gijsberts 2002; Kelley and Zagorski 2004).

However, people were largely unprepared for the consequences of the collapse of the Eastern Bloc, and thus of the market that has been connected to and directed from Moscow. Transitioning economies were left on a verge of decimation as not only was the amount of the "pure socialist output" revealed, but also a number of other obstacles arose to hamper the transition (Swaan and Boros-Kazai 1996; Balcerowicz 1995). Adaptation to the new system has mixed up the old and brought along numerous new differences and inequalities (Simai 2006). Vanhuysse (2006) even presents an argument that transitional governments in post-communist Eastern Europe manipulated people into positions where they would become reliant on public welfare, only to remove this support later on, and thus disrupt the persisting solidarity. Nevertheless, while disillusionment could lead to a backlash against the new system, this did not happen. To the contrary, it seems that people were prepared to suffer through the initial hardships (Balcerowicz 1995) and to cope with the new situation.<sup>4</sup> In fact, only fifteen years into transition have many of these states joined the European Union and

<sup>&</sup>lt;sup>4</sup> Kornai (2000) puts forward an interesting proposition saying that if people are not satisfied with how capitalist society functions, they are indeed welcomed to express this in a revolutionary rejection of capitalism. Of course, an obvious implication is that there has not been an anti-capitalist revolution, and so that people's preferences should be in line with those which capitalism is based on.

adapted their legislations in order to meet the entry requirements, the so called Copenhagen criteria. In the context of the Visegrad countries and Slovenia in time of transition, then, attitudes towards inequality need to be considered in light of a shift towards free market economy and introduction of a democratic system.

There are at least two immediate implications following the transitional changes. Firstly, introduction of market economy has brought new opportunities, risks, and uncertainties that were virtually non-existent in the old regime (Swaan and Boros-Kazai 1996). Secondly, a shift to a market economy was followed by a rather steep increase in income inequality (see Table 1). All of this could further accentuate the differences between possible positive and negative outcomes of personal accommodation to the new system. Implications of change towards the democratic system were of similar importance. Firstly, it was the newly gained ability to actually influence outcomes of elections and to some extent steer the institutional setting of the country. Secondly, the official state ideology has gone with the wind and people were granted rights to think and express their opinions. In theory, then, having an opinion on social issues became more relevant and useful than in the former regime.

Additionally, the starting positions, chosen solutions, and reactions to unfolding changes differed from country to country and from person to person. In different countries, structural, institutional, and cultural peculiarities could have affected people's positions towards inequality in corresponding manner.

#### The first tested hypothesis will thus be:

**H1:** Acceptance of higher levels of inequality will, on average, increase over time, but the initially unidirectional change will diversify later on. - e.g. the standard deviation of mean levels of legitimate inequality in different countries will grow over time.

#### 1.2 Theoretical Determinants of Attitudes Towards Inequality

Stamm, Lamprecht, and Nef's (2002) general explanation of determinants of attitudes towards inequality starts with background conditions that determine the actual structure of inequality in the country, shape of institutions, and provide cultural and ideological reference points for the individual – e.g. through processes of learning through observation and socialization (Kiecolt 1988). General background and the actual structure of inequality also determine the worldviews of people belonging into certain classes. Additionally, people are influenced by their own goals and position in the structure, which in turn affects their perception of the general context. Finally, individuals can be affected by ideologies that are not a part of the dominant normative system (Kluegel and Smith 1986; Kreidl 2000).

The mentioned effects are not mutually exclusive and in most cases affect each other theoretically and empirically. An easy to follow classification of schools of thought explaining differences in personal normative attitudes towards economic inequality is presented by Hadler (2005). As his research covers most of the mentioned concepts, I will loosely base my overview of the factors affecting personal normative attitudes towards inequality on his typology and complement it with additional concepts I control for in the analysis.

### 1.2.1 Dimension of Socio-Economic Position and Material Self-Interest

| Socio economic position and material self-interest |  |  |
|--|--|--|
| H2.a   | Subjective perception of own position in the structure will have a positive relationship |  |
|  | with the accepted level of inequality  |  |
| H2.b   | People in higher social position are more likely to accept higher levels of inequality   |  |
| H2.c   | People will adjust their acceptance of inequality on basis of expectation of future      |  |
|  | developments   |  |
| H2.d   | Overall level of wealth is expected to have a non-linear relationship with inequality    |  |
|  | tolerance  |  |

Self-interest hypothesis is based on two main assumptions about individual behavior of the so-called homo economicus. Firstly, individuals are utility-maximizing agents who have an objective of minimizing risk (loss of employment, health, etc.), and secondly, individual's objective socio-economic position determines his normative views regarding social issues (Meltzer and Richards 1981; Milanovic 2000; Blekesaune 2007; Dallinger 2010). Such behavior is usually described by Meltzer and Richard's model of median voter, which could be summed up as: if the income of median voter moves up, his preference for equality lowers, and vice versa. The concept can be easily extended to consider an overall social position instead of only income. Empirical research has shown that people who reported themselves as having lower social position and income have also tended to express more egalitarian views than those with higher incomes and higher self-reported social position (Kluegel and Smith 1986; Haller, Mach, and Zwicky 1995; Mau 1997; Svallfors 1997; Gijsberts 2002).

To accommodate for factor of ongoing transformation, and for the inevitable uncertainty that this brought into considerations of one's position, I decided to include selfperception of personal economic position in addition to more objective measures (Kreidl 2000). We can expect people who see their position as at the top of the income distribution to be more tolerant of income inequality. (**H2.a**)

Objective implications of personal position and self-interest on formation of attitudes in countries undergoing transition are more complicated to assess. In times of change, nobody knew who were going to be the winners and the losers. However, we can perhaps safely assume that those in positions that are traditionally more likely to end up as the "winners" would become more tolerant of higher inequality. Therefore, we can expect people who were in positions of objectively higher social status (having a high-status job<sup>5</sup> or better pay) to accept more inequality. Managers and supervisors usually earn more than ordinary workers, and so could support higher differences in salaries. Additionally, an increase in opportunities led many people to start their own businesses. For such people, motivation for acceptance of higher rewards for their efforts could also be affected by increase in risk of becoming unemployed and falling into debt in case of being unsuccessful. (**H2.b**)

At the same time, depending on their expectations of future risks or fortunes, and thus acting in accordance to the so called "tunnel effect", people may consider inequality to be acceptable even if they are currently earners of below the mean wages (Hirschman and Rotschild 1973; Bénabou and Ok 2001; Suhrcke 2001; Rehm 2009). For instance, those with better education tend to have better paid jobs and are more flexible when it comes to looking for a new one (Sockice 2001; Cusack, Iversen and Rehm 2006; Ardanaz 2009). We can thus expect students and those with better education to have a more positive outlook on inequality on basis of the expected future mobility. On the other hand, people who are likely to be relying on the government support in near future (e.g. unemployed, retired) can be expected to prefer lower amounts of inequality. Such considerations may be further stimulated by presence of society-wide risks. For instance, high unemployment can be seen as a potential threat and should generate a demand for equality. Conversely, an increase in perceived future returns (for instance because of the economy doing well, proxy for which can be a high

<sup>&</sup>lt;sup>5</sup> There are two reasonable explanations for changes in effects of occupational status (in this analysis measured on ISEI scale) on attitudes towards inequality. First, the self-interest position can explain this by a vertical change in status of certain occupations, which would then manifest in change in linearity of the positions of the effects which the status score value attributed to certain occupation has on the dependent variable - e.g. the real socioeconomic status of farm workers becoming much worse would mean that their original normative position has shifted after their socioeconomic position has changed. The alternative explanation would be that status of a job plays smaller role in attitude formation - explanations for which could be many, but those coming to mind are 1. explanatory power of related variables (education and income) has risen due to better adaptation to market economy (for instance because of better (perception of possibilities for) inter-employment mobility making the notion of actual occupation less relevant for personal consideration of one's position), and 2, that simply the effect of occupation status has become weaker in predicting personal attitudes towards inequality due to other dimensions becoming more potent (relevant).

growth of domestic product) should correspond with increase in acceptance of income inequality even among the poor (Jæger 2006b; Dallinger 2010; Schmidt 2012). (**H2.c**)

Linearity of the relationship between wealth and inequality tolerance can be countervailed through the effect of saturation of needs, which leads even the lower strata to not demand additional equality when the overall level of wealth in a country increases to a certain level (Beck 1986, Schmidt 2012). On the other hand, if equality is considered a normal good, then an increase in personal wealth should lead to an increase in demand for equality after some point (Lambert, Millimet, and Slottje 2003).<sup>6</sup> (**H2.d**)

#### **1.2.2 Dimension of Ideological Guiding Principles**

| Ideological guiding principles |  |  |
|--------------------------------|--|--|
| H3.a                           | Egalitarian-etatist attitudes have negative relationship with tolerance of inequality. |  |
| H3.b                           | Religiosity has positive relationship with tolerance for inequality.                   |  |
| H3.c                           | Non-merit based views on requirements for success have negative relationship with      |  |
|                                | inequality tolerance   |  |
|                                |  |  |

In past few decades, a number of studies suggested that attitudes towards inequality are shaped primarily by ideology as opposed to short-term material interests (Abercrombie, Hill, and Turner 1980; Haller 1995; Mau 1997; Stamm, Lamprecht, and Nef. 2002; Hadler 2005; van Oorschot 2006; García-Valiñas et al. 2007). Castillo (2007) identifies effects of dominant ideology, split consciousness, and system justification motivations as responsible for determination of social justice related ideologies - individualism and egalitarianism.<sup>7</sup> These basic positions differ in attribution of individual versus structural factors as determining personal success or misfortune. We expect people who believe that structural factors play the

 $<sup>^{6}</sup>$  Note that the saturation hypothesis and the common good hypothesis can affect different income groups, and thus can have an effect at the same time in the same society. Depending on circumstances, we may see a non-linear element in the effect of income / GDP per capita.

<sup>&</sup>lt;sup>7</sup> There are more divisions of these ideologies, but mostly describing same attitudes in slightly more general or specific way.

decisive role in one's life to be in favor of more egalitarian society (egalitarians), and people who believe in the role of effort to be willing to legitimate merit-based inequality (individualists).

Castillo further explains that dominant ideology is in place to explain and legitimate the structure and relations within the society so as the elites do not have to legitimate their position through force (Rytina, Form, and Pease 1970), and has also a large role in shaping the justice beliefs of the society (Wegener and Liebig 1995). At the individual level the dominant ideology plays a big part but its effects are "challenged" by perceived discrepancies and by ideologies that maintain importance of different values (Kluegel and Smith 1986; Verwiebe and Wegener 2000). This proposition is consistent with the notion of "split consciousness" (Sennett and Cobb 1973), which allows for the effects of dominant ideology and "challenging beliefs" to compete within the society. Finally, psychological processes behind effect of system justification are similar to the effect of cognitive dissonance in that people try to explain the inequality in the system as not being imposed on them. These mechanisms of rationalizing come into play mostly among the worst-off who have the most to justify and explain, as the general acceptance of the status quo and presence of the existing structure and institutions offer strong incentives for justification of the existing social order (Kluegel and Smith 1986; Jost and Major 2001; Jost 2011; Bénabou and Tirole 2006).

During the communist era, the dominant ideology was certainly that of egalitarianism, and the challenging beliefs were those of merit-based inequality. However, communist societies were not as egalitarian as the official ideology claimed and this aspect could have also helped the challenging beliefs to become more strong and widespread (Zaslavsky 1979) and the official ideology of egalitarianism has lost its prominence to that of merit-based inequality during the transition (Kreidl 2000). The struggle between ideologies continued during the transition, as while a number of studies found evidence for further presence of egalitarian ideology in former communist countries (Kelley and Evans 1993, Inglehart and Baker 2000, Alesina and Fuchs-Schündeln 2007)<sup>8</sup>, findings of Gijsberts (2002) and Kelley & Zagorski (2004) show a large shift towards more meritocratic values.

In terms of dominant ideology and challenging beliefs, although the elites during transition did not have interest in people explaining their worsening economic fortunes through structure-based explanations, the social experience of post-communist societies (rise in unemployment, decrease in real incomes, etc.) may have directed a large part of population to look for structural causes and governmental solutions of inequality (Kreidl 2000). In other words, those who consider the level of income differences to be a responsibility of the state, and a matter of structural and societal effects, should be less tolerant towards inequality. According to results from Stamm, Lamprecht, and Nef (2002) and Hadler (2005), such relationship should also work at the aggregate level, and people from societies where egalitarian-etatist ethos is dominant should be less tolerant of inequality. (H3.a)

Religiosity also features in debates on inequality tolerance and demand for redistribution. While Elgin et al. (2013) argue that it is the alternative way of redistribution, namely donations to the poor, which reduces demand for formal economic equality, Garcia-Valiñas et al. (2007) and Solt, Habel, and Grant (2011) connect religiosity and lower demand for equality with 'spiritual rewards' of having a religion. As religion was frowned upon by the communist regime (Steinberg and Wanner 2008), and considering that Scheve and Stasavage

<sup>&</sup>lt;sup>8</sup> Indeed, path-dependency and persisting effects of ideology in relation to welfare regimes, attitudes towards poverty, and inequality have been discussed in a number of studies (Dudwick, Gomart, and Marc 2003, Alesina and Fuchs-Schündeln 2007, Inglot 2008, Örkény and Székelyi 2009, Kainu and Niemelä 2010) regarding the CEE. Dudwick, Gomart, and Marc (2003) even report that people in these countries were very reluctant to admit that they were poor and would claim to earn 'just enough', or retorting that no one is well off – his explanation was the persisting influence of an ideology which disapproved of poverty – potentially a remnant of ideology that, in most cases, only acknowledged poverty as being a result of almost pathological unwillingness to work.

(2006) confirm the suggested higher tolerance for inequality among the religious on both the individual and national levels, we can see whether the resurgence in religiosity has led to changes in attitudes towards inequality. **(H3.b)** 

Furthermore, convictions that there is a need for violation of the contemporary meritocratic ideology in order to be successful might then lead to a demand for reduction of the perceived rate of inequality (Piketty 1995; Fong 2001; Kuhn 2009). (H3.c)

#### 1.2.3 Dimension of Perception and Reflection of Status Quo in Society

| Reflection and perception of society |  |  |
|--------------------------------------|--|--|
| H4.a                                 | Normative attitudes are dependent on the objective (and perceived) level of inequality |  |
|                                      | in the country   |  |
| H4.b                                 | People in countries with high protection level of social spending have negative        |  |
|                                      | attitude towards inequality  |  |
| H4.c                                 | Sensitivity to perceived injustice and conflicts has negative relationship with        |  |
|                                      | inequality tolerance   |  |

Reflection thesis is based on a notion that people adjust their opinions to reflect what they perceive to be the case (Merton 1968; Homans 1974; Wegener 1987; Evans, Kelley, and Kolosi 1992; Mau 1997; and Gijsberts 2002).<sup>9</sup> This is further strengthened by tendency to consider oneself as suitable reference point which stands relatively in the middle of any hierarchy (Van Praag, Spit, and van de Stadt 1982; Evans, Kelley, and Kolosi 1992), and by processes of cognitive dissonance which drive people to subconsciously alter their preferences in order to come to terms with the actual situation (Kluegel and Smith 1986; Jost and Major 2001; Jost 2011; Kelley and Zagorski 2004). Bénabou and Tirole (2006) even claim that people will believe something to be true just to convince themselves that they live in a just

<sup>&</sup>lt;sup>9</sup> This is not to say that people are content with their own position in relation to the perceived differences, but rather that they perceive these as something that is actually true. While a poor factory worker might have his own opinion on whether salaries of ministers (as he perceives them) are just, he will, nevertheless, use this (biased) estimate as a basis for his attitude towards the perceived level of ministerial earnings.

world.<sup>10</sup> Kuhn (2009) and Lambert, Millimet, and Slottje (2003) provide overviews of how perceptions of inequality can differ from its actual values, while (Loveless and Whitefield 2011) support the notion that the perceived inequality is actually more important for attitudes than the actual values.

In the context of former communist societies this would mean that changes during transition should be met with acceptance of the new situation as people perceived it. The fact that increase in inequality was happening together with other major changes might have even further stimulated willingness of people to accept such trends. In other words, the larger the growth of inequality, the higher the likelihood that people will perceive higher levels of inequality as just and 'normal'.<sup>11</sup> Based on the hypothesis of 'natural rate' of subjective inequality (Atkinson 1988; Lambert, Millimet, and Slottje 2003) and the hypothesis that people adjust their attitudes to the perceived (as well as objective) reality (Homans 1974; Mau 1997), both the level of objective income inequality (Gini coefficient) and the level of perceived inequality should have a positive effect on inequality tolerance (H4.a). <sup>12</sup> Such proposition is consistent with previous findings regarding the proposed effects of cognitive dissonance in the era of transition from communism (Gijsberts 2002, Kelley and Zagorski 2004).

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<sup>&</sup>lt;sup>10</sup> Actually described relationship was a bit more complicated. Those in worse social positions and with low support from the state can turn to the "American dream" as it is, in addition to being a dominant ideology in the United States, a beacon of hope in what would otherwise be an unjust world. However, as income rewards and personal success are actually tied to effort and merit (to some extent), the belief in the merit based justice can be actually helpful even if it is misleading. On the other hand, the authors also agree that the net benefits of such beliefs to the poor are rather ambiguous. While this example seems to describe ideology more than perception, the link of interest is the belief that the perceived situation is just, and basically a background setting in which one has to do his best in order to achieve his goals. With lack of experience with market economy, people in CEE countries might have actually been even more susceptible to accept the early developments after the revolutions, as the new system was supposed to be merit-based (Kreidl 200).

<sup>&</sup>lt;sup>11</sup> Kelley and Zagorski (2004) add that it should be primarily people who trust in the market (though may not be very experienced with its actual workings) are the most likely to accept its 'fleas' in form of increase in inequality.

 $<sup>^{12}</sup>$  Hadler (2005) considers perception of inequality as dependent on position in the structure. While acknowledging that this is true, it is also important to consider that perception can be affected by many other factors (propensity of individual to seek out information, extent to which national media inform about earnings, hearsay ...) and thus I believe that it is justified to consider perception of the actual rate of inequality a relevant standalone effect.

Similarly, the system of redistribution present in the country should also have an influence on normative beliefs through the effect of socialization (Kiecolt 1988). The existing level of (institutionalized) solidarity present in the society should affect the social norms (Mau 2004; Larsen 2006) and we can expect that higher redistribution would lead to more egalitarian attitudes (Jæger 2006a; Dallinger 2010). (H4.b) However, Jæger (2011) and Schmidt (2012) reported that increase in social spending can have the opposite effect. I do not include types of welfare-state arrangement as prior research does not provide a clear categorization for the studied group of countries.<sup>13</sup>

Finally, if there is too much of inequality-driven injustice in the society, we can expect people to react by lowering their tolerance of inequality. For example, one can find inequality problematic for reasons such as increase in incidence of crime and conflicts, and attribute this to increased income differences (Delhey 1999; Tóth and Keller 2011). (**H4.c**)

#### **1.2.4 Demographic Variables**

Age is reported to have measurable effects on inequality preferences (Gijsberts 2002; Jasso 1978; Kluegel, Mason, and Wegener 1995). Kelley and Evans (1993) propose two explanations for why this could be the case. Firstly, people experiencing life in different eras can have different ideas about what it means to be poor or rich. Secondly, people can observe not only their own careers but also those of their friends, which should follow the expected

<sup>&</sup>lt;sup>13</sup> Not only would an analysis deeply examining the institutional setups of the studied countries be too ambitious for this paper, but prior attempts to categorize Visegrad countries into one of the traditional groupings – as suggested by Esping-Andersen (1990) – was unsuccessful, and provided explanations ranging from that a category of mixed (or hybrid) post-communist welfare regime fits the best as a description for models of redistribution in these countries (Fenger 2007, Cerami and Stubbs 2011), to one that there were three distinct ways in which the welfare regimes have developed among these: Slovakia has gone down the neo-liberal road, Czech Republic and Slovenia chose the opposite direction with stronger welfare state in place, while regimes in Hungary and Poland have presented mixture of neo-liberal and neo-populist patterns (Lendvai 2009). Of course, Buchholz et al. (2008) concluded that Czech Republic, Hungary, and Poland have all mostly similar welfare related institutions (while, unfortunately, not including Slovakia and Slovenia in the analysis). For a deeper qualitative analysis of differences in welfare models among Central and Eastern European countries see Cerami (2005) and Inglot (2008).

patterns in regards to connection between age, actual earnings and a position at the workplace. Age could then correlate with personal norms even beyond considerations of own material status. Furthermore, in the conditions of transition, we can expect a cohort effect to be present, meaning that younger people who did not grow up during communism should be more tolerant of inequality.

In addition, marital status and sex of the respondent are also controlled for. The general expectation is that men accept more inequality than women (Svallfors 1997). In the analysis, I include education in this dimension, mainly to track the change in its effect when other dimensions are included in the analysis.

## 2. Methodology and Data

#### 2.1 Used Methods

#### 2.1.1 Multivariate Regression Model for Modeling of Individual-Level Effects

To test for effects of individual level characteristics I employ multivariate OLS regression model. In this setup, I only analyze one country at a time, with data from different years pooled together, and control for unobserved heterogeneity caused by time with dummy variables. This method allows comparing results with previous research and enables for usage of the dependent variable of choice (attitude towards inequality measured on a continuous scale) and also allows for an easy comparison and overview of effects of independent variables.

With individual level data, we can learn about national level characteristics via structure of answers in respective countries (and years) through compositional effects (Jasso 1994; Gijsberts 2002), which take into consideration differences in the composition of the sample at the individual level.<sup>14</sup> Controlling for (groups of) individual variables can explain effects on national level – e.g. less people considering state being responsible for reduction of income differences would mean less egalitarian-etatist ideology, etc. Such differences are then observable through country effects (intercepts) moving closer together. Similar methodology has been employed to study attitudes towards inequality in previous research (e.g. Gijsberts 2002; Castillo 2007) and has brought a solid amount of results. In short, by employing multiple national level analyses we should be able observe differences in effects of individual-level variables between countries. In line with the residual variation approach (Wegener and

<sup>&</sup>lt;sup>14</sup> Composition effect is an aggregate of partial effects observed at individual level. The resulting value of the composition effect can be described as a mean of partial effects from the individual level.

Liebig 2000), the remaining variance between countries (and years) should account mainly for uncontrolled national-level differences (Castillo 2007).

The full regression equation for each country is:

Legitimate inequality<sub>ict</sub>: constant +  $\beta_1 time_{ict}$  +  $\beta_2 age_{ict}$  +  $\beta_3 gender_{ict}$  +  $\beta_4 marital status_{ict}$  +  $\beta_5 education_{ict}$  +  $\beta_6 family income_{ict}$  +  $\beta_7 subjective self positioning_{ict}$  +  $\beta_8 self employed_{ict}$  +  $\beta_9 supervisory position_{ict}$  +  $\beta_{10} government service_{ict}$  +  $\beta_{11} unemployed_{ict}$  +  $\beta_{12} retired_{ict}$  +  $\beta_{13} student_{ict}$  +  $\beta_{14} union membership_{ict}$  +  $\beta_{15} progressive taxes attitude_{ict}$  +  $\beta_{16} role of the government attitude_{ict}$  +  $\beta_{17} Religiosity_{ict}$  +  $\beta_{18} family background-dependent success_{ict}$  +  $\beta_{19} connections dependent success_{ict}$  +  $\beta_{20} sensitivity to income differences_{ict}$  +  $\beta_{21} sensitivity to conflicts Middle class vs. Working class_{ict}$  +  $\beta_{22} sensitivity to conflicts Workersc vs. Managementc_{ict}$  +  $\beta_{23} sensitivity to conflicts Rich vs. Poor_{ict}$  +  $\beta_{24} perceived$  level of inequality\_{ict} + error

where indices indicate values for individuals i in countries c in specific time t.

Country level variables are not included in the basic regression model for two reasons. Firstly, due to small number of country-level degrees of freedom it is unlikely that we would get well interpretable results from a simple cross-sectional fixed effects model. Secondly, used method would not allow for control of changes (in time) in effects of national level variables within countries. The selected method for evaluation national and time differences in effects of country-level variables is therefore a random effects multilevel model observing constructed socio-economic groups forming a pseudo-panel dataset, which is explained in detail in the next section.

# 2.1.2 Multi-Level Random Effects Model for Testing Between and Within Group and Country Effects

The available dataset is composed of cross-sectional surveys taken in multiple years on different random samples and therefore not suitable for a proper panel data analysis. An available solution would be to only consider aggregated values of individual country-time combinations, but this avenue would not provide for a great number of degrees of freedom, and would hide the information about the variance below the country level. To make up for these deficiencies, I use multi-level random-effects pseudo-panel model proposed by Schmidt (2012), which itself is an extension of a model proposed by Jæger (2011). Observed units of analysis in the utilized model are constructed socio-economic groups, which form pseudo-panel dataset. One of the advantages of this approach is that it allows for over-time comparisons, thus increasing the number of observations.

The setup for socio-economic groups is based on Jæger's (2011) model accounting for age, education, and socio-economic status. Usage of pseudo-panels with cohorts as groupbased units of observation dates to Deaton (1985). Cohorts were used to ensure exogeneity and that we actually observe the "same people" in different times. Jæger's inclusion of aspects of education and status add elements for diversification of possible explanations, and thus allows for more interpretable results. Furthermore, socio-demographic groups can be considered a relatively stable (over-time) unit of analysis in that that individuals belonging into these groups should face similar challenges and circumstances (Jæger 2011). They are also a unit of analysis which is far enough from the aggregate (national) level and yet far enough from individual level, and therefore fit for panel data techniques.

Construction of groups was operationalized as follows: age (18-35 - students and people at start of their careers, 36-54 - people already active in the labor force, 55-max - people before retirement and already retired), education (primary: 0-9 years of schooling, secondary: 10-12, tertiary: 13+), and occupational determined social class position (inactive, working class, middle class, managerial class) based on the EGP scheme (Erikson and Goldthorpe 1992)<sup>15</sup>. In the end, there are 36 (4x3x3) possible observation points per country

<sup>&</sup>lt;sup>15</sup> I extend the 3 classes EGP version by a category of inactive; mainly to reduce the number of missing values, but also to ensure that this category is not excluded from the analysis, which is, in the end, effects of national-level changes on subnational groups.

(x5) per year (x3), which means 540 possible observations. Due to missing data and not all socio-demographic groups being represented at each country-time point the final dataset has 492 observations nested in 178 socio-demographic groups nested in 5 countries.

Similar operationalization was successfully used in recent studies of Jæger (2011) and Schmidt (2012), though there are assumptions which we need to keep in mind. The pseudopanel itself is composed of socio-economic groups which were created from aggregated values of variables that we need to assume to be exogenous, and means of created groups need to vary over time and between each other (Nijman and Verbeek 1992; Verbeek 2008; Schmidt 2012). Furthermore, we also need to assume that people with certain sociodemographic characteristics should also have similar attitudes towards inequality. This assumption has theoretical and empirical justification in that the previous studies have often linked socio-demographic attributes to attitudes regarding inequality and related phenomena such as redistribution (Svallfors 1997; Iversen and Soskice 2001; Gijsberts 2002; Kelley and Zagroski 2004; Hadler 2005; Dallinger 2010; Toth and Keller 2011).

The model which Schmidt (2012) proposes is a decomposition of Jæger's (2011) fixed effect model for estimating within variance – change over time. Jæger's model uses fixed component to control for unobserved heterogeneity, but the tradeoff is a loss of ability to evaluate the between effects. The basic pseudo-panel model can be written as:

$$DV_{gt} = \alpha + \beta X_{gt} + \gamma Z_g + u_g + e_{gt}$$
(1)

... where  $DV_{gt}$  is a value dependent variable of a group g in a time t.  $X_{gt}$  describes effects of time variant group-level variables (vector which varies both between and within units), and  $Z_g$  effects of time invariant group-level variables (vector varying only between units). A  $u_g$  is a unit (group) specific random effect, which only varies between units and captures

unobserved between-unit variation (in this case between group variation). We control for this effect when using fixed effects to observe only within-unit variation.

To include variation within and between countries, we extended the model to:

$$DV_{gct} = \alpha + \beta X_{gct} + \gamma_1 Z_{1gc} + \gamma_2 Z_{2ct} + u_{1c} + u_{2gc} + e_{gct}$$
(2)

This model includes vector  $X_{gct}$  that vary across groups, countries, and time; vector  $Z_{1gc}$  that varies across groups and countries; vector  $Z_{2ct}$  that varies across countries and time; error term  $u_{1c}$  that captures unobserved heterogeneity at the country level; and error term  $u_{2gc}$ capturing unobserved heterogeneity between groups within countries. To observe over-time within variance, we a apply a fixed effect transformation (subtraction of over-time mean) to the model:

$$(DV_{gct} - \overline{DV}_{gc}) = \alpha + \beta (X_{gct} - \overline{X}_{gc}) + \gamma_1 (Z_{1gc} - \overline{Z}_{1gc}) + \gamma_2 (Z_{2ct} - \overline{Z}_{2c}) + (u_{1c} - \overline{u}_{1c}) + (u_{2gc} - \overline{u}_{2gc}) + (e_{gct} - \overline{e}_{gc})$$

$$(3)$$

... from which we get:

$$(DV_{gct} - \overline{DV}_{gc}) = \alpha + \beta (X_{gct} - \overline{X}_{gc}) + \gamma_2 (Z_{2ct} - \overline{Z}_{2c}) + (e_{gct} - \overline{e}_{gc})$$
(4)

because time invariant components cancel each other in the equation as

$$Z_{1gc} = \overline{Z}_{1gc}, u_{1c} = \overline{u}_{1c}, \text{ and } u_{2gc} = \overline{u}_{2gc}.$$

However, as Jæger's model only covers within (over-time) variance, it is not possible to use it to for estimation of differences between countries. I apply Schmidt's extension of the model by inclusion of a vector and coefficients for between effects:

$$DV_{gt} = \alpha + \beta^{W} (X_{gt} - \overline{X}_{g}) + \beta^{B} \overline{X}_{g} + \gamma Z_{g} + u_{g} + e_{gt}$$
(5)

... where cross-time means  $\bar{X}_g$  together with coefficients  $\beta^B$  cover the between-unit variance. At the same time, the expression  $\beta^W(X_{gt} - \bar{X}_g)$  captures the over-time group variance, and thus provides estimates of within-group variance (as the fixed effect transformation). Similar approach was proposed and used by Fairbrother (2011) for decomposition of effects at national level (into between and within country variance). However, as opposed to panel data, his dataset was composed from pooled cross-sectional data and thus did not contain decomposition at below-country levels. With panel data, in addition to within country and within group variance as in Jæger's model, Schmidt is able to use country-level and group-level variables to explain differences both between countries and between groups. The variance at the country level can thus be explained with country level effects, as well as with compositional effects from the group level. The complete estimated model is then:

$$DV_{gct} = \alpha + \beta^{W} (X_{gct} - \overline{X}_{gc}) + \beta^{B} \overline{X}_{gc} + \gamma_{1} Z_{1gc} + \gamma_{2}^{W} (Z_{2ct} - \overline{Z}_{2c}) + \gamma_{2}^{B} \overline{Z}_{2c} + u_{1g} + u_{2gc} + e_{gct}$$

$$(6)$$

In this model, vectors  $X_{gct}$  and  $Z_{2ct}$  represent the effects of group and the country level timevariant variables, which are decomposed into between and within parts. Variables in vector  $Z_{1gc}$  are, in fact, the group constituting variables (age, education, status), and thus remain constant, which makes it possible to use these variables to control for unobserved heterogeneity at the group level.

#### 2.2 Data Selection and Missing Data

The data for the analysis originate from the International Social Survey Programme (ISSP) modulus on "Social Inequality". These rounds of the ISSP took place in 1992, 1999 and 2009. Number of respondents ranged from about one thousand to one thousand eight

hundred with two exceptions in 1992 – Czech Republic (678) and Slovakia (423). This is due to Czechoslovakia being still a single country in 1992.<sup>16</sup>

The dataset was chosen for two reasons: firstly, it allows for easy comparability with previous research on similar topic – especially papers of Gijsberts (2002) and Kelley's work with Evans (1993) and Zagorski (2004). Secondly the data for the 2009 round became public only in 2011 and there is an opportunity to add to the previous research in a very straightforward way.

Problems with the data appeared in two forms. As it happens, forms of the questions which were asked and the answers that were offered differed from country to country, and from one year to another, and I had to recode some of the answers to be comparable in the cross-national and cross-time analysis.<sup>17</sup> The other problem was simply a case of missing answers. In the end, we have a set of data of people's answers to various questions regarding their opinions on social and economic inequality, the state of society, and the role which the government should play in this regard, and complemented with standard information on respondents' background characteristics.

As is to be expected with surveys based data from different countries, and with surveys from different years, frequencies of missing values increase to the point that the position of complete case analysis (or list-wise deletion) as of the second best option of choice becomes dubious (Allison 2002). In this case, questions regarding incomes have expectedly generated a lot of missing answers. Together with non-response to other questions (though with a few exceptions well below 10 percent), the amount of deleted information would be

<sup>&</sup>lt;sup>16</sup> The data were gathered mostly via methods of face to face interviews with standardized questionnaire, paper and pencil, and postal surveys with either simple or multi-stage stratified random samples of respondents. See International Social Survey Programme's website (www.issp.org) for further details

<sup>&</sup>lt;sup>17</sup> This was a case of data for Slovakia in 1999 in which questions on incomes of different occupations only provided possible answer in form of a categorical choice. The values used in the dataset were imputed as the mean value of the proposed "income bracket".

too high. To reduce a possibility of bias I decided to use the MCMC full data imputation method (provided by SPSS 21) with 10 imputed datasets and 100 iterations. The values were not rounded after imputation (Bodner 2008; von Hippel 2009). The imputation model consisted of all the relevant predictor variables (transformed to maintain the modeled variance) and was done for each country-year combination separately. As the dependent variable is constructed, rather than being a response to a direct question, it was imputed with the model in its already constructed form (Gelman and Hill 2007; von Hippel 2007). Imputed data were used for computations in OLS models presented in Table 3.

For construction of the pseudo-panel dataset, the method was different as the number of used variables was considerably smaller. Taking into account that the values of the constructed observation points were actually aggregated values, I decided for list-wise deletion in this case.

#### 2.2.1 Case Selection

It is important to note that this paper is not concerned with differences in attitudes between people from societies with significantly diverse historical and cultural backgrounds, but rather with differences which might have occurred for reasons other than such long-term circumstances. By not comparing two apparent groups, we can avoid the temptation to explain the variation in the sample by simply branding it a 'communist legacy' as this should have been a factor across all of the studied countries.

I decided to only use countries which entered the European Union in 2004, meaning that short-term goals of governments in regards to legislative changes and foreign relations were driven by similar incentives. 'East Germany' (Democratic Republic of Germany before the unification) was dropped because of radically different context of transition. I also decided against inclusion of Bulgaria and Russia. Bulgaria is much weaker economically than the rest of the sample and has joined the EU in only in 2007. In case of Russian Federation, it is in a completely different economic and political position than the rest of the sample. I was also forced to drop cases of Estonia, Latvia, Lithuania, and Romania due to lack of data. ISSP did not cover these countries in the 1992 round, can only provide data for Latvia in 1999, and there are no data at all for Romania.

Therefore, the countries that made it to the sample are Czech Republic, Hungary, Poland, Slovakia, and Slovenia. These have all undergone more or less similar changes in the last twenty or so years, and have also been a part of the former communist bloc. Furthermore, they were all oriented towards gaining membership in the European Union and had to modify their legislations accordingly. Finally, while there are differences, economic situation in these countries was on comparable levels for most of the time.

# 2.3 Legitimate (Just) and Perceived Earnings – Selected Occupations and Method

Concepts of perceived and legitimate earnings have been used by a number of authors in similar research setting (Jasso 1994; Gijsberts 2002; Kluegel, Mason, and Wegener 1995; Kelley and Evans 1993; Kelley and Zagorski 2004; Kuhn 2009) and provide for clear and comparable results. The idea is to compare answers on what respondents think people in certain occupations actually earn (perceived earnings), and how much respondents consider people in those occupation ought to be earning (legitimate earnings). In this way, both 'what is' and 'what ought to be' dimensions are covered, and we can see differences between personal perceptions of reality and personal beliefs of what would be an ideal state of matters. This comparison will be presented in the first part of the results section.

To estimate people's normative attitudes (tolerance) to amount of income inequality, which is mainly used in the second part of the analysis, I decided to use an index describing differences in personal attitudes towards legitimate earnings of people in top earning occupations (chairman of a national company, government minister, doctor in general practice) and legitimate earnings of people in the low earning occupations (unskilled worker in a factory, shop assistant, farm worker – in case of Slovenia in 1992).<sup>18</sup> Usage of means of earnings of multiple occupations, rather than of the top and the bottom ones, provide for more reliable and stable results. Such approach was also utilized in previous research (Gijsberts 2002; Kelley and Evans 1993; Kelley and Zagorski 2004; Kuhn 2009).<sup>19</sup> An advantage of using ratios is that resulting information are easily comparable between countries and different time periods, because it takes away problems with differing currencies. Furthermore, the selected way of expressing the suggested levels of inequality is more informative and clear than alternative methods – especially considering that an alternative would mean usage of categorical dependant variable. In case of available categorical variables, the range of answers was from 'Strongly agree' to 'Strongly disagree', which does not provide information about the amount of inequality that people find too large to agree with. It is certainly possible that two people agreeing with a statement that income inequality is too large in their country would have different opinions on what constitutes unacceptably high inequality.

Selected occupations were chosen exclusively on basis of data availability as these were the only ones featured in all three rounds of the chosen ISSP surveys. In particular, the

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<sup>&</sup>lt;sup>18</sup> Attitudes towards just pay of selected occupation are computed from the questions on suggested earnings for these occupations. Similar questions were asked on perceived earnings.

<sup>&</sup>lt;sup>19</sup> An alternative was to follow Verwiebe and Wegener (2000), who use only the ratio of the top and bottom occupations.

2009 round of the survey contains questions on only these five occupations.<sup>20</sup> I use mean earnings of two groups to mitigate the potential bias from selection of improper occupations<sup>21</sup>. Despite the limited range of available occupations, I believe that the overall informative value remains on a high level, as the selected occupations cover a broad range from the bottom to the top of the income scale, plus a prestigious occupation in doctors.

Regarding the particular occupations, chairman of a large national company represents the top of the income scale in both the private sector and the public sector. Government ministers are an occupation on which opinions can differ, but given its relative prominence, there is a rational expectation that people should have an opinion about how much the ones in such position should earn. Inclusion of the 'doctors in general practice' occupation is tricky because prior research indicates that doctors are in comparatively worse position in former post-communist countries than in western ones. However, I decided to include it among the high earning occupations mainly for comparisons with previous studies (Gijsberts 2002; Kelley and Zagorski 2004). Incomes of unskilled workers are traditionally a linchpin of analysis to which all of the other income values are compared. Addition of shop assistants was made to capture a broader base of the low income occupations and to provide a better overview of this part of the income spectrum. Furthermore, this occupation can be regarded as an equivalent of unskilled manual workers in the service sector.

Alternative methods were available. For instance, it would be possible to express occupational incomes relative to the average perceived income of unskilled workers.

 $<sup>^{20}</sup>$  I had to make an adjustment in case of data for Slovenia in 1992, where there were no data for earnings for 'shop assistants'. For this country – year combination, I decided to impute missing values with those of workers at farms instead, which is according to EGP class scheme an occupation at a level similar to shop assistants. Any eventual averages for this country - year combination are to be considered with keeping possible disparities caused by usage of such imputation in mind. Note that the mean ratio between incomes of farm workers and shop assistants was about 1.12 in the rest of the 1992 sample.

<sup>&</sup>lt;sup>21</sup> While unlikely, it is possible that people in different countries/times would regard the "deservingness" of the selected occupations with highly diverse ideas in mind. In such case, the results would not represent a closely approximated ratio of the top and bottom occupations, but only a weakly approximated ratio of the top and bottom occupations.

However, I decided to use individual perceptions and attitudes to be expressed in both the numerator and denominator to cancel out their possible misjudgments. This way, the results capture the ratio suggested by every respondent in the same way.

#### 2.3.1 Legitimate (Just) and Perceived Earnings – Computation

For each respondent, values for answers to questions on 'what people in the XYZ occupation ought to earn' were taken. The actual wording of the questions provided by the ISSP website is as follows:

Next, what do you think people in these jobs ought to be paid. How much do you think they should earn each <YEAR/ MONTH/ FORTNIGHT/ WEEK>, <BEFORE/ AFTER> taxes, regardless of what they actually get. Q5d Should earn: How much do you think an unskilled worker in a factory should earn?

Similar questions were used for other occupations. Responses were originally coded as absolute values in national currencies and so, to allow for international comparison, all of the reported earnings were transformed so that the resulting information would report the multiple of a value suggested as an income for the unskilled worker category. In this way, value of legitimate earnings of an unskilled worker will always be '1', and values of legitimate earnings for other occupations will be easily interpretable as multiples - thus immediately revealing a suggested amount of inequality between the two occupations. The values for the 'Legitimate earnings' variable for each of the analyzed occupations were then computed as follows:

Legitimate earnings of an occupation<sub>ict</sub> =  $ln(Occupation ought to earn_{ict} / unskilled workers ought to earn_{ict})$ 

where lower index "i" is a code for each of the respective respondents, in a given country "c", in a given year "t". As is usual for income inequality studies, natural logarithms were taken to clean the data and accommodate for the tendency where people think in percentages rather than in absolute differences<sup>22</sup>.

**Perceived earnings** variables were computed in a similar way, using questions on ideas about actual earnings of the given occupations.<sup>23</sup> Therefore, the actual earnings variables describe values of a multiple of what the respondents believed unskilled workers were earning. Values for perceived earnings of unskilled workers are then also always 1.

### Actual earnings of an occupation<sub>ict</sub> = $ln(Occupation \ earns_{ict} / unskilled \ workers \ earn_{ict})$

In the first part of the analysis, where comparison of perceived and legitimate earnings takes place, I use an additional variable to describe suggested legitimate earnings. **Legitimate** earnings expressed in perceived wages of unskilled workers. This variable is computed with values of legitimate earnings of each occupation in numerator and values for perceived earnings of unskilled workers as denominator. I believe that such variable allows us to uncover additional information about both the structure of inequality and peoples' beliefs when used in a proper setup.

Legitimate earnings of an occupation expressed in perceived wages of unskilled workers<sub>ict</sub> =  $ln(Occupation ought to earn_{ict} / unskilled workers earn_{ict})$ 

#### 2.3.2 Dependent Variable – Legitimate (Just) Inequality

The dependent variable reflects the overall amount of income inequality which respondents suggested as appropriate.

<sup>&</sup>lt;sup>22</sup> This means that an increase of 10% in income of a minister would be treated in the same way as an increase of 10% in income of a shop assistant (Jasso 1978; Gijsberts 2002; Kelley and Zagorski 2004)

<sup>&</sup>lt;sup>23</sup> The actual posed question in case of unskilled workers was: How much do you think an unskilled worker in a factory earns?
Firstly, the baseline is no longer only the legitimate earnings of unskilled workers, but is represented by a mean value of legitimate earnings of both unskilled workers and shop assistants. In this way, we obtain information on the mean level of earnings among the low earning occupations. This value is represented by the 'Legitimate earnings of low income occupations' variable.

Legitimate earnings of low income occupations<sub>ict</sub> = mean(Legitimate earnings of an unskilled worker<sub>ict</sub>, Legitimate earnings of an assistant in a small shop<sub>ict</sub>)<sup>24</sup> Legitimate earnings of a farm worker<sub>ict</sub>)

Secondly, the variable 'Legitimate earning of high income occupations' describes the mean value of legitimate earnings of the three high income occupations – doctors, ministers and chairmen. The resulting value tells us about how much more, in average, should people in high income occupations earn than unskilled workers.

Legitimate earnings of high income occupations<sub>ict</sub> = mean(Legitimate earnings of a doctor in general practice<sub>ict</sub>, Legitimate earnings of a cabinet minister<sub>ict</sub>, Legitimate earnings of a chairman of national company<sub>ict</sub>)

The third step of transformation, obtaining a ratio between legitimate earnings of high income occupation and legitimate earnings of low income occupations, provides us with the dependent variable – legitimate inequality. This variable represents the overall level of income inequality respondent suggested as legitimate.

Legitimate inequality<sub>ict</sub> = Legitimate earnings of high income occupations<sub>ict</sub> / Legitimate earnings of low income occupations<sub>ict</sub>

<sup>&</sup>lt;sup>24</sup> Legitimate incomes of farm workers in Slovenia 1992

Reliabilities (Cronbach's Alpha) for all compound variables were above the standard threshold of .7, with an exception of Hungary in 2009 where the reliability statistic for just incomes of high-earning occupations was at still acceptable at .547.

# 2.4 Operationalization of Independent Variables<sup>25</sup>

A fairly extensive selection of independent variables is grouped into three dimensions (socio-economic position and material interest, perception and reflection of status quo of the society, ideological convictions) and gradually added to the model to see changes in effect sizes and significance levels of individual variables. Some of the variables were originally coded as categorical (ordinal), but I decided to treat these as continuous for reasons of simplicity. Such approach is standard (Torra et al. 2006) and was used for instance in works of Verviebe and Wegener (2000), Jæger (2011), and Schmidt (2012), and the mean effects of ordinal categories were linear.

The **basic demographic variables** were coded as follows: age measured in years on a continuous scale; sex of the respondent as 1 for men and 0 for women; marital status (1 - married, 0 not marries); education (years of schooling).

# 2.4.1 Socio-Economic Position and Material Interest

H2.a subjective self-perception of own position in the social structure (originally in form of an ordinal variable: 1 - 10, considered continuous for sake of simplicity<sup>26</sup>);

<sup>&</sup>lt;sup>25</sup> Unfortunately, questions for meritocratic-liberal dimension were not available in all datasets for all countries. Same was the case of variables describing left-right political self-positioning. Also not included are measurements of contemporary discourse and evaluation of (participation in) political life.

**H2.b** objective socio-economic status of the respondent is captured with family income expressed as a (logarithm of) the ratio of the total income of the household in relation to mean perceived earnings of unskilled workers<sup>27</sup>; employment status (supervisory position at work (1, 0), government worker (1, 0), self-employment (1, 0), employment (1, 0)), ISEI,<sup>28</sup> and membership in a trade union (1, 0);

**H2.c** inactivity status with **expectations of the future** taken into account (student (1, 0), retired (1, 0)); at the societal level, GDP change and the level of unemployment (as percentage of total labor force) are considered<sup>29</sup>

**H2.d** overall level of wealth in a society is measured in GDP per capita (PPP)<sup>30</sup>

<sup>&</sup>lt;sup>26</sup> **The actual question posed was:** In our society, there are groups that are towards the top and groups that are towards the bottom. Below is a scale that runs from top to bottom. Where would you put yourself on this scale?

<sup>&</sup>lt;sup>27</sup> Family income is used instead of personal income for a simple reason of data availability. Nevertheless, such substitution is a standard approach and should not influence results extensively, and is used in a number of comparable studies (Gijsberts 2002; Kelley and Zagorski 2004; Jæger 2011)

 $<sup>^{28}</sup>$  I include a variable describing occupational status measured in ISEI scores (log to approximate normal distribution) (Ganzeboom et al. 1992). I decided for socioeconomic measurement of status, rather than for prestige scores because I agree with the notion that prestige scores are more likely to be an estimate of socioeconomic status than the other way around (Featherman and Hauser 1976). An easily available alternative would be to use nominal (though in many ways strongly ordinal) categorical schemes such as EGP (Erikson and Goldthorpe 1992). In the end I chose a continuous measurement because it fits better in the multivariate OLS model and a simple fixed effects (dummy variable based) model which I use in the analysis. As Ganzeboom et al. (1992) confirm, categorical scales correlate very closely with the continuous measurements (and with the selected method of data imputation). Indeed, the correlations between the three considered scales were so that the substantive part of the results would not have been affected by a different choice. For computation of both the ISEI scores and EGP categories from the ISCO codes, I used the scheme provided by Ganzeboom et al. (1992). In few cases, I first had to transform ISCO – 68 into ISCO- 88. Both EGP classes and ISEI scores work well in context of the studied countries in transition (Treiman and Szelényi 1993; Treiman 1994; Treiman 1998).

<sup>&</sup>lt;sup>29</sup> Data for growth of GDP (change from previous year in percentage points) were taken mainly from the OECD online database (http://stats.oecd.org/) and were supplemented with data provided by database of University of Pennsylvania - Center for International Comparison of Production, Income and Prices (https://pwt.sas.upenn.edu/php\_site/pwt\_index.php). Data for unemployment (as percentage of total labor force) come from databases of OECD and International Labour Organization (http://laborsta.ilo.org/), paper from Blanchflower (2001) on unemployment and well-being and wage curves in Central and Eastern Europe, and from World Bank's publication "Slovenia: From Yugoslavia to European Union" by Mrak, Rojec, and Silva-Jauregui (2004).

<sup>&</sup>lt;sup>30</sup> Values for GDP per Capita PPC (2005 is considered as a base year) were taken mainly from OECD online database (http://stats.oecd.org/) and were supplemented with data provided by database of University of Pennsylvania - Center for International Comparison of Production, Income and Prices (https://pwt.sas.upenn.edu/php\_site/pwt\_index.php).

# 2.4.2 Ideological Convictions<sup>31</sup>

**H3.a** To cover the **egalitarian-etatist dimension**, two questions are included: *It is responsibility of the government to reduce income differences*<sup>32</sup> and *Tax to income scaling*<sup>33</sup>. People with strongly egalitarian attitudes, and those in favor of state-led redistribution, are expected to (strongly) agree (Stamm, Lamprecht, and Nef 2002). Original coding was from 1 – strongly agree to 5 - strongly disagree (and from 1 – much larger share to 5 – much smaller share); variables are used as continuous.

**H3.b** Religiosity is coded as 1 for those with denomination and 0 for those with no denomination, a simple dichotomous division used also by García-Valiñas et al. (2007).<sup>34</sup>

H3.c Observation of traits necessary for success (due to the question on necessity oh 'hard work', only the non-meritocratic dimension is controlled for) measured by question of necessity of coming from a wealthy family, and a necessity of knowing the right people (originally measured on a scale from 1 -essential to 5 not important at all; used as a continuous measure because of imputation method and multivariate regression method in analysis)<sup>35</sup>.

At the societal level, aggregate mean values of the responses are considered. For egalitarian-etatist dimensions, I use mean value for the question "It is responsibility of the

<sup>&</sup>lt;sup>31</sup> Unfortunately, due to very high incidence of missing values for variables describing exclusively meritocratic and liberal positions (Slovenia 1992 being the largest culprit with no answers provided for questions describing exclusively these dimensions), it was only possible to measure the decline (or increase) in support of the etatist-egalitarian position, religiosity, and the extent to which non-merit based factors are required for success.

<sup>&</sup>lt;sup>32</sup> **The actual question posed was:** It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes

<sup>&</sup>lt;sup>33</sup> **The actual question posed was:** Do you think people with high incomes should pay a larger share of their income in taxes than those with low incomes, the same share, or a smaller share?

<sup>&</sup>lt;sup>34</sup> Frequency of attendance of religious services had very high rate non-response rate and was omitted completely in Slovenia 1992, and therefore the variable was not used.

<sup>&</sup>lt;sup>35</sup> **The actual questions posed were:** How important is coming from a wealthy family?; How important is knowing the right people?

government to reduce income differences". To measure the extent to which structural and inherent factors play a role in success is used the question "How important is coming from a wealthy family?" Religiosity is measured as a percentage of people having a religion.

### 2.4.3 Reflection of Society

**H4.a Perceived level of inequality** is expressed by a log of the ratio of perceived incomes of high earning occupations and low earning occupations, and was constructed in a way analogous to the dependent variable. Gini index is used as a measure of **objective income inequality**<sup>36</sup>

H4.b Social protection is measured as a level of social spending (expressed as percentage of GDP)<sup>37</sup>

**H4.c** Sensitivity to conflicts between various strata of the population was measured on a scale of 1 - very strong conflicts to 4 - no conflicts (used as continuous); conflicts between managers and workers, working class and middle class, and the rich and the poor are controlled for.<sup>38</sup> Sensitivity to inequality is measured by a question on whether income differences are too high<sup>39</sup> (originally coded from 1 - completely agree to 5; used as continuous). At the societal level, the mean value for conflicts between the rich and the poor is controlled for.

<sup>&</sup>lt;sup>36</sup> Data for Gini values come from online databases of EUROSTAT (http://epp.eurostat.ec.europa.eu/), OECD (http://stats.oecd.org/), World inequality database http://www.wider.unu.edu/research/Database/, and the World Bank (http://data.worldbank.org/).

<sup>&</sup>lt;sup>37</sup> Data for social spending were taken from the online database of OECD, IMF Government Finance Statistic Yearbook (2001 edition), Lelkes (2006), Stănulescu and Stanovnik (2009), and database of Ministry of Finance of Slovenia (http://www.mf.gov.si/si/delovna\_podrocja/tekoca\_gibanja\_v\_javnih\_financa/bilten\_javnih\_financ/).

<sup>&</sup>lt;sup>38</sup> **The actual questions posed were:** In all countries, there are differences or even conflicts between different social groups. In your opinion, in <R's country> how much conflict is there between poor people and rich people?

<sup>&</sup>lt;sup>39</sup> The actual question posed was: Differences in income in <R's country> are too large.

#### 2.4.4 Pseudo-Panel Data – Group Level

For the pseudo-panel part of the analysis I use group level and country level variables. Group level variables are simply aggregated means values from individual level. The variables I control for are logarithm of the perception of actual level of inequality, mean attitude towards the role of government in reduction of income differences (measured on scale from 1 -strongly agree to 5 -strongly disagree), logarithm of family income, and gender composition of the group (in % of men). The selected variables should control for the main parts of the self-interest, perception, and ideology dimensions, as well as for an empirically important demographic variable.

## 2.4.5 Pseudo-Panel Data – Country Level

For country level effects I selected variables that can be expected to have varied in two decades since the start of transformation. All country level variables are coded as continuous and their values were taken for the year (period in case of Gini) in which the corresponding survey took place. As we are dealing with countries that were in transition, or even in formation, I was forced to combine data from different sources. This could have a small effect on the reliability of the estimates. Data for other dimensions are aggregated values from the surveys. In addition, I include mean values for selected variables to describe effects of remaining dimensions – religiosity, overall support for government to intervene and reduce income differences, perception of conflicts between the rich and the poor, and a stance on requirement for success (question on need to having a wealthy family).

# 3. Results

# 3.1 Evolution of Attitudes towards Earnings in Central and Eastern Europe from 1992 to 2009

The first column (Actual) of Table 1 focuses on how respondents perceived earnings of the relevant occupations and their ratios, thus revealing people's perceptions of actual inequality in a given country. The second (Legit) and third (LIneq) columns provide an overview of suggested levels of incomes for given occupations (in multiples of mean perceived earnings of unskilled workers) and their ratios respectively. Such answers allow for inferences about approximate attitudes towards inequality in different countries and years.

We know from literature that people in Central and Eastern European countries tended to be quite egalitarian towards the end of 1980s (Gijsberts 2002; Kelley and Evans 2003), but that their attitudes have changed once the transition began. Indeed, data for 1992 more or less echo the values that Gijsberts published in a similar analysis comparing years 1987 and 1992, in which he shows quite rapid growth in levels of both perceived and just inequality in Hungary and Poland (though the values of both were still lower than corresponding results for western countries). Our starting position is thus a point in time in which the shift towards the less egalitarian values had already begun.

The first statistic we look into is the amount considered to be the just level of income inequality in each country in different years represented in the data (column 3 - LIneq). Figure 1 shows the evolution of mean attitudes towards inequality over the past two decades and somewhat different trajectories of the evolution of peoples' sentiments. What we see is a quite steep (28% on average)<sup>40</sup> increase in inequality tolerance towards the end of the first decade

<sup>&</sup>lt;sup>40</sup> The values presented in this section are computed with data from Table 1.

since the respective revolutions took place. This increase has been more radical in Slovakia (44%) and Poland (37%), as opposed to modest 13% in Slovenia. However, the across the board increase in tolerance of inequality from the first decade of transition did not persist in all of the countries. While level of acceptable differences in salaries continued to rise, albeit at slower rate, in Hungary and Slovenia, or remained rather stagnant in case of Poland, the opposite sign appears next to values from Czech republic (-17%) and Slovakia (-21%). This separation of trends in the second decade of transformation meant that, while Czechs accepted, on average, only 4% more inequality in 2009 than in 1992, by the end of the first decade of the new century, Hungarians and Poles modified their views to tolerate levels of inequality by about one third higher than they would have had in 1992. Overall, while the average level of inequality deemed just had grown by 20% on average, the country-level variance in accepted levels has certainly increased since the early 1990s.

#### Figure 1 Mean levels of legitimate income inequality

(Ratio of suggested incomes the between top and bottom earning occupations)



This impression from graphical representation of data is further supported by increasing between-countries effects presented in Table 2 where we can see the F value (of

ANOVA tests) virtually doubling in each period. The results for repeated measures ANOVA test from the pseudo panel dataset (Table 3) confirm this observation, but provide us with a clearer picture about the divergence on the country level. When testing with data from all three years, the country effect just did not reach threshold for significance (F(4,138) = 2.35, p = 0.58). This is caused by absence of significant country effect between 1992 and 1999 (F (4,142) = 1.39, p = 0.241). However, tests for country effect between 1999 and 2009, and 1992 and 2009 are statistically significant (F(4,147)=3.1, p = 0.018, and F(4,152)=6.13, p < 0.001). Table 3 actually shows that while the country factor was not significant in the 1992-1999 period, it became significant in the 1999-2009 period, confirming the expected divergence after the initial common direction. We can say that the differences in attitudes towards inequality have grown between the studied CEE countries, and that this growth in differences has increased with time, and thus confirm the hypothesis **H1**.

The story of perceived income differences (Table 1, column 'Actual'; Figure 2) is even more diverse than the one with legitimate levels of inequality. Though the overall increase in observed income inequality was 57 per cent between 1992 and 1999, the values in individual countries differed significantly, with perceived growth of inequality in Slovakia being over 100 percent, while Slovenian value for this period was only 9 percent. By the end of the next decade, however, the amount of perceived inequality dropped by 30 percent in Slovakia and risen by 41 percent in Slovenia, which was the highest rise in that period. Altogether, the average rise in perceived level of income differences for the 1992-2009 period was 74 percent, a figure quite larger than the 20 percent increase in tolerance of inequality.

#### Figure 2 Mean perceived level of income inequality



(Ratio of perceived incomes between the top and bottom earning occupations)

Therefore, we can have a look at one of the instruments describing the amount of perceived justice in the society. Analyzed in depth in its variable forms by Guillermina Jasso (1978; 1994; 2007), the simplest version of the index of justice simply posits the perceived amount of inequality against the suggested level of inequality, and the resulting ratio describes the perceived justness of the income distribution in the society. Figure 3 clearly shows a steep rise in perceived injustice in respective country-year combinations sans Slovenia in 1999 and Slovakia in 2009. The overall perceived injustice in income distribution rose from being about 50 percent higher than the ideal in 1992 to more than two times the just inequality in 2009.

#### Figure 3 Mean perceived amount of injustice in the society

(Ratio of perceived inequality to just (suggested) inequality)



We have observed that all of the studied countries ended up acknowledging higher levels of inequality as being legitimate than they had 17 years ago. Czech Republic and Slovakia seem to be the two countries best able to keep income differences from growing extensively, both in reality (or better in what respondents believed was the reality) and in attitudes of the people. On the other hand, people in Hungary and Poland did not only come to perceive significantly higher levels of inequality in their countries but, over time, have also became more ready to accept much larger differences than before. For instance, what Polish people considered an already unjustly unequal actual distribution in 1992 became considered as just in the subsequent decades. However, the good old times of low inequality seemed to be long gone in 2009, as the perceived level of inequality has more than doubled since the early years after the revolution. In sum, compared to situation from 1992, the average ratios of perceived and legitimate inequality have changed dramatically in a direction opposite to people's ideals and, presumably, wishes.

After establishing that changes in normative attitudes towards inequality in the observed countries had different trajectories, we can move forward to the second part of the analysis, aim of which is to examine within-country individual-level effects, and possible

impacts of compositions of these on between-country differences at the aggregate level in individual years.

# 3.2 Results - Individual-Level Effects<sup>41</sup>

Tables 4 to 8 present results of analyses done separately for each country (Table 4 – Czech Republic, Table 5 – Hungary, Table 6 – Poland, Table 7 – Slovakia, Table 8 - Slovenia), and Table 9 for each survey wave with pooled data from all countries. The reference year in country tables is 1999 and unobserved time related heterogeneity is controlled by dummy variables for survey years 1992 and 2009. Estimated models start with observing only intercepts for each year without independent variables (column M1), and continue with gradually adding dimensions of individual-level effects (M2 – demography; M3 – material position and self-interest; M4 – ideology; M5 – reflection of society; M6 reflection + perceived amount of inequality through; M6 represents fully specified model). For year-based pooled regressions, only the full model (M6) is presented. Columns 1992, 1999, and 2009 present results for the full model in individual years.

## 3.2.1 Czech Republic

According to the observed data, Czechs held the least egalitarian attitudes of the sample in both 1992 and 1999, but became the second most egalitarian country in the region in 2009. Interestingly enough, even while being the least egalitarian in attitudes, the amount of perceived inequality remained below the overall average in all three covered years (Table

<sup>&</sup>lt;sup>41</sup> Independent variables were checked for multicollinearity, but none was found, even between variables describing perception of inequality, judgment of extent of inequality, and attitudes towards the role of state in redistribution. The VIF scores were always under the critical value.

1). However, the level of injustice, which was originally at the level of perceived incomes being 33 percent higher than the just ones, has moved in the predictable direction over the two decades, and reached more than a 100 percent in 2009.

Table 4 reports education and age to be significant across all tested models. The positive effect of age (about four to five percent for every ten years)<sup>42</sup> stays highly significant even in the full model. In case of education, the effect size drops when controlled for variables describing material and social position, but remains significant, thus confirming the expectation that education has effect in at least two different dimensions. The first one is the dimension of personal social position via education's effective role in attainment of social status and income. The remaining positive effect of education can be attributed to either deeper (or rather different) understanding of the market system (controlling for ideological stance reduces both the effect size and significance of education), or to a residual expected social mobility (as we have already controlled for status of a student).

Of the social position variables, self-positioning has highly significant effect even in full model, while family income loses significance when perception of inequality is included in the equation. Effects of occupational status remain significant at the highest level and with largely the same effect value even with all other variables included, and the same is true for status of a student. None of other variables from dimension of self-interest score as significant (with exception of positive effect of being employed in 2009), though this is explainable with the ISEI scores working exceptionally well in Czech Republic (which is not the case for all countries).

Etatist position has a stable and highly significant effect, which has doubled in size in 2009. This is consistent with arguments of Vanhuysse (2006) and Alesina and Fuchs-

<sup>&</sup>lt;sup>42</sup> Note that these 'effect' values need to be computed as Exp (x) due to dependent variable being coded in logarithm.

Schündeln (2007), who claim that people from Central and Eastern Europe (countries with communist legacy) have become dependent on support from state and have positive attitude towards the role of state in redistribution.

Finally, background sensitiveness and perception of society do contain a very relevant effect in perception of inequality. Explaining 14 percent of the variance in the full model, perception of inequality is the strongest individual-level predictor for Czech Republic across all three observed years. Though its potency seems to have declined since 1992, it is still consistent with prediction that people adjust their opinions to perceived reality.

#### 3.2.2 Hungary

For most of the time, Hungarians have perceived the situation in their country as the least just of the region (Figure 3). While starting off with accepting below the regional average amounts of inequality, the perceived reality has been of unjustly high incomes for the politicians and top-level businessmen. This perception of top-heavy income distribution is underlined by disparity in perceived incomes of doctors, whose earnings were about 25 percent below the suggested level in 2009. At the same time, ministers and chairmen were considered to be earning more than double the suggested income level.

Table 5 shows that two of basic demographic variables (age, and education) remain significant even when everything else is controlled for (sex of the respondent loses significance when perception of inequality is included). The effect of age is similar to Czech Republic (and indeed, we will see that this is the case in all observed countries), but education seems to have a more significant role in determination of inequality tolerance in Hungary. Even with everything else controlled for, just five years of difference in years of schooling, an average between those with and without university degree in CEE countries, makes up for an increase of 10 percent in accepted level of inequality.

Of material interest and social position variables, only two effects score as significant – supervisory position (which is not significant in the full model), and occupational status. Direction of these effects is positive, and in line with the theory of personal position in the structure affecting normative attitudes. In an analysis for 2009 only, family income and self-employment become significant at the lowest level, and while family income has the expected positive effect, self-employment has a large negative effect (of accepting almost 23 percent less income inequality among the self-employed). With no further information on particular legislation in Hungary regarding self-employment, and with the self-interest hypothesis in mind, we can only speculate that that the actual position of most self-employed is in the lower half of the structure.

The influence of etatist ideology is apparent even in the full model. However, partial analyses for 1999 and 2009 show that this influence has disappeared since the start of the transformation. On the other hand, perception of, and sensitivity to, conflicts has a large bearing on personal attitudes towards inequality. In 1992 (and with all years combined) it were mainly perceived conflicts between management and workers which were affecting attitudes towards inequality. Two decades later, however, perceived conflicts between the working class and the middle class became significant in explaining attitudes towards inequality. Perhaps surprising is a direction of the effect of perceived conflicts, the more inequality were they ready to accept. While I do not have a sufficient explanation for this phenomenon, cognitive dissonance, together with mentioned disapproval of poverty and of reluctance to admit personal misfortune (Dudwick, Gomart, and Marc 2003), could perhaps lead to a 'distaste' for 'the poor complaining about the rich'. However, to claim such

inference with any authority would require a deeper analysis of discourse in Hungary (among other things). Expectedly, perception of the rate of inequality has a strong and significant positive effect on the level of inequality tolerance.

Interestingly, only in Hungary are personal attitudes towards inequality affected by a belief that one needs to "know the right people" in order to be successful. This effect has the predicted negative relationship with tolerance of inequality.

#### 3.2.3 Poland

In 1992, Poland had the lowest amount of perceived income inequality in the region. In fact, so low were the perceived incomes, that even ministers and chairmen were deemed to deserve more than they were getting at the time (Table 1). Since then, the perceived incomes of these elite occupations have almost doubled (to be precise, the ratio to perceived incomes of unskilled workers has doubled), and the ratio of earnings at the high-income jobs to those of low-income has more than doubled. At the same time, the inequality ratio which Polish people accept as just seems to have stabilized after only one decade of transformation.

Results for individual-level effects (Table 6) see age have similar impact in Poland as in other countries (ten years meaning around 6 percent higher inequality tolerance), and education being slightly more impactful here than in Hungary (14 in comparison to 13 percent of higher inequality tolerance for five years of extra education). Poland is also the only of the observed countries where men accept significantly more (about four percent on average) inequality than women when all other variables are controlled for.

While self-positioning does not have an effect in Poland, the objective measurements of social status report significant effects even in the full model. Family income, occupational

status, and a status of being a student are all positively linked to acceptance of higher inequality (students accepting about 13 percent more inequality in the pooled sample, and about 27 percent more in 2009 alone, could indicate a development of a strong tunnel effect, or some other effect among mainly the younger generation).

The ideological dimension reports an expected positive effect of egalitarian-etatist attitude. The support of the active role of the government in dealing with income inequality has predicted effect on tolerance of inequality even in the pooled model. Regarding individual years, in 2009, those in disagreement with progressive taxation are also more tolerant of inequality.

A very strong and highly significant effect becomes visible after controlling for perceived level of inequality. This effect is, however, slightly moderated among people who are more sensitive towards the scale of income differences.

## 3.2.4 Slovakia

Slovakia, being the most egalitarian country in both perceived (together with Poland) and just incomes in 1992, has become the least egalitarian in perceived incomes in 1999, and virtually shared the first place for the least egalitarian country in attitudes in the same year (Table 1). By 2009, however, things have reverted back to 'normal' as Slovaks reported to be the most egalitarian country of the sample in both perceived and just inequality. Slovakia is also the only country where ministers were considered to be more deserving than top-managers. This could be a possible hint for strong etatist attitudes, and results for individual-level effects go along with this explanation.

Individual-level effects reported in Table 7 show that impact of age, while significant even in the full model, is slightly tamer in Slovakia in comparison to other countries (an increase of three percent for ten years of difference in age). Similarly, effect of education (about nine percent with five additional years of schooling) also holds significant even with all other variables included.

A slight drop in the effect of education appears when social position is controlled for. Of variables testing for social position and material self-interest, only family income tests significant (with positive effect) when all other effects are controlled for. However, even when only demographic and social position dimensions are included, the significance level of family income is only the most modest one.

The opposite is true for etatist attitudes. Attitude towards the role of the government in management of income differences is significant at the highest level even in the full model and, though the effect of the variable disappeared in 1999, its impact was significant in 1992 and 2009 (though the effect is slightly weaker in 2009).

In the dimension of perception and sensitiveness, perception of inequality has a strong effect on normative attitudes, while perception of conflicts (especially between management and workers, but also between the working class and the middle class) has a weaker, but still measurable influence.

#### 3.2.5 Slovenia

The trajectory of Slovenian attitudes towards and perceptions of inequality is different from that of other countries. It started off as the least egalitarian country in the perceived amount of inequality and above the mean in regards to normative acceptance of inequality. However, contrary to developments in the rest of the sample, the amount of perceived inequality has risen by only 9 percent between 1992 and 1999, and the level of accepted inequality increased only by 13 percent (Table 1). This made Slovenia a country with the lowest amount of both perceived and normatively accepted levels of inequality in 1999 and, in addition, a country perceived as the most just by its citizens. Nevertheless, what other countries experienced during the nineties, Slovenia went through in the first decade of the new century – a rather steep rise in perceived inequality.

Regarding the individual level determinants of inequality tolerance reported in Table 8, the statistically significant effect of age seems to be ubiquitous and around more or less the same values (in case of Slovenia it is about six percent per ten years). Unlike in most other countries, the initially significant effect of education disappears completely after controlling for other effects.

Subjective perception of own position in the structure does not affect personal attitudes towards inequality among Slovenes. On the other hand, objective measures, specifically level of income and supervisory position have significant positive effects even in the full model. Also significant was a negative effect of self-employment, meaning that self-employed are more likely to have more egalitarian attitudes.

Slovenes whose answers scored as less etatist were, unsurprisingly, more likely to accept higher levels of inequality. As well as in other countries, the most potent predictor variable for Slovenia, adding about 11 percent to the  $R^2$ , is the perception of actual inequality.

## 3.2.6 Individual-Level Effects - Overall Effects and Assessment of Hypotheses

Overall, we can see from Tables 4 through 9 that amount of perceived inequality is the most powerful individual-level predictor in all of the countries and across all of the years. On average, about 30 percent of the perceived inequality translates into normative position towards the issue.<sup>43</sup> Such effect is in line with hypothesis which states that normative attitudes are dependent on perceived reality (**H4.a**) and previous results of Gijsberts (2002) and Kelley and Zagorski (2004). The dimension of perception of society and sensitivity to the perceived background provides three other significant predictor variables, main of which is the sensitivity to the magnitude of differences in incomes. Perception of intra-societal conflicts also scores as a significant, although different types of conflicts are significant in different years. The most recent survey reports impact of perception of conflicts between the middle class and the working class. Such findings confirm the expectation that people who are more sensitive to perceived injustice and conflicts will prefer the income differences to be lower (**H4.c**), and are in line with results presented by Toth and Keller (2011).

Regarding the dimension of ideological convictions, the more etatist respondents (as measured by position on the role of the government in the of incomes differences) had expectedly lower tolerance for inequality. Perhaps surprisingly, positive attitude towards higher taxation for those with higher incomes (presumably egalitarian attitude) scored as significant only occasionally, and thus does not seem as a stable individual-level predictor of attitudes towards inequality. The overall effect of this dimension seems to confirm previous

<sup>&</sup>lt;sup>43</sup> The exact ratio is somewhat interesting as it is 30 percent of a perception expressed in a logarithm before the exponential transformation. Imagine someone perceives actual inequality to be 2.72, meaning 172 percent more than a salary of an average unskilled worker. Logarithm of this number is 1 and 30% of this logarithm would be entered into equation of that person's legitimate inequality attitude, thus increasing it by around 35% (exp(0.3) is 1.35)) after the exponential transformation. Now imagine a second person, logarithm of whose perception of actual inequality is 2. 30% of 2 is 0.67, meaning an increase in acceptance of inequality by 97 percent (exp(0.67)=1.95). However, exp(2) is 7.39, which means that while the ratio of perceived to accepted inequality for the first person is 2.72/1.135  $\approx$  2, for the second person it is already 7.39/1.95 which means 3.79. Basically, the more perceived inequality, the more people will excuse, but the lower will be their tendency to excuse additional inequality.

findings (Kreidl 2000; Hadler 2005; Castillo 2007) that people who agree with the active role of state in redistribution have also a lower tolerance for inequality (**H3.a**). The effect of having a religion (though operationalized in a rather simplified manner) did not confirm the expected positive relationship with tolerance of inequality (e.g. Scheve and Stasavage 2006, Elgin et al. 2013), nor seemed to be present in this regard in the context of the studied countries at the individual level (**H3.b**). With exception of Hungary, the analysis did not find any individual-level evidence for that people would base their attitudes towards inequality on whether they consider nepotism as a requirement for success (**H3.c**).

The variables testing for the self-interest hypothesis confirmed the expected positive relationship between the objective socio-economic position and attitude towards inequality. Various aspects of social position were controlled for and the most significant were family income and occupation as measured by the ISEI scheme. There were effects which were present in some countries and not in others (such as position of a student, supervisory position, or a position of a self-employed). Especially in regards to the ISEI scheme, it is important to note that it is a scheme that should be applicable internationally, which of course makes it less effective in some countries. However, controlling for effects such as supervisory position and family income helped us to capture that people in higher social positions are more likely to accept higher levels of inequality (**H2.b**). On the other hand, subjective perception of own position in the structure does not have any effect (with exception of Czech Republic) on personal tolerance of inequality (**H2.a**). Furthermore, the proxy for tunnel effect was present for students in Czech Republic and Poland, but not in other countries nor for retired (nor for the not employed) in any of the samples (**H2.c**).

Among the demographical variables, the older respondents consider higher levels of inequality as acceptable, and those with more years of education as well. In Hungary and Poland, sex of the respondent was found as significant at lower levels, with women having significantly more egalitarian attitudes than men. This could mean either that women have, on average, worse positions than men (explanation via social position, which does not seem to hold when controlling for this dimension), or that there is some background, perhaps cultural influence.

Figures 4 and 5 show intercepts for each country-year combination before and after controlling for individual level effects, and through this the explanatory power of compositional effects. Though the standard deviation decreases slightly when the compositional effects are controlled for, it is not enough for suggesting that variance between countries could be comprehensively explained by differences in compositional effects from individual level.

However, even with that in mind, we can read from Table 10 that there indeed are differences in the amount of additional explanatory power behind each of the tested dimensions regarding the individual countries. The dimension of material self interest and social position (H2) is most important in Czech Republic and least influential in Slovakia. The variables describing personal ideological guiding principles explain the most variance in Poland, and have slightly lower explanatory power in other countries (H3). Finally, the dimension of perception and reflection of state of the society explains the most variance in all countries, but is about two times more potent in Czech Republic and Slovenia than in Hungary and Slovakia, with Poland being in the middle (H4). The overall explanatory power of the tested model is highest in Czech Republic, Slovenia, and Poland with about 23 percent variance explained over the three tested years, and the weakest in Hungary, where only about 18 percent of the variance was captured by the model.

There is also a notable difference in the explanatory power of demographic makeup of the samples in different countries. However, as education was included in this model, and because its impact usually decreases when dimension of social position and self-interest is controlled for, we can assume that a part of the influence of demographic structure actually shares some of its effects with dimension of social position.

Regarding influence of the dimension of ideology, it is important to note that in Hungary, Poland, and Slovakia has the influence of etatist attitudes decreased significantly in the end of the first decade of transformation, but has since returned as important in Poland and Slovakia. While not explaining too much of additional variance, sensitivity to conflicts and inequality seem as an interesting dimension to look at future research, especially because in many cases has the impactful variable shifted from conflicts between management and workers to conflicts between middle class and the working class.

**Figure 4** Intercept values for just inequality with micro-level variables not controlled for (values taken from Tables 4 to 8)



**Figure 5** Intercept values for just inequality with micro-level variables controlled for (values taken from Tables 4 to 8)



## 3.3 Results - Multi-Level Analysis

# 3.3.1 Country-Level Effects - Description

As an alternative approach for estimation of determinants of personal attitudes towards inequality, I used a multilevel random-effects model (and full maximum likelihood for estimation of effects) on a constructed pseudo-panel dataset. The analyzed units are observations of socio-economic groups nested in countries. We observe impacts of nationaland group-level variables on the mean attitude towards inequality of each group (group's members). The results are presented in Table 11. Between (B) and within (W) effects of are separated. Note that these describe effects between the units at the same level (groups and countries) and within these units (change in time).

First two columns (of Table 11) are presented to establish that the group constituting variables effectively control for the variance at group level. Variance decomposition analysis for intra-class correlations based on the column M1, in which only year dummies are included, reports following coefficients: ICC<sub>country</sub>: 0,008; ICC<sub>group</sub>: 0,237; and ICC<sub>time</sub>: 0,662. Unexplained variance between countries seems almost non-existent, and variance at group level accounts for about 24%. The largest part of unexplained variance, about 66 percent, is attributable to over-time changes within groups. Second model (column M2) includes group constituting variables (age, level of education, and status measured in EGP classes), and we can see that unobserved variance between groups decreases to zero. Model 3 (Table 11, column M3) includes group level effects, both in the between and within directions, and these significantly lower the unexplained over-time within-group variance.

Models testing the influences of variables grouped into dimensions are presented in columns Model H2 (model for hypothesis 2 – material self-interest), Model H3 (model for

hypothesis 3 - ideology), and Model H4 (perception and reflection). The columns M4 and M5 present models in which all the between-countries variance is controlled for, and thus test only the variance in the within direction, meaning change in time (M5 does not include effect for Gini as this was significantly affecting other variables due to multicollinearity). Next I describe effects of country-level characteristics.

Due to a rather small number of observations at the national level, inclusion of a larger number of variables was causing problems with multicollinearity.<sup>44</sup> After consulting literature (Arceneaux and Huber 2007) and ensuring that the overall fit of the model increased, I decided to report results for the full specifications of the tested dimensions (material self-interest, ideology, perception and reflection of society). In addition, to provide a general idea of what the effects of individual macro-level predictor would be like had there be no multicollinearity present I also add results for effects of individual macro-level predictors when used alone in the tested models. Similar approach was utilized by Hadler (2005), who also faced a problem of over-determination of the model at the country-level. Values of effects of individual macro-level variables on the dependent variable when used alone (columns beta coefficients), their effects on reduction of unexplained variance (columns remaining variance), and the VIF scores when included together with other variables from the same dimension (column VIF within dimension) are in Table 12 (country-level predictors added to the model M1 from Table 11) and Table 13 (country-level predictors added to the model M3 from Table 11). We can see that there are almost no significant effects in Table 13

<sup>&</sup>lt;sup>44</sup> There were two main instances in which multicollinearity caused problems with estimates and significance. Firstly, when included in the dimension of material self-interest, the between effects of GDP per capita and unemployment reacted in a way that increased standard error of the GDP per capita (and of its squared term) variable to a degree that the effect lost its significance. Also, a positive effect of the GDP growth has disappeared in this direction. Secondly, when testing the effects in the within direction only (Table 11, column M4), the inclusion of the variable describing the Gini index affects significance of the level of social protection, religiosity, unemployment, and attitude towards the role of the government. Results for this analysis without the Gini variable are included in Table 11, column M5. In other cases, not including a variable did not affect the results in any significant way, as the directions of effects are in line with both the theory and the available data. Centering of data did not have any effect as the problem was not caused by high correlations but rather by over-determination of the model.

- a sign that country-level variables do not explain a lot of additional variance when group level is controlled for.

Values for Table 12 report that most of the tested macro-level variables have significant effects, but also show that these effects, even when added together, explain only a small portion of the unexplained variance. The relationships are mostly in line with theory-based expectations. However, almost all of these effects disappear in single variable tests when group level variables are controlled for (Table 12), and only three remain significant – GDP per capita, GDP growth and proxy for etatist attitudes (role of government in redistribution).

As a next step, I included groups of predictors in accordance to theoretical dimensions. Reported results show that the dimension explaining the most variance is the material selfinterest one but, on macro-level, the tested dimensions explain only a small portion of the variance (Table 11, columns MH2, MH3, MH4).

## 3.3.2 Country Level Effects – Assessment of Hypotheses

When considered alone (Tables 12 and 13), effects of GDP per capita were in line with the expected effects stated in hypothesis **H2.d** that an overall amount of wealth has a nonlinear effect on inequality tolerance after a certain threshold. The between-countries effect was not significant unless quadratic term was introduced into the equation, but then supported Beck's (1986) claim that inequality stops being a concern after a certain threshold of wealth is achieved. On the other hand, the effect in the within direction (Table 11, column M4) has an opposite sign when all of the between variance is controlled for, thus supporting the hypothesis that equality and that increase in wealth leads to an increase in demand for equality (Lambert, Millimet, and Slottje 2003). Graphical representation of the relationship confirms a presence of a non-linear relationship in both directions (Figure 6).

The expected positive effect of GDP growth on inequality tolerance is present in the between direction when it is included as a single variable (Tables 12 and 13). Furthermore, testing for within effects only (Table 11,columns M4 and M5) shows that there indeed is also a positive within-country effect when the between variance is controlled for, which is in line with previous findings (Lambert, Millimet, and Slottje 2003; Schmidt 2012).

When considered alone, the effect of the rate of unemployment did not reach significance in either direction. However, other results (Table 11, column M5; and graphical representation in Figure 8) suggest that a positive change in unemployment to some extent corresponds to increase in inequality tolerance. If present, the relationship does not seem to be strong - a result contrary to those of Jæger (2006b); Dallinger (2010); and Schmidt (2012).

Overall, we can assume that country-level characteristics related to expectations of future risks or fortunes do affect individual-level positions towards. However, while present, the national-level evidence supporting the hypothesis **H2.c** is relatively weak.

Hypothesis **H3.a** stated that inequality tolerance will be higher in countries where etatist attitudes are stronger, but this is not the case (Table 11, columns Model H3 and M5, Table 12, Table 13), and the results thus go against previous findings of Stamm, Lamprecht, and Nef (2002) and Hadler (2005). While support for governmental action in redistribution has increased, so has the level of accepted inequality. Both effects could be related to the steep increases in objective and perceived levels of income inequality, and to Vanhuysse's (2006) suggestions that a lot of people in Central and Eastern Europe have become financially dependent on support from state in the early years of the transition and thus had no interest in reevaluation of etatist ideological position.

Level of religiosity in the country has the expected positive effect in the within direction, but does not report a between effect. Furthermore, the within effect is only significant when used as a single predictor when group level variables are not included (Table 12), and when all of the between variance is controlled for and Gini is not included (Table 11, column M5). While there is some evidence that results are in line with those of previous research (e.g. Scheve and Stasavage 2006; Elgin et al. 2013), data show only a mixed support for the hypothesis **H3.b** that more religious societies will tolerate higher levels of inequality.

Similarly to etatist attitudes, beliefs that there are strong non-merit based requirements for success do not have the expected effect on inequality tolerance. Contrary to the expectation, it is the disagreement with the notion that there are structural requirements for one to be successful that has an effect of decreasing the level of accepted inequality. While very weak (only reaching significance when the confidence level is extended to p < 0.1) there is measurable effect between countries (Table 11, column Model H3). A stronger relationship is measurable in the within direction (Table 12), but this disappears once the group level is controlled for. We thus have to reject the hypothesis **H3.c** that people are more tolerant of inequality when they believe that there are non-merit based requirements for success. Furthermore, there is some, though weak, evidence that this relationship has the opposite direction in the studied countries.

The objective level of inequality can be confirmed to have a measurable and quite high positive effect on inequality tolerance in both between and within directions (Table 11, columns Model H4 and M4; Table 12), which is in line with expectations based on the theory of natural rate of subjective inequality (Lambert, Millimet, and Slottje 2003) and subconscious adjustment to the perceived reality (Homans 1974; Gijsberts 2002; Kelley and Zagorski 2004). Therefore, we can confirm the hypothesis **H4.a** at both individual and national levels.

Level of spending on social protection is only significant in the within direction and when Gini is not controlled for (Table 11, column M5). This was caused by a high negative correlation between the two variables. Graphical representation shows that the expected inverse relationship between the level of social spending and tolerance of inequality is present in the data in the within direction. We can thus confirm hypothesis **H4.b** that increase in social protection spending leads to an increase of demand for equality. Such results are in line with previously found effect reported by Jæger (2006a) and Dallinger (2010), but contradict the more recent findings of Jæger (2011) and Schmidt (2012).

Finally, hypothesis **H4.c** that the average amount of perceived conflicts would be inversely related to inequality tolerance seems to have only a weak support in the data. While the expected relationship is observable when group level variance is controlled for (Table 11, column Model H2), this is only when the confidence interval is extended (to p < 0.1). Thus, the evidence for support of this hypothesis is weak at best, and we cannot confirm it.

In general, results of macro-level characteristics confirm most of the expected relationships, though the amount of explained variance remained very low for all of the tested variables and dimensions. This could be the case because of a rather small sample size at the country-level.

# 3.3.3 Group-Level Effects

The variance explained through group level variables was considerably higher (as seen in Table 11). An interesting observation at this level is a difference in direction of between and within effects of family income. Groups with higher incomes were more tolerant of inequality, but an over-time increase in earnings has an effect of increased support for equality. Such results are consistent with the expected positive relationship between personal social position and inequality tolerance and, at the same time, with the hypothesis that if equality is considered a normal good, increase in wealth will generate a demand for equality (Lambert, Millimet, and Slottje 2003). Other group level variables behaved similarly to results from the individual level OLS regressions. Inequality tolerance increases with age and it is clear that, on average, the older cohorts do not harbor sentiments for a more equal distribution of incomes from the communist era. The effect of education is strong especially among those with university level education. Effect of socio-economic class (measured in EGP scheme) disappears when group level independent variables are controlled for, though the positive relationship is present in the less specified model. Perceived level of inequality is highly significant and has a large positive effect in both between and within directions. Finally, groups that do not consider government to be responsible for redistribution are more tolerant of inequality.

Together with results from individual level, we can say that although the variance in the amount of tolerated levels of inequality has increased between the observed countries, both the compositional effects of individual-level explanatory variables and the national-level characteristics do not help to reduce the unexplained between-countries variance by a lot. The results from panel data, however, also indicate that most of the unexplained variance still lies in the over-time variance, rather than in the spatial differences. Nevertheless, the most important variable seems to be perceived level of inequality as an individual-level reaction to macro-level change.

# **Discussion and Conclusion**

The aim of the analysis was to assess the variance in attitudes towards inequality among the countries of Visegrad 4 and Slovenia, and the factors that could explain this variance. Testing for the increase in the variance between countries was successful, and we have confirmed that differences in attitudes towards inequality have indeed grown and that studied countries followed different trajectories in regards to attitudes towards inequality. However, analyses of reasons for this increase in differences in attitudes deal slightly vague results.

Two alternative models for this assessment were presented. The first model presented a multivariate OLS approach and was focused on the variance caused by individual-level variables, and on compositional effects of these. The second model uses multilevel random effects design proposed by Schmidt (2012) and observes variation among countries and constructed cohorts which form a pseudo-panel dataset originally presented by Jæger (2011). In both cases, the dependent variable was logarithm of the amount of inequality suggested as just by the respondents of ISSP's surveys on Social Inequality.

Results from individual level are consistent with expectations based on previous research. Similar to findings of Gijsberts (2002) and Kelley and Zagorski (2004), the most powerful predictor variable across all models and countries is the amount of perceived inequality. Additionally, panel analysis shows that increase in the amount of perceived inequality has a positive effect on inequality tolerance. Demographic variables explain the second most variance in tested models, though their influence slightly declines after inclusion of variables measuring social status. Panel model shows that a positive relationship with inequality was most prevalent among those older than 55 years and those with tertiary

education. The dimension of personal position and self-interest usually brought the third most explained variance into the OLS model. On average, people with higher occupational status and those with higher incomes are more tolerant of inequality, which is in line with findings of a number of previous studies (Svallfors 1997; Gijsberts 2002; Evans, Kelley, and Kolosi 1992; Kelley and Zagorski 2004; Blekesaune 2007; Dallinger 2010). In the panel model, this relationship is in general held in the between 'direction' but, an experience of increase in family income reported an effect of decrease in inequality tolerance – a result supporting the hypothesis that inequality might be considered a normal good (Lambert, Millimet, and Slottje 2003). A small amount of variance was also explained with personal ideology and to a lesser extent with sensitivity to social context. Both of these dimensions supported the expectations based on previous research (Delhey 1999; Stamm, Lamprecht, and Nef 2002; Hadler 2005; Toth and Keller 2011) but did not explain nearly as much variance as other tested dimensions. In the panel model, individual level variables (in the form of group means) did mostly confirm results of the OLS model.

Regarding the impacts of national level effects on an individual (or rather group) attitudes, the results show differences in objective level of inequality measured through Gini index as the most successful predictor variable, a result in line with the notion of the natural rate of subjective inequality and the research of Lambert, Millimet, and Slottje (2003). A larger number of significant results were found when testing for changes in time. Growth of GDP, but also a growth of inequality, rate of unemployment, and religiosity in the country had a positive effect on inequality tolerance. On the other hand, increases in the amount of social spending and the level of wealth measured in GDP per capita had an effect of increase of demand for equality. Surprisingly, increase in support for government being active in redistribution had a positive relationship with inequality tolerance.

However, though the models were quite extensive, a lot of variance was not captured. In general, individual-level models had the worst fit with the data from 1999, which can be in attributed to a lot of background changes happening towards the end of the first decade of the transformation. Secondly, there may be cultural, institutional, and structural reasons that are not observable via survey data. For instance, contemporary discourse, or historical path-dependency may affect the way in which people view certain topics or attribute causal influences to phenomena such as poverty (Alesina and Fuchs-Schündeln 2007; Dudwick, Gomart, and Marc 2003). Institutional settings, such as details in welfare or healthcare systems, or in labor-state-capital relations may also play a role. Thirdly, as the dependent variable was composed of personal estimates of and suggestions for earnings of different occupations, there may be an unexplained variance based simply on a different quality of information about earnings of other occupations between people with similar characteristics. While this suggests that information about earnings influence normative suggestions for these, the proposed link is not unwarranted, and indeed, supported even by this analysis.<sup>45</sup>

The paper adds to the debate on (a change in) attitudes towards social issues in postcommunist countries and confirms the importance of perceived levels of inequality in times of major societal change. In addition to standard cross-sectional approach, it also offers a longitudinal analysis via application of Schmidt's (2012) multilevel model on a constructed pseudo-panel dataset (suggested by Jæger 2011). The novel approach yields some results, though these are rather modest due to a (still) low amount of country-level observations. Nevertheless, substantive results of multilevel approach are less vague and easier to interpret than results of traditional cross-sectional analysis. The conclusion is then that the increase in

 $<sup>^{45}</sup>$  Tough Headey (1991) offers that the direction could work in reversed order, the large change in perceived inequality and a comparably small change in legitimate inequality provide a reason to not accept such explanation – a logic shared by both Gijsberts(2002) and Kelley and Zagorski(2004) in reaction to the same issue.

variance inequality tolerance between the studied Central and Eastern European countries has indeed happened, but on a rather small scale if we compare differences between the individual countries. On the other hand, if we observe changes within countries, we can see that the main culprits for a rather radical overall change were perception of income inequality and social position on the individual level, and an increase in affluence and in the objective rate of inequality at the societal level. The results thus show that, mainly as a reaction to a steep increase in perceived income inequality, formerly egalitarian citizens of the studied countries have adapted their attitudes towards income disparities and started to accept higher levels of inequality as legitimate.

Seeing the strengths of the multi-level modeling, I believe that one of the challenges to tackle in the future is to homogenize the international datasets on topics usually covered by surveys, so that we can increase our understanding of the topic through usage of better, more complete models. In regards to research on attitudes towards social issues in post-communist countries, a qualitative, perhaps discourse based research could add depth to our insight into why were the perceived increases in income differences met with such acceptance.

# Annex

## Table 1 Actual and Perceived Earnings

(Mean values for ratios of 'Actual' - mean perceived inequality ratio expressed in perceived incomes of unskilled workers, 'Legit' – mean suggested inequality ratio expressed in mean perceived income of an unskilled worker, and 'LIneq' – mean suggested inequality ratio expressed in suggested incomes of unskilled worker); values for shop assistants in Slovenia 1992 were replaced by answers for farm workers due to that question missing in the given year.

| Occupation       | Czech Republic |       |                   |   | Hungary |       |       | Poland |       |       |   | Slovakia |       |       |   | Slovenia |       |       | All countries |       |       |
|------------------|----------------|-------|-------------------|---|---------|-------|-------|--------|-------|-------|---|----------|-------|-------|---|----------|-------|-------|---------------|-------|-------|
|                  | Actua          | Legit | Llneq             | - | Actual  | Legit | Llneq | Actual | Legit | Llneq | - | Actual   | Legit | Llneq | - | Actual   | Legit | LIneq | Actual        | Legit | Llneq |
| 1992 n           |                | 603   |                   |   |         | 880   |       |        | 1203  |       |   |          | 361   |       |   |          | 877   |       |               | 3924  |       |
| Unskilled Worker | 1,00           | 1,40  | 1,00              |   | 1,00    | 1,73  | 1,00  | 1,00   | 1,94  | 1,00  |   | 1,00     | 1,50  | 1,00  |   | 1,00     | 1,72  | 1,00  | 1,00          | 1,65  | 1,00  |
| Shop Assistant   | 1,17           | 1,68  | 1,20              |   | 1,04    | 1,74  | 1,01  | 1,24   | 2,18  | 1,12  |   | 1,11     | 1,63  | 1,08  |   | 1,23     | 2,05  | 1,20  | 1,16          | 1,84  | 1,12  |
| Doctor           | 2,20           | 3,14  | 2,25              |   | 2,18    | 3,30  | 1,91  | 1,92   | 4,13  | 2,13  |   | 2,11     | 2,85  | 1,89  |   | 3,04     | 4,13  | 2,40  | 2,26          | 3,47  | 2,11  |
| Cabinet Minister | 9,07           | 6,54  | 4,68              |   | 9,87    | 6,11  | 3,54  | 6,77   | 6,35  | 3,28  |   | 8,67     | 5,73  | 3,81  |   | 8,54     | 6,70  | 3,90  | 8,52          | 6,28  | 3,81  |
| Chairman         | 5,42           | 5,34  | 3,83              |   | 7,37    | 5,87  | 3,40  | 7,64   | 7,72  | 3,99  |   | 4,62     | 4,61  | 3,07  |   | 8,73     | 6,64  | 3,87  | 6,58          | 5,94  | 3,61  |
| Mean High Income | 4,76           | 4,79  | 3,43              |   | 5,41    | 4,91  | 2,84  | 4,63   | 5,87  | 3,03  |   | 4,39     | 4,22  | 2,81  |   | 6,09     | 5,68  | 3,31  | 5,02          | 5,06  | 3,07  |
| Mean Low Income  | 1,08           | 1,59  | 1,10              |   | 1,02    | 1,73  | 1,00  | 1,11   | 2,05  | 1,06  |   | 1,05     | 1,56  | 1,04  |   | 1,11     | 1,88  | 1,09  | 1,08          | 1,76  | 1,06  |
| Mean High/Low    | 4,12           | 3,13  | 3,13              | _ | 5,30    | 2,83  | 2,83  | 3,92   | 2,86  | 2,86  | _ | 3,94     | 2,70  | 2,70  | _ | 5,49     | 3,03  | 3,03  | 4,50          | 2,91  | 2,91  |
| 1999 n           |                | 1491  |                   |   |         | 708   |       |        | 842   |       |   |          | 985   |       |   |          | 883   |       |               | 4909  |       |
| Unskilled Worker | 1,00           | 1,36  | 1,00              |   | 1,00    | 1,85  | 1,00  | 1,00   | 1,62  | 1,00  |   | 1,00     | 1,55  | 1,00  |   | 1,00     | 1,53  | 1,00  | 1,00          | 1,58  | 1,00  |
| Shop Assistant   | 1,14           | 1,70  | 1,25              |   | 1,14    | 2,08  | 1,12  | 1,08   | 1,79  | 1,11  |   | 1,15     | 1,92  | 1,24  |   | 1,41     | 1,88  | 1,23  | 1,18          | 1,87  | 1,19  |
| Doctor           | 2,97           | 3,65  | 2,68              |   | 2,59    | 4,35  | 2,35  | 2,33   | 3,79  | 2,35  |   | 4,06     | 4,71  | 3,03  |   | 3,50     | 4,30  | 2,81  | 3,03          | 4,14  | 2,63  |
| Cabinet Minister | 11,00          | 7,05  | 5,18              |   | 11,05   | 7,70  | 4,16  | 13,68  | 8,58  | 5,31  |   | 13,56    | 7,67  | 4,94  |   | 9,67     | 5,90  | 3,85  | 11,69         | 7,32  | 4,65  |
| Chairman         | 12,19          | 8,22  | 6,03              |   | 15,28   | 10,03 | 5,41  | 12,89  | 9,03  | 5,59  |   | 13,66    | 8,41  | 5,42  |   | 10,66    | 7,81  | 5,10  | 12,84         | 8,67  | 5,50  |
| Mean High Income | 7,35           | 5,96  | 4,37              |   | 7,59    | 6,95  | 3,75  | 7,44   | 6,65  | 4,11  |   | 9,09     | 6,72  | 4,33  |   | 7,12     | 5,83  | 3,81  | 7,69          | 6,41  | 4,07  |
| Mean Low Income  | 1,07           | 1,52  | 1,12              |   | 1,07    | 1,96  | 1,06  | 1,04   | 1,70  | 1,05  |   | 1,07     | 1,73  | 1,11  |   | 1,19     | 1,70  | 1,11  | 1,09          | 1,72  | 1,09  |
| Mean High/Low    | 6,89           | 3,92  | 3,92              | _ | 7,12    | 3,54  | 3,54  | 7,16   | 3,91  | 3,91  | _ | 8,47     | 3,89  | 3,89  | _ | 5,99     | 3,43  | 3,43  | 7,08          | 3,73  | 3,73  |
| 2009 n           |                | 1091  |                   |   |         | 732   |       |        | 787   |       |   |          | 1013  |       |   |          | 774   |       |               | 4397  |       |
| Unskilled Worker | 1,00           | 1,36  | 1,00              |   | 1,00    | 1,67  | 1,00  | 1,00   | 1,55  | 1,00  |   | 1,00     | 1,34  | 1,00  |   | 1,00     | 1,65  | 1,00  | 1,00          | 1,51  | 1,00  |
| Shop Assistant   | 1,04           | 1,51  | <u>5</u> 1,11     |   | 1,07    | 1,82  | 1,09  | 0,90   | 1,55  | 1,00  |   | 1,01     | 1,45  | 1,08  |   | 1,17     | 1,85  | 1,12  | 1,03          | 1,63  | 1,08  |
| Doctor           | 3,54           | 3,42  | 2,52              |   | 3,02    | 4,16  | 2,50  | 3,52   | 3,77  | 2,43  |   | 2,76     | 2,88  | 2,15  |   | 5,43     | 5,31  | 3,21  | 3,55          | 3,83  | 2,54  |
| Cabinet Minister | 9,68           | 4,86  | ටි 3,58           |   | 17,63   | 7,71  | 4,63  | 12,18  | 6,52  | 4,21  |   | 9,84     | 5,30  | 3,95  |   | 9,76     | 5,90  | 3,57  | 11,48         | 5,98  | 3,97  |
| Chairman         | 9,34           | 5,98  | <u></u> 4,40      |   | 20,41   | 9,15  | 5,49  | 14,40  | 8,43  | 5,44  |   | 7,60     | 5,12  | 3,82  |   | 14,34    | 7,85  | 4,76  | 12,45         | 7,14  | 4,74  |
| Mean High Income | 6,84           | 4,63  | ⊇ 3,41            |   | 10,28   | 6,64  | 3,99  | 8,51   | 5,92  | 3,82  |   | 5,91     | 4,28  | 3,19  |   | 9,13     | 6,26  | 3,79  | 7,98          | 5,47  | 3,63  |
| Mean Low Income  | 1,02           | 1,43  | <sup>U</sup> 1,05 |   | 1,03    | 1,74  | 1,04  | 0,95   | 1,55  | 1,00  |   | 1,00     | 1,39  | 1,04  |   | 1,08     | 1,75  | 1,06  | 1,02          | 1,57  | 1,04  |
| Mean High/Low    | 6,71           | 3,24  | 3,24              |   | 9,95    | 3,82  | 3,82  | 8,99   | 3,82  | 3,82  |   | 5,89     | 3,07  | 3,07  |   | 8,43     | 3,58  | 3,58  | 7,85          | 3,49  | 3,49  |

Table 2 Analysis of Variance - five CEE countries in three observed years

| 1992                       | Sum of Squares | df   | Mean Square | F      | Sig.        |
|----------------------------|----------------|------|-------------|--------|-------------|
| Variance Between Countries | 7,452          | 4    | 1,863       | 8,175  | < 0,001 *** |
| Variance Within Countries  | 893,077        | 3919 | 0,228       |        |             |
| Total                      | 900,529        | 3923 |             |        |             |
| 1999                       | Sum of Squares | df   | Mean Square | F      | Sig.        |
| Variance Between Countries | 14,772         | 4    | 3,693       | 15,464 | < 0,001 *** |
| Variance Within Countries  | 1171,149       | 4904 | 0,239       |        |             |
| Total                      | 1185,921       | 4908 |             |        |             |
| 2009                       | Sum of Squares | df   | Mean Square | F      | Sig.        |
| Variance Between Countries | 35,322         | 4    | 8,831       | 33,079 | < 0,001 *** |
| Variance Within Countries  | 1172,446       | 4392 | 0,267       |        |             |
| Total                      | 1207,768       | 4396 |             |        |             |

Dependent variable: logarithm of legitimate income inequality

p < 0.05 \*; p < 0.01 \*\*; p < 0.001 \*\*\*

Table 3 Repeated measures ANOVA - Tests of Between-Countries effects in combinations of different years

Dependent variable: logarithm of legitimate income inequality

| 1992-2009                  | Sum of Squares | df  | F     | Sig.       |
|----------------------------|----------------|-----|-------|------------|
| Variance Between Countries | 23,166         | 4   | 6,126 | < 0,001*** |
| Error                      | 143,703        | 152 |       |            |
| 1999-2009                  | Sum of Squares | df  | F     | Sig.       |
| Variance Between Countries | 16,781         | 4   | 3,07  | 0,018*     |
| Error                      | 200,853        | 147 |       |            |
| 1992-1999                  | Sum of Squares | df  | F     | Sig.       |
| Variance Between Countries | 6,537          | 4   | 1,388 | 0,241      |
| Error                      | 167,224        | 142 |       |            |
| 1992-1999-2009             | Sum of Squares | df  | F     | Sig.       |
| Variance Between Countries | 13,522         | 4   | 2,345 | 0,058      |
| Error                      | 198,894        | 138 |       |            |

p < 0,05 \*; p < 0,01 \*\*; p < 0,001 \*\*\*
### Table 4 Czech Republic - results of OLS regression of individual level variables

Highlighted are un-standardized coefficients, and (standard errors) for statistically significant effects; dependent variable is a logarithm of legitimate income inequality; independent variables are centered on the mean; columns M1 through M6 (fully specified model) progressively include additional dimensions of individual level effects; data for models M1 through M6 are pooled from different years; columns 1992, 1999, and 2009 present results for the full model (M6) in individual years.

|                      | Variable/Model(Mx)                  | M1           | M2       | M3       | M4       | M5       | Μ        | 6       | 19       | 92       | 199      | 9       | 200      | )9      |
|----------------------|-------------------------------------|--------------|----------|----------|----------|----------|----------|---------|----------|----------|----------|---------|----------|---------|
| year                 | 1992                                | -,218***     | -,227*** | -,233*** | -,234*** | -,233*** | -,225*** | (0,023) |          |          |          |         |          |         |
| •                    | 2009                                | -,178***     | ,172***  | -,179*** | -,179*** | -,179*** | -,186*** | (0,019) |          |          |          |         |          |         |
| demography           | sex                                 |              | ,020     | ,005     | ,003     | ,002     | ,012     | (0,023) | ,003     | (0,034)  | ,001     | (0,026) | ,018     | (0,027) |
|                      | marital status                      |              | ,042*    | ,021     | ,023     | ,021     | -,002    | (0,019) | -,039    | (0,041)  | ,036     | (0,028) | -,047    | (0,03)  |
|                      | age                                 |              | ,004***  | ,005***  | ,006***  | ,005***  | ,004***  | (0,023) | ,008***  | (0,002)  | ,003**   | (0,001) | ,005**   | (0,001) |
|                      | education (yrs)                     |              | ,023***  | ,009**   | ,008*    | ,008*    | ,008**   | (0,019) | ,016*    | (0,007)  | ,000     | (0,004) | ,015*    | (0,007) |
| material &           | self-positioning                    |              |          | ,023***  | ,019***  | ,019***  | ,019***  | (0,005) | ,020     | (0,011)  | ,016*    | (0,007) | ,023*    | (0,01)  |
| social position      | self-employment                     |              |          | ,012     | ,001     | ,001     | -,010    | (0,031) | ,115     | (0,076)  | ,003     | (0,043) | -,039    | (0,056) |
|                      | supervisor                          |              |          | -,002    | -,004    | -,001    | -,001    | (0,025) | ,008     | (0,04)   | ,005     | (0,039) | -,009    | (0,037) |
|                      | works for government                |              |          | -,011    | -,012    | -,013    | -,010    | (0,035) | ,011     | (0,056)  | ,018     | (0,043) | ,015     | (0,039) |
|                      | employed                            |              |          | ,045     | ,043     | ,041     | ,030     | (0,025) | ,028     | (0,053)  | -,027    | (0,041) | ,100*    | (0,032) |
|                      | family income (ln)                  |              |          | ,048*    | ,045*    | ,042*    | ,036     | (0,021) | -,037    | (0,04)   | ,072*    | (0,033) | ,019     | (0,051) |
|                      | union membership                    |              |          | ,035     | ,038     | ,039     | ,016     | (0,021) | ,004     | (0,035)  | ,019     | (0,027) | ,045     | (0,052) |
|                      | ISEI                                |              |          | ,101***  | ,086**   | ,087**   | ,097***  | (0,026) | ,122*    | (0,058)  | ,093*    | (0,037) | ,069     | (0,052) |
|                      | retired                             |              |          | ,034     | ,031     | ,032     | ,026     | (0,033) | ,016     | (0,076)  | ,031     | (0,047) | ,018     | (0,066) |
|                      | student                             |              |          | ,182***  | ,170**   | ,161**   | ,162**   | (0,048) | ,300*    | (0, 148) | ,133     | (0,086) | ,190**   | (0,013) |
| ideological          | government's role in rec            | listribution |          |          | ,036***  | ,032***  | ,039***  | (0,008) | ,037***  | (0,017)  | ,029*    | (0,012) | ,061***  | (0,017) |
| stance               | higher taxes for the rich           |              |          |          | ,001     | -,002    | ,004     | (0,011) | ,035     | (0,025)  | ,016     | (0,016) | -,013    | (0,029) |
|                      | religiosity                         |              |          |          | -,003    | -,005    | -,003    | (0,016) | -,028    | (0,046)  | -,011    | (0,024) | ,022     | (0,016) |
| requirements         | knowing the right peopl             | e            |          |          | 0,02     | 0,02     | ,006     | (0,008) | -,004    | (0,017)  | -,002    | (0,011) | ,024     | (0,012) |
| for success          | having a wealthy family             | ,            |          |          | 0,02     | 0,01     | ,005     | (0,006) | -,006    | (0,016)  | ,004     | (0,009) | ,004     | (0,011) |
| background           | income differences are t            | oo high      |          |          |          | ,004     | ,018*    | (0,009) | ,034     | (0,018)  | ,026     | (0,015) | -,007    | (0,021) |
| sensitiveness        | conflicts: rich vs. poor            |              |          |          |          | ,025*    | ,019     | (0,011) | ,063*    | (0,025)  | ,013     | (0,015) | ,011     | (0,024) |
|                      | conflicts: work vs. mid             |              |          |          |          | ,011     | ,007     | (0,013) | -,030    | (0,032)  | -,009    | (0,022) | ,045     | (0,021) |
|                      | conflicts man vs. work              |              |          |          |          | ,008     | ,021     | (0,011) | ,067***  | (0,026)  | ,015     | (0,017) | ,002     | (0,028) |
| perception           | perceived level of intequ           | ality        |          |          |          |          | ,373***  | (0,016) | ,493***  | (-0,044) | ,352***  | (0,024) | ,359***  | (0,013) |
|                      | Constant (1999)                     | 1,359***     | 1,326*** | 1,298*** | 1,302*** | 1,305*** | 1,326*** | (0,032) | 1,145*** | (-0,069) | 1,338*** | (0,045) | 1,116*** | (0,042) |
|                      | $R^2$ (adjusted. $R^2$ ) $\ddot{O}$ | 4,20%        | 7,88%    | 10,40%   | 11,20%   | 11,54%   | 25,50%   | (24,7%) | 33%      | (30,0%)  | 21%      | (19,9%) | 24%      | (22,9%) |
|                      | number of cases                     | 3710         | 3710     | 3710     | 3710     | 3710     | 371      | 0       | 67       | 8        | 183      | 34      | 120      | )5      |
| p < 0,05 *; p < 0,01 | 1 **; p < 0,001 *** DED             |              |          |          |          |          |          |         |          |          |          |         |          |         |

### Table 5 Hungary - results of OLS regression of individual level variables

Highlighted are un-standardized coefficients, and (standard errors) for statistically significant effects; dependent variable is a logarithm of legitimate income inequality; independent variables are centered on the mean; columns M1 through M6 (fully specified model) progressively include additional dimensions of individual level effects; data for models M1 through M6 are pooled from different years; columns 1992, 1999, and 2009 present results for the full model (M6) in individual years.

|                      | Variable/Model(Mx)             | M1 M           | 12 M     | I3 M     | [4 M     | [5       | M6       |         | 1992     |          | 1999     |          | 2009     |          |
|----------------------|--------------------------------|----------------|----------|----------|----------|----------|----------|---------|----------|----------|----------|----------|----------|----------|
| year                 | 1992                           | -,221***       | -,218*** | -,210*** | -,213*** | -,212*** | -,220*** | (0,03)  |          |          |          |          |          |          |
| -                    | 2009                           | ,051           | ,048     | ,054*    | ,051     | ,049     | ,046     | (0,027) |          |          |          |          |          |          |
| demography           | sex                            |                | ,043*    | ,048*    | ,044*    | ,042*    | ,040     | (0,021) | -,018    | (0,029)  | ,038     | (0,038)  | ,089*    | (0,045)  |
|                      | marital status                 |                | -,022    | -,030    | -,023    | -,019    | -,025    | (0,023) | -,016    | (0,034)  | ,038     | (0,038)  | -,049    | (0,049)  |
|                      | age                            |                | ,005***  | ,006***  | ,006***  | ,006***  | ,005***  | (0,001) | ,004**   | (0,001)  | ,002**   | (0,002)  | ,004     | (0,002)  |
|                      | education (yrs)                |                | ,040***  | ,026***  | ,024***  | ,023***  | ,020***  | (0,005) | ,022**   | (0,007)  | ,010*    | (0,01)   | ,013     | (0,01)   |
| material &           | self-positioning               |                |          | ,007     | ,003     | ,000     | ,003     | (0,007) | ,015     | (0,01)   | ,012     | (0,012)  | -,023    | (0,017)  |
| social position      | self-employment                |                |          | -,026    | -,029    | -,030    | -,050    | (0,04)  | ,070     | (0,073)  | ,058     | (0,058)  | -,204*   | (0,092)  |
|                      | supervisor                     |                |          | ,087*    | ,084*    | ,083*    | ,070     | (0,037) | ,055     | (0,044)  | ,063     | (0,063)  | ,167     | (0,11)   |
|                      | works for government           |                |          | -,030    | -,028    | -,029    | -,022    | (0,031) | -,002    | (0,038)  | ,074     | (0,074)  | -,023    | (0,072)  |
|                      | employed                       |                |          | -,017    | -,022    | -,021    | -,020    | (0,03)  | -,078    | (0,05)   | ,057     | (0,057)  | ,035     | (0,065)  |
|                      | family income (ln)             |                |          | ,023     | ,019     | ,017     | ,021     | (0,015) | ,004     | (0,016)  | ,041     | (0,041)  | ,126*    | (0,051)  |
|                      | union membership               |                |          | ,029     | ,034     | ,028     | ,026     | (0,028) | ,046     | (0,037)  | ,042     | (0,042)  | ,045     | (0,081)  |
|                      | ISEI                           |                |          | ,100**   | ,097**   | ,097**   | ,095**   | (0,036) | ,102*    | (0,051)  | ,069     | (0,069)  | ,116     | (0,073)  |
|                      | retired                        |                |          | -,046    | -,050    | -,048    | -,049    | (0,042) | -,032    | (0,062)  | ,079     | (0,079)  | -,044    | (0,087)  |
|                      | student                        |                |          | ,046     | ,040     | ,039     | ,048     | (0,066) | -,072    | (0,088)  | ,022     | (0,022)  | ,031     | (0, 14)  |
| ideological          | government's role in re        | distribution   |          |          | ,048***  | ,043***  | ,048***  | (0,012) | ,053**   | (0,017)  | ,026     | (0,026)  | ,046     | (0,026)  |
| stance               | higher taxes for the ricl      | 1              |          |          | ,011     | ,011     | ,021     | (0,013) | ,002     | (0,019)  | ,125     | (0, 125) | ,012     | (0,027)  |
|                      | religiosity                    |                |          |          | -,033    | -,037    | -,054    | (0,057) | ,001     | (0,002)  | -,032    | (0,052)  | -,026    | (0,064)  |
| requirements         | knowing the right peop         | le             |          |          | -,022*   | -,025*   | -,019    | (0,01)  | -,016    | (0,015)  | ,017     | (0,017)  | -,013    | (0,021)  |
| for success          | having a wealthy famil         | у              |          |          | ,014     | ,011     | ,013     | (0,009) | ,000     | (0,014)  | ,016     | (0,016)  | ,024     | (0,02)   |
| background           | income differences are         | too high       |          |          |          | ,009     | ,025     | (0,014) | ,021     | (0,016)  | ,028     | (0,028)  | ,087     | (0,042)  |
| sensitiveness        | conflicts: rich vs. poor       |                |          |          |          | -,024    | -,017    | (0,015) | -,006    | (0,022)  | ,030     | (0,03)   | -,089*   | (0,036)  |
|                      | conflicts: working class       | s vs. middle c | lass     |          |          | ,037*    | ,026     | (0,016) | ,018     | (0,023)  | ,027     | (0,027)  | ,096**   | (0,031)  |
|                      | conflicts: management          | vs. workers    |          |          |          | ,043**   | ,050**   | (0,015) | ,043*    | (0,021)  | ,027     | (0,027)  | ,053     | (0,031)  |
| perception           | perceived level of igeq        | uality         |          |          |          |          | ,287***  | (0,029) | ,328***  | (0,035)  | ,254***  | (0,054)  | ,234***  | (0,048)  |
|                      | Constant (1999) 🚊              | 1,250***       | 1,242*** | 1,258*** | 1,276*** | 1,280*** | 1,320*** | (0,07)  | 1,076*** | (0,054)  | 1,281*** | (0,062)  | 1,304*** | (0,096)  |
|                      | $R^2$ (adjusted. $R^2$ ) $\Im$ | 4,18%          | 9,29%    | 10,30%   | 11,17%   | 11,83%   | 17,91%   | (17,3%) | 21%      | (19,23%) | 15%      | (13,41%) | 14%      | (12,14%) |
|                      | number of cases $\frac{2}{2}$  | 3458           | 3458     | 3458     | 3458     | 3458     | 34       | 58      | 12       | 50       | 12       | 08       | 10       | 10       |
| p < 0,05 *; p < 0,01 | l **; p < 0,001 *** D          |                |          |          |          |          |          |         |          |          |          |          |          |          |

### Table 6 Poland - results of OLS regression of individual level variables

Highlighted are un-standardized coefficients, and (standard errors) for statistically significant effects; dependent variable is a logarithm of legitimate income inequality; independent variables are centered on the mean; columns M1 through M6 (fully specified model) progressively include additional dimensions of individual level effects; data for models M1 through M6 are pooled from different years; columns 1992, 1999, and 2009 present results for the full model (M6) in individual years.

|                      | Variable/Model(Mx)                          | M1           | M2       | M3       | M4       | M5       | Μ        | 6       | 19       | 92       | 199      | 9        | 20       | 09      |
|----------------------|---|--------------|----------|----------|----------|----------|----------|---------|----------|----------|----------|----------|----------|---------|
| year                 | 1992  | -,314***     | -,309*** | -,316*** | -,316*** | -,317*** | -,320*** | (0,023) |          |          |          |          |          |         |
| -                    | 2009  | -,024        | -,022    | -,047    | -,044    | -,043    | -,047    | (0,024) |          |          |          |          |          |         |
| demography           | sex   |              | ,066**   | ,055**   | ,052*    | ,051*    | ,042*    | (0,02)  | -,012    | (0,027)  | ,069     | (0,044)  | ,092*    | (0,037) |
|                      | marital status                              |              | -,015    | -,025    | -,018    | -,016    | -,034    | (0,021) | -,002    | (0,037)  | -,067    | (0,038)  | -,071    | (0,038) |
|                      | age   |              | ,006***  | ,007***  | ,007***  | ,007***  | ,006***  | (0,001) | ,005***  | (0,001)  | ,004*    | (0,002)  | ,009***  | (0,002) |
|                      | education (yrs)                             |              | ,045***  | ,032***  | ,029***  | ,029***  | ,027***  | (0,004) | ,033***  | (0,008)  | ,016     | (0,009)  | ,031**   | (0,009) |
| material &           | self-positioning                            |              |          | -,009    | -,011    | -,011    | -,007    | (0,006) | -,014    | (0,007)  | -,003    | (0,012)  | ,003     | (0,014) |
| social position      | self-employment                             |              |          | ,014     | ,002     | ,001     | ,008     | (0,029) | ,050     | (0,045)  | -,030    | (0,077)  | ,016     | (0,052) |
|                      | supervisor                                  |              |          | ,046     | ,040     | ,041     | ,039     | (0,027) | ,037     | (0,036)  | ,021     | (0,067)  | ,071     | (0,047) |
|                      | works for government                        |              |          | -,013    | -,013    | -,012    | -,002    | (0,024) | ,019     | (0,033)  | -,076    | (0,062)  | ,047     | (0,049) |
|                      | employed                                    |              |          | ,030     | ,028     | ,029     | ,017     | (0,033) | ,002     | (0,046)  | ,059     | (0,061)  | ,028     | (0,064) |
|                      | family income (ln)                          |              |          | ,061***  | ,048**   | ,048**   | ,049**   | (0,016) | ,062*    | (0,025)  | ,027     | (0,032)  | ,060     | (0,033) |
|                      | union membership                            |              |          | -,007    | ,005     | ,006     | -,001    | (0,029) | -,002    | (0,038)  | -,025    | (0,074)  | ,043     | (0,071) |
|                      | ISEI  |              |          | ,097**   | ,091*    | ,091*    | ,080***  | (0,034) | ,083     | (0,06)   | ,098     | (0,072)  | ,028     | (0,064) |
|                      | retired                                     |              |          | -,016    | -,006    | -,006    | ,006     | (0,036) | -,020    | (0,055)  | ,038     | (0,077)  | -,006    | (0,07)  |
|                      | student                                     |              |          | ,173**   | ,148**   | ,150**   | ,127*    | (0,052) | ,144     | (0, 101) | -,042    | (0, 107) | ,243**   | (0,087) |
| ideological          | government's role in re                     | distribution |          |          | ,065***  | ,053***  | ,061***  | (0,013) | ,071***  | (0,018)  | ,028     | (0,028)  | ,063**   | (0,021) |
| stance               | higher taxes for the rich                   | 1            |          |          | ,006     | ,004     | ,012     | (0,016) | -,004    | (0,018)  | ,008     | (0,029)  | ,058*    | (0,028) |
|                      | religiosity                                 |              |          |          | -,007    | -,007    | -,012    | (0,031) | -,077    | (0,044)  | -,019    | (0,065)  | ,081     | (0,052) |
| requirements         | knowing the right peop                      | le           |          |          | ,004     | ,003     | ,005     | (0,012) | ,009     | (0,016)  | ,029     | (0,029)  | -,014    | (0,023) |
| for success          | having a wealthy family                     | у            |          |          | -,017    | -,018    | -,016    | (0,01)  | -,018    | (0,014)  | -,037    | (0,025)  | ,003     | (0,017) |
| background           | income differences are                      | too high     |          |          |          | ,023     | ,030*    | (0,013) | ,023     | (0,019)  | ,043     | (0,03)   | ,032     | (0,024) |
| sensitiveness        | conflicts: rich vs. poor                    |              | _        |          |          | ,007     | ,005     | (0,014) | ,017     | (0,021)  | -,029    | (0,029)  | ,028     | (0,032) |
|                      | conflicts: working class                    | s vs. middle | class    |          |          | ,011     | ,008     | (0,016) | ,013     | (0,02)   | ,028     | (0,029)  | -,038    | (0,035) |
|                      | conflicts: management                       | vs. workers  |          |          |          | -,013    | -,002    | (0,016) | -,018    | (0,022)  | ,031     | (0,03)   | -,004    | (0,029) |
| perception           | perceived level of gnequ                    | uality       |          |          |          |          | ,272***  | (0,029) | ,249***  | (0,052)  | ,293***  | (0,05)   | ,271***  | (0,034) |
|                      | Constant (1999) $\underline{\underline{a}}$ | 1,353***     | 1,330*** | 1,329*** | 1,333*** | 1,331*** | 1,351*** | (0,043) | 1,087*** | (0,062)  | 1,364*** | (0,086)  | 1,186*** | (0,073) |
|                      | $R^2$ (adjusted. $R^2$ ) $\breve{O}$        | 6,45%        | 12,32%   | 13,68%   | 14,94%   | 15,09%   | 23,15%   | (22,6%) | 20%      | (18,8%)  | 19%      | (16,9%)  | 21%      | (19,2%) |
| 0.05                 | number of cases                             | 4034         | 4034     | 4034     | 4034     | 4034     | 403      | 34      | 16.      | 36       | 113      | 35       | 12       | 53      |
| p < 0,05 *; p < 0,01 | **; p < 0,001 ***                           |              |          |          |          |          |          |         |          |          |          |          |          |         |

### Table 7 Slovakia - results of OLS regression of individual level variables

Highlighted are un-standardized coefficients, and (standard errors) for statistically significant effects; dependent variable is a logarithm of legitimate income inequality; independent variables are centered on the mean; columns M1 through M6 (fully specified model) progressively include additional dimensions of individual level effects; data for models M1 through M6 are pooled from different years; columns 1992, 1999, and 2009 present results for the full model (M6) in individual years.

|                        | Variable/Model(Mx)                         | M1           | M2       | M3       | M4       | M5       | M        | 6       | 19       | 92       | 199      | 9       | 20       | )9      |
|------------------------|--|--------------|----------|----------|----------|----------|----------|---------|----------|----------|----------|---------|----------|---------|
| year                   | 1992                                       | -,365***     | -,367*** | -,375*** | -,374*** | -,375*** | -,366*** | (0,027) |          |          |          |         |          |         |
|                        | 2009                                       | -,246***     | -,253*** | -,252*** | -,252*** | -,251*** | -,248*** | (0,02)  |          |          |          |         |          |         |
| demography             | sex  |              | 0,00     | -,001    | -,008    | -,007    | -,011    | (0,019) | -,046    | (0,042)  | -,034    | (0,031) | ,018     | (0,029) |
|                        | marital status                             |              | -,012    | -,025    | -,021    | -,021    | -,028    | (0,022) | -,019    | (0,049)  | -,027    | (0,035) | -,032    | (0,034) |
|                        | age  |              | ,002***  | ,003***  | ,004***  | ,004***  | ,003**   | (0,001) | ,003     | (0,002)  | ,002     | (0,002) | ,004*    | (0,001) |
|                        | education (yrs)                            |              | ,029***  | ,021***  | ,019***  | ,019***  | ,018***  | (0,005) | ,024***  | (0,009)  | ,020**   | (0,007) | ,017*    | (0,008) |
| material &             | self-positioning                           |              |          | ,010     | ,007     | ,007     | ,009     | (0,006) | -,006    | (0,013)  | ,000     | (0,009) | ,025*    | (0,011) |
| social position        | self-employment                            |              |          | ,005     | -,004    | -,008    | -,032    | (0,035) | ,103     | (0, 103) | -,098    | (0,069) | -,052    | (0,044) |
|                        | supervisor                                 |              |          | ,016     | ,011     | ,010     | ,006     | (0,025) | -,032    | (0,051)  | ,022     | (0,047) | -,022    | (0,045) |
|                        | works for government                       |              |          | ,022     | ,025     | ,024     | ,005     | (0,027) | ,016     | (0,07)   | -,044    | (0,05)  | ,008     | (0,034) |
|                        | employed                                   |              |          | -,042    | -,043    | -,044    | -,040    | (0,029) | ,045     | (0,066)  | ,008     | (0,051) | -,106**  | (0,044) |
|                        | family income (ln)                         |              |          | ,049*    | ,044     | ,042     | ,052*    | (0,023) | ,017     | (0,053)  | ,086*    | (0,038) | ,048     | (0,036) |
|                        | union membership                           |              |          | ,041     | ,044     | ,044     | ,028     | (0,026) | ,032     | (0,047)  | -,045    | (0,043) | ,127*    | (0,05)  |
|                        | ISEI                                       |              |          | ,029     | ,021     | ,020     | ,021     | (0,031) | ,064     | (0,075)  | -,045    | (0,059) | ,047     | (0,046) |
|                        | retired                                    |              |          | -,025    | -,028    | -,031    | -,017    | (0,041) | ,049     | (0, 101) | ,026     | (0,07)  | -,092    | (0,056) |
| -                      | student                                    |              |          | ,043     | ,042     | ,046     | ,017     | (0,052) | ,289     | (0, 176) | ,060     | (0,088) | -,095    | (0,084) |
| ideological            | government's role in re                    | distribution |          |          | ,041***  | ,036***  | ,042***  | (0,01)  | ,090***  | (0,023)  | ,025     | (0,015) | ,045**   | (0,016) |
| stance                 | higher taxes for the rich                  | 1            |          |          | ,006     | ,004     | ,004     | (0,013) | ,013     | (0,032)  | ,013     | (0,022) | ,000     | (0,019) |
|                        | religiosity                                |              |          |          | -,020    | -,017    | -,025    | (0,025) | -,085    | (0, 101) | -,065    | (0,044) | ,012     | (0,034) |
| requirements for       | knowing the right peop                     | le           |          |          | -,004    | -,005    | ,003     | (0,011) | ,020     | (0,021)  | ,006     | (0,018) | -,001    | (0,017) |
| success                | having a wealthy family                    | у            |          |          | -,006    | -,007    | -,003    | (0,008) | -,017    | (0,018)  | -,015    | (0,014) | ,012     | (0,013) |
| background             | income differences are                     | too high     |          |          |          | ,022     | ,034*    | (0,014) | -,026    | (0,029)  | ,071**   | (0,023) | ,031     | (0,022) |
| sensitiveness          | conflicts: rich vs. poor                   |              |          |          |          | -,024    | -,024    | (0,013) | ,009     | (0,032)  | -,027    | (0,021) | -,038    | (0,02)  |
|                        | conflicts: working class                   | s vs. middle | class    |          |          | ,029     | ,015     | (0,017) | -,014    | (0,037)  | -,017    | (0,027) | ,049*    | (0,023) |
|                        | conflicts: management                      | vs. workers  |          |          |          | ,031*    | ,037**   | (0,013) | ,009     | (0,034)  | ,055**   | (0,021) | ,026     | (0,02)  |
| perception             | perceived level offinequ                   | uality       |          |          |          |          | ,260***  | (0,019) | ,228***  | (0,055)  | ,211***  | (0,029) | ,312***  | (0,031) |
|                        | Constant (1999) 🛓                          | 1,357***     | 1,367*** | 1,390*** | 1,407*** | 1,409*** | 1,422*** | (0,04)  | 1,047*** | (0,119)  | 1,445*** | (0,062) | 1,194*** | (0,056) |
|                        | R <sup>2</sup> (adjusted. R <sup>2</sup> ) | 8,76%        | 11,56%   | 12,47%   | 13,28%   | 13,81%   | 20,64%   | (19,9%) | 21%      | (16,1%)  | 10%      | (7,7%)  | 21%      | (18,9%) |
|                        | number of cases 🚊                          | 2628         | 2628     | 2628     | 2628     | 2628     | 262      | 8       | 42       | .3       | 108      | 32      | 11:      | 59      |
| p < 0,05 *; p < 0,01 * | **; p < 0,001 *** 0                        |              |          |          |          |          |          |         |          |          |          |         |          |         |

#### Table 8 Slovenia - results of OLS regression of individual level variables

Highlighted are un-standardized coefficients, and (standard errors) for statistically significant effects; dependent variable is a logarithm of legitimate income inequality; independent variables are centered on the mean; columns M1 through M6 (fully specified model) progressively include additional dimensions of individual level effects; data for models M1 through M6 are pooled from different years; columns 1992, 1999, and 2009 present results for the full model (M6) in individual years.

|                   | Variable/Model(Mx)                  | M1             | M2       | M3       | M4       | M5       | Me       | <u></u> | 199      | 2       | 199      | 9       | 200      | 9       |
|-------------------|-------------------------------------|----------------|----------|----------|----------|----------|----------|---------|----------|---------|----------|---------|----------|---------|
| year              | 1992                                | -,133***       | -,129*** | -,127*** | -,126*** | -,127*** | -,127*** | (0,021) |          |         |          |         |          |         |
|                   | 2009                                | ,040           | ,039     | ,041     | ,044     | ,045     | ,039     | (0,024) |          |         |          |         |          |         |
| demography        | sex                                 |                | ,022     | ,014     | ,011     | ,008     | ,003     | (0,02)  | -,025    | (0,032) | ,013     | (0,028) | ,013     | (0,035) |
|                   | marital status                      |                | ,025     | -,013    | -,006    | -,006    | -,024    | (0,021) | -,055    | (0,037) | -,016    | (0,034) | -,022    | (0,043) |
|                   | age                                 |                | ,007***  | ,007***  | ,007***  | ,007***  | ,006***  | (0,001) | ,006***  | (0,002) | ,007***  | (0,001) | ,006**   | (0,002) |
|                   | education (yrs)                     |                | ,023***  | ,009*    | ,008     | ,008     | ,007     | (0,004) | ,009     | (0,008) | ,015*    | (0,007) | ,001     | (0,007) |
| material & social | self-positioning                    |                |          | ,003     | ,001     | -,001    | ,010     | (0,006) | ,013     | (0,011) | ,010     | (0,009) | ,011     | (0,013) |
| position          | self-employment                     |                |          | -,110**  | -,108**  | -,112**  | -,098*   | (0,038) | -,122    | (0,083) | -,143*   | (0,062) | -,082    | (0,068) |
|                   | supervisor                          |                |          | ,053*    | ,049***  | ,050*    | ,049*    | (0,022) | ,047     | (0,051) | ,054     | (0,037) | ,058     | (0,043) |
|                   | works for government                | t              |          | ,017     | ,019     | ,017     | ,019     | (0,027) | ,040     | (0,037) | ,009     | (0,061) | -,024    | (0,063) |
|                   | employed                            |                |          | ,021     | ,023     | ,022     | ,011     | (0,03)  | -,020    | (0,055) | ,060     | (0,05)  | -,018    | (0,06)  |
|                   | family income (ln)                  |                |          | ,058**   | ,054**   | ,054**   | ,053**   | (0,016) | ,049     | (0,027) | ,048     | (0,029) | ,065*    | (0,03)  |
|                   | union membership                    |                |          | ,012     | ,021     | ,025     | ,012     | (0,021) | ,049     | (0,036) | ,004     | (0,033) | -,017    | (0,047) |
|                   | ISEI                                |                |          | ,066     | ,051     | ,047     | ,029     | (0,037) | ,017     | (0,071) | -,050    | (0,057) | ,066     | (0,056) |
|                   | retired                             |                |          | -,010    | -,002    | -,002    | -,014    | (0,036) | ,017     | (0,065) | -,050    | (0,055) | -,027    | (0,075) |
|                   | student                             |                |          | -,004    | -,013    | -,018    | ,009     | (0,046) | ,046     | (0,079) | ,081     | (0,084) | -,060    | (0,087) |
|                   | government's role in i              | redistributior | 1        |          | ,039**   | ,020     | ,031*    | (0,013) | ,035     | (0,019) | ,024     | (0,018) | ,033     | (0,027) |
| ideological       | higher taxes for the                |                |          |          | .009     | .005     | .017     |         | .016     |         | .017     |         | .024     |         |
| stance            | rich                                |                |          |          | ,005     | ,000     | ,017     | (0,015) | ,010     | (0,022) | ,017     | (0,022) | ,021     | (0,026) |
|                   | religiosity                         | _              |          |          | -,032    | -,029    | -,030    | (0,022) | -,042    | (0,04)  | -,043    | (0,035) | ,013     | (0,043) |
| requirements for  | knowing the right peo               | ple            |          |          | -,002    | -,003    | -,002    | (0,01)  | -,011    | (0,015) | -,010    | (0,017) | ,021     | (0,02)  |
| success           | having a wealthy fami               | ily            |          |          | -,013    | -,014    | -,007    | (0,009) | -,003    | (0,015) | ,006     | (0,013) | -,029    | (0,016) |
| background        | income differences ar               | e too high     |          |          |          | ,042**   | ,056***  | (0,012) | ,062**   | (0,018) | ,049*    | (0,02)  | ,053     | (0,031) |
| sensitiveness     | conflicts: rich vs. poor            | r              |          |          |          | ,006     | ,009     | (0,014) | ,013     | (0,023) | -,002    | (0,022) | ,023     | (0,027) |
|                   | conflicts: working cla              | ss vs. middle  | class    |          |          | ,010     | ,009     | (0,015) | -,023    | (0,024) | -,024    | (0,023) | ,077**   | (0,028) |
|                   | conflicts: managemen                | t vs. workers  | 5        |          |          | ,004     | ,011     | (0,012) | -,009    | (0,023) | ,043*    | (0,02)  | -,014    | (0,024) |
| perception        | perceived level of ine              | quality        |          |          |          |          | ,327***  | (0,02)  | ,336***  | (0,036) | ,334***  | (0,029) | ,308***  | (0,044) |
|                   | Constant (1999) $\ddot{\mathbf{U}}$ | 1,229***       | 1,197*** | 1,209*** | 1,225*** | 1,223*** | 1,251*** | (0,037) | 1,157*** | (0,063) | 1,233*** | (0,058) | 1,283*** | (0,071) |
|                   | $R^{-}$ (adjusted. $R^{-}$ )        | 2,40%          | 8,25%    | 9,98%    | 10,68%   | 11,14%   | 22,63%   | (22%)   | 24%      | (22%)   | 25%      | (23%)   | 20%      | (17,9%) |
|                   | number of cases $\underline{\neg}$  | 3110           | 3110     | 3110     | 3110     | 3110     | 311      | 0       | 104      | 9       | 100      | 6       | 106      | 5       |

p < 0.05 \*; p < 0.01 \*\*; p < 0.001 \*\*\*

Table 9 Individual effects by survey waves in a pooled regression (constant Slovenia)

Results of OLS regression of individual level variables (pooled data for countries for each of the observed years, highlighted are un-standardized coefficients, and (standard errors) for statistically significant effects; dependent variable is a logarithm of legitimate income inequality; independent variables are centered on the mean; Columns 1992, 1999, and 2009 present results for the full model in individual years.

|                    |  | 1992     |         | 1999     |         | 20       | 09      |
|--------------------|--|----------|---------|----------|---------|----------|---------|
| country            | Czech Republic                             | ,032     | (0,024) | ,131***  | (0,023) | -,080**  | (0,026) |
|                    | Hungary                                    | -,069**  | (0,023) | ,035     | (0,025) | ,047     | (0,026) |
|                    | Poland                                     | -,062**  | (0,021) | ,144***  | (0,023) | ,065**   | (0,023) |
|                    | Slovakia                                   | -,105*** | (0,027) | ,136***  | (0,023) | -,142*** | (0,024) |
| demography         | sex  | -,014    | (0,015) | ,020     | (0,015) | ,047**   | (0,016) |
|                    | marital status                             | -,011    | (0,018) | -,014    | (0,015) | -,041*   | (0,016) |
|                    | age  | ,005***  | (0,001) | ,004***  | (0,001) | ,005***  | (0,001) |
|                    | education (yrs)                            | ,023***  | (0,004) | ,011***  | (0,003) | ,012***  | (0,003) |
| material & social  | self-positioning                           | ,004     | (0,004) | ,006     | (0,004) | ,010     | (0,006) |
| position           | self-employment                            | ,024     | (0,027) | -,029    | (0,027) | -,052    | (0,027) |
|                    | supervisor                                 | ,030     | (0,021) | ,020     | (0,02)  | ,039     | (0,021) |
|                    | works for government                       | ,009     | (0,018) | -,040    | (0,024) | ,014     | (0,025) |
|                    | employed                                   | -,012    | (0,025) | ,002     | (0,021) | ,008     | (0,023) |
|                    | family income (ln)                         | ,021     | (0,011) | ,049***  | (0,013) | ,061***  | (0,016) |
|                    | union membership                           | ,024     | (0,016) | ,004     | (0,018) | ,040     | (0,025) |
|                    | ISEI                                       | ,079**   | (0,028) | ,057**   | (0,022) | ,078*    | (0,024) |
|                    | retired                                    | -,003    | (0,034) | -,001    | (0,027) | -,026    | (0,03)  |
|                    | student                                    | ,074     | (0,043) | ,072     | (0,044) | ,044     | (0,035) |
| ideological stance | government's role in redistribution        | ,059***  | (0,009) | ,028**   | (0,008) | ,055***  | (0,008) |
|                    | higher taxes for the rich                  | ,003     | (0,01)  | ,022*    | (0,011) | ,014     | (0,011) |
|                    | religiosity                                | -,036    | (0,027) | -,026    | (0,02)  | ,017     | (0,018) |
| requirements for   | knowing the right people                   | -,003    | (0,007) | -,007    | (0,007) | ,005     | (0,009) |
| success            | having a wealthy family                    | -,009    | (0,007) | ,001     | (0,006) | ,002     | (0,007) |
| background         | income differences are too high            | ,028**   | (0,008) | ,034**   | (0,01)  | ,023*    | (0,011) |
| sensitiveness      | conflicts: rich 🖉s. poor                   | ,014     | (0,01)  | -,004    | (0,012) | -,012    | (0,012) |
|                    | conflicts: workeng class vs. middle class  | -,003    | (0,011) | -,008    | (0,012) | ,049***  | (0,012) |
|                    | conflicts: management vs. workers          | ,016     | (0,01)  | ,040***  | (0,01)  | ,011     | (0,011) |
| perception         | perceived leve of inequality               | ,311***  | (0,024) | ,302***  | (0,021) | ,299***  | (0,019) |
|                    | Constant 🗄                                 | 1,130*** | (0,035) | 1,357*** | (0,031) | 1,237*** | (0,034) |
|                    | $\mathbf{R}^2$ (adjusted. $\mathbf{R}^2$ ) | 20,24%   | (19,8%) | 16,44%   | (16,1%) | 18,41%   | (18%)   |
|                    | number of cases                            | 50       | 36      | 62       | 265     | 57       | 02      |

p < 0,05 \*; p < 0,01 \*\*; p < 0,001 \*\*\*

Table 10 Changes in explained variance added by dimensions of individual effects

H2 – material self interest; H3 - ideological guiding principles; H4 – perception and reflection of society); values taken from Tables 4 to 8

| R <sup>2</sup> change     | CZ     | HU     | PL     | SK     | SL     |
|---------------------------|--------|--------|--------|--------|--------|
| M1 – time                 | 4,20%  | 4.18%  | 6,45%  | 8,76%  | 2,40%  |
| M2 – demography           | 3,68%  | 5,11%  | 5,87%  | 2,80%  | 5,85%  |
| M3 – social position (H2) | 2,52%  | 1,01%  | 1,36%  | 0,91%  | 1,73%  |
| M4 – ideology (H3)        | 0,80%  | 0,87%  | 1,26%  | 0,81%  | 0,70%  |
| M5 - sensitiveness (H4)   | 0,34%  | 0,66%  | 0,15%  | 0,53%  | 0,46%  |
| M6 – perception (H4)      | 13,96% | 6,08%  | 8,06%  | 6,83%  | 11,49% |
| sum                       | 25,50% | 17,91% | 23,15% | 20,64% | 22,63% |

Table 11 Multilevel random effects models of legitimate income inequality

Between (B) countries and groups effects, and within countries and groups (W) effects; (reference group for group constituting variables are Age (18-35), Education (primary), EGP (inactive))

M1 displays unspecified model with only time varying intercepts included; M2 controls for effects of group constituting variables; M3 displays effects of group-level effects; Models H2, H3, H4 display effects of variables tested in hypotheses H2, H3, and H4: M4 presents effects of changes in group-level and country-level variables when variance between groups and countries is controlled for; M5 presents model M4 without including variable Gini (W).

| Model                           | M1                       | M2            | M3                       | Model H2     | Model H3     | Model H4     | <b>M4</b>  | M5         |
|---------------------------------|--------------------------|---------------|--------------------------|--------------|--------------|--------------|------------|------------|
| Age                             |                          |               |                          |              |              |              |            |            |
| 18-35                           |                          |               |                          |              |              |              |            |            |
| 36-54                           |                          | 0,36***       | 0,23**                   | 0,24**       | 0,24**       | 0,24**       |            |            |
| 55-+                            |                          | 0,70***       | 0,60***                  | 0,63***      | 0,63***      | 0,62***      |            |            |
| Education                       |                          |               |                          |              |              |              |            |            |
| primary                         |                          |               |                          |              |              |              |            |            |
| secondary                       |                          | 0,33**        |                          |              |              |              |            |            |
| tertiary                        |                          | 0,69***       | 0,37***                  | 0,36***      | 0,365***     | 0,35***      |            |            |
| EGP socio-econ                  | omic status              |               |                          |              |              |              |            |            |
| inactive                        |                          |               |                          |              |              |              |            |            |
| working class                   |                          | 0,01          | -0,21*                   | -0,155       | -0,18        |              |            |            |
| middle class                    |                          | 0,35**        |                          |              | -0,04        |              |            |            |
| managerial class                |                          | 0,45***       | 0,03                     | 0,04         | 0,04         | 0,03         |            |            |
| group level                     |                          |               |                          |              |              |              |            |            |
| Sex (B)                         |                          |               |                          |              |              |              |            |            |
| Sex (W)                         |                          |               | 0,13***                  | 0,12**       | 0,12**       | 0,12**       | 0,07**     | 0,08**     |
| Family income (B)               | )                        |               | 0,14***                  | 0,165***     | 0,15***      | 0,17***      |            |            |
| Family income (W                | 7)                       |               | -0,15***                 | -0,145***    | -0,15***     | -0,13***     | -0,11***   | -0,11***   |
| Government redist               | tribution role (B)       | )             | 0,23***                  | 0,25***      | 0,23***      | 0,25***      | -          |            |
| Government redist               | tribution role (W        | )             | 0,075*                   | 0,08*        | 0,10*        | 0,08*        | 0,11***    | 0,11***    |
| Perceived inequali              | ty (B)                   |               | 0,43***                  | 0,41***      | 0,40***      | 0,41***      | -          |            |
| Perceived inequali              | ty (W)                   |               | 0,49***                  | 0,47***      | 0,46***      | 0,475***     | 0,42***    | 0,42***    |
| country level                   |                          |               |                          |              |              |              |            |            |
| material interest               | and potential r          | risk (Hypothe | sis H2)                  |              |              |              |            |            |
| GDP/C (B)                       |                          |               |                          |              |              |              |            |            |
| $(\text{GDP/C})^2$ (B)          |                          |               |                          |              |              |              |            |            |
| GDP growth (B)                  |                          |               |                          |              |              |              |            |            |
| Unemployment rat                | te (B)                   |               |                          |              |              |              |            |            |
| GDP/C (W)                       |                          |               |                          | -0,04        |              |              | -0,16+     |            |
| $(\text{GDP/C})^2$ (W)          |                          |               |                          |              |              |              | -0,01      | 0,01       |
| GDP growth (W)                  |                          |               |                          |              |              |              | 0,19**     | 0,085*     |
| Unemployment ra                 | ite (W)                  |               |                          | -0,07        |              |              | -0,12      | 0,05+      |
| ideological guid                | ing principles (         | (Hypothesis H | H3)                      |              |              |              |            |            |
| Religiosity (B)                 |                          |               |                          |              | -0,19        |              |            |            |
| Wealthy family (B               | 5)<br>                   | <b>()</b>     |                          |              | -0,14+       |              |            |            |
| Government's role               | e in redistribution      | n (B)         |                          |              | -0,11        |              |            | 0.00**     |
| Religiosity (W)                 |                          |               |                          |              | 0,04         |              |            | 0,09**     |
| Covernment's role               | V)<br>vin radiatribution |               |                          |              | -0,00        |              | -0,14      | 0,02       |
| Government s role               |                          | 1(w)          |                          |              | -0,12+       |              | -0,15      | -0,18+     |
| reflection of soc               | iety (Hypothes           | 18 H4)        |                          |              |              | 0.00         |            |            |
| Conflicts: rich vs. $C^{1}$ (D) | poor (B)                 |               |                          |              |              | 0,23+        |            |            |
| Gini (B)                        | ))                       |               |                          |              |              | 0,11*        |            |            |
| Social spending (E              | 3)<br>                   |               |                          |              |              | 0,15         |            |            |
| Cini (W)                        | poor (w)                 |               |                          |              |              | -0,04        | 0,02       |            |
| Social sponding (V              | <b>V</b>                 |               |                          |              |              | 0,04         | 0,23*      | 0.12**     |
| Social spending (v              | (v)                      |               |                          |              |              | -0,01        | 0,03       | -0,12**    |
| wave                            | 0 51 ***                 | 0.52***       | 0.00***                  | 0.00***      | 0.005***     | 0.02***      | 0.105      | 0.04       |
| year1992                        | -0,54 ***                | -0,52***      | -0,08***                 | -0,08***     | -0,095***    | -0,02***     |            | 0,04       |
| year1999                        | 0.07 ***                 | 0.06***       | $0,22^{****}$<br>0.12*** | 0.12***      | 0,24***      | 0,2/***      |            |            |
| year2009                        | 0,07 ***                 | 0,00****      | -0,13                    | -0,13****    | -0,143****   | -0,20****    | -0,13      | -0,10      |
| variance Compon                 | ents & (N)               | o o 1 -       | 0.00-                    | ~            | ~            | ~            |            |            |
| Country (5)                     | 0.009                    | 0.017         | 0.001                    | 0            | 0            | 0            |            |            |
| Groups(1/8)                     | 0.251                    | 0             | 0                        | 0            | 0            | 0            |            |            |
| 11me (492)                      | 0.7925                   | 0.8335        | 0.4765                   | 0,4/4        | 0,467        | 0,4/1        | -          |            |
| var(Residual)                   | 1,05(0,07)               | 0,85(0,05)    | 0,48(0,03)               | 0,47(0,03)   | 0,4/(0,03)   | 0,47(0,03)   | 278.20     | 290.22     |
| Log likelihood                  | -/11,05                  | -038,39       | -499,29                  | -494,68      | -495,15      | -494,/1      | -3/8,29    | -380,32    |
| walu cill"                      | 0701,34(3)               | 0472,73(10)   | 13239,39(18)             | 13401,01(20) | 13449,/3(24) | 134/0,93(24) | 210,22(11) | JU7,38(10) |

Computed in Stata with data from ISSP and various sources for country level variables; continuous variables are z-standardized with standard errors for single singular effects of macro level variables in brackets. Results with non-standardized variables are available.

<sup>(</sup>N: Country -5, Groups -178, Time -492) p<0.1 +; p < 0.05 \*; p < 0.01 \*\*; p < 0.001 \*\*\*Significance level is indicated for country level variables due to low number of degrees of freedom. Models are estimated with full likelihood.

Table 12 Effects of country-level characteristics on attitudes towards inequality when entered as a single country-level predictor when group-level is not specified

VIF and Tolerance scores are related to models MH2, MH3, and MH4 from Table 11, in which all predictors from each of dimension were entered together

|   |                                     | remaining |                  | variance | VIF when tested  |           |
|---|-------------------------------------|-----------|------------------|----------|------------------|-----------|
|   | beta coefficients (standard errors) | variance  | (standard error) | change   | within dimension | Tolerance |
| Fitted model M1 from Table 11             |                                     | 1,05      | (0,07)           |          |                  |           |
| material interest and potential risk (H2) |                                     |           |                  |          |                  |           |
| GDP/C (B)                                 | -2,2* (1,03)                        | 0,998     | (0,064)          | -0,056   | 36,32            | 0,03      |
| $(\text{GDP/C})^2$ (B)                    | 2,21* (1,05)                        |           |                  |          |                  |           |
| GDP/C (W)                                 | -0,075 (0,11)                       |           |                  |          | 1,06             | 0,94      |
| $(\text{GDP/C})^2$ (W)                    | -0,22** (0,07)                      |           |                  |          |                  |           |
| GDP growth (B)                            | 0,13* (0,05)                        | 1,021     | (0,066)          | -0,033   | 6,81             | 0,15      |
| GDP growth (W)                            | -0,07 (0,06)                        |           |                  |          | 1,08             | 0,92      |
| Unemployment rate (B)                     | -,02 (0,05)                         | 1,0365    | (0,067)          | -0,017   | 30,45            | 0,0       |
| Unemployment rate (W)                     | 0,02 (0,05)                         |           |                  |          | 1,12             | 0,89      |
| ideological guiding principles (H3)       |                                     |           |                  |          |                  |           |
| Religiosity (B)                           | 0,06 (0,045)                        | 1,009     | (0,065)          | -0,045   | 21,11            | 0,05      |
| Religiosity (W)                           | 0,17** (0,05)                       |           |                  |          | 1,05             | 0,96      |
| Wealthy family (B)                        | -0,08+ (0,045)                      | 1,004     | (0,0645)         | -0,050   | 6,64             | 0,15      |
| Wealthy family (W)                        | -0,24*** (0,07)                     |           |                  |          | 1,86             | 0,54      |
| Government's role in redistribution (B)   | -0,09+ (0,045)                      | 1,014     | (0,065)          | -0,040   | 9,55             | 0,10      |
| Government's role in redistribution (W)   | -0,24*** (0,07)                     |           |                  |          | 1,92             | 0,52      |
| reflection of society (H4)                |                                     |           |                  |          |                  |           |
| Conflicts: rich vs. poor (B)              | -0,10* (0,04)                       | 0,999     | (0,064)          | -0,054   | 12,73            | 0,08      |
| Conflicts: rich vs. poor (W)              | -0,18*** (0,05)                     |           |                  |          | 1,12             | 0,89      |
| Gini (B)                                  | 0,14** (0,05)                       | 1,010     | (0,065)          | -0,044   | 2,22             | 0,45      |
| Gini (W)                                  | 0,115* (0,06)                       |           |                  |          | 1,41             | 0,71      |
| Social spending (B)                       | 0,125** (0,05)                      | 1,017     | (0,065)          | -0,037   | 10,88            | 0,09      |
| Social spending (W)                       | -0,08+ (0,05)                       |           | ·                |          | 1,41             | 0,71      |
| Ei  |                                     |           |                  |          |                  |           |

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 Table 13 Effects of country-level characteristics on attitudes towards inequality when entered as a single country-level predictor in fully specified model

VIF and Tolerance scores are related to models MH2, MH3, and MH4 from Table 11, in which all predictors from each of dimension were entered together

|   |                                     | remaining |                  | variance | VIF when tested  |           |
|---|-------------------------------------|-----------|------------------|----------|------------------|-----------|
|   | beta coefficients (standard errors) | variance  | (standard error) | change   | within dimension | Tolerance |
| Fitted model M3 from Table 11             |                                     | 0,48      | (0,03)           |          |                  |           |
| material interest and potential risk (H2) |                                     |           |                  |          |                  |           |
| GDP/C (B)                                 | -1,75* (0,78)                       | 0,472     | (0,031)          | -0,007   | 44,38            | 0,02      |
| $(\text{GDP/C})^2$ (B)                    | 1,755* (0,79)                       |           |                  |          |                  |           |
| GDP/C (W)                                 | -0,05 (0,08)                        |           |                  |          | 1,5              | 0,67      |
| $(\text{GDP/C})^2$ (W)                    | -0,06 (0,05)                        |           |                  |          |                  |           |
| GDP growth (B)                            | 0,08* (0,04)                        | 0,475     | (0,031)          | -0,004   | 8,31             | 0,12      |
| GDP growth (W)                            | 0,03 (0,04)                         |           |                  |          | 1,09             | 0,92      |
| Unemployment rate (B)                     | -0,00 (0,03)                        | 0,479     | (0,031)          | 0        | 36,08            | 0,03      |
| Unemployment rate (W)                     | 0,06 (0,04)                         |           |                  |          | 1,23             | 0,81      |
| ideological guiding principles (H3)       |                                     |           |                  |          |                  |           |
| Religiosity (B)                           | 0,02 (0,04)                         | 0,477     | (0,031)          | -0,002   | 22,88            | 0,04      |
| Religiosity (W)                           | 0,05 (0,04)                         |           |                  |          | 1,15             | 0,87      |
| Wealthy family (B)                        | -0,04 (0,035)                       | 0,478     | (0,031)          | -0,001   | 7,4              | 0,135     |
| Wealthy family (W)                        | -0,02 (0,06)                        |           |                  |          | 2,35             | 0,425     |
| Government's role in redistribution (B)   | -0,005 (0,04)                       | 0,475     | (0,031)          | -0,004   | 10,8             | 0,09      |
| Government's role in redistribution (W)   | -0,13* (0,05)                       |           |                  |          | 2,75             | 0,36      |
| reflection of society (H4)                |                                     |           |                  |          |                  |           |
| Conflicts: rich vs. poor (B)              | 0,02 (0,03)                         | 0,477     | (0,031)          | -0,002   | 14,55            | 0,07      |
| Conflicts: rich vs. poor (W)              | -0,04 (0,04)                        |           |                  |          | 1,22             | 0,82      |
| Gini (B)                                  | 0,04 (0,035)                        | 0,4765    | (0,031)          | -0,0025  | 2,48             | 0,40      |
| Gini (W) g                                | 0,05 (0,04)                         |           |                  |          | 1,73             | 0,58      |
| Social spending (B)                       | -0,01 (0,04)                        | 0,4785    | (0,031)          | -0,0005  | 13,89            | 0,07      |
| Social spending (W)                       | -0,03 (0,035)                       |           |                  |          | 1,49             | 0,67      |
|   |                                     |           |                  |          |                  |           |

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| Year  | Country        | Getting ahead: How<br>important is knowing<br>the right people? | Getting ahead: How<br>important is coming<br>from a wealthy family? | Differences in income are too large | Gov. Should<br>reduce differences<br>in income | Rich people<br>should pay<br>more taxes |
|-------|----------------|---|---|-------------------------------------|--|---|
| 1 041 | Czech Republic | 2.48  | 3 58  | 2.10                                | 2.53   | 1.88                                    |
|       | Hungary        | 2.73  | 2.98  | 1.80                                | 2,07   | 2.02                                    |
| 1992  | Poland         | 2.34  | 2,56  | 1,80                                | 2.08   | 2.09                                    |
|       | Slovakia       | 2,32  | 3,15  | 1,71                                | 2,09   | 1,85                                    |
|       | Slovenia       | 2,50  | 3,43  | 1,74                                | 2,01   | 1,91                                    |
|       | Czech Republic | 2,46  | 3,44  | 1,60                                | 2,07   | 1,95                                    |
|       | Hungary        | 2,68  | 2,92  | 1,42                                | 1,81   | 1,86                                    |
| 1999  | Poland         | 2,05  | 2,33  | 1,68                                | 1,85   | 1,79                                    |
|       | Slovakia       | 2,01  | 2,64  | 1,35                                | 1,97   | 1,84                                    |
|       | Slovenia       | 2,32  | 3,18  | 1,64                                | 1,82   | 1,80                                    |
|       | Czech Republic | 2,38  | 3,32  | 1,72                                | 2,30   | 2,16                                    |
|       | Hungary        | 2,38  | 2,72  | 1,26                                | 1,65   | 2,01                                    |
| 2009  | Poland         | 2,11  | 2,68  | 1,64                                | 1,95   | 2,17                                    |
|       | Slovakia       | 2,09  | 2,96  | 1,48                                | 1,98   | 2,01                                    |
|       | Slovenia       | 2,14  | 3,04  | 1,49                                | 1,65   | 1,85                                    |

Table 14 Decriptives for mean answers for selected question on individual level

Table 15 Decriptives for mean answers for selected question on individual level

|      |                | Conflicts: poor |                    | Conflicts:     |                |                |
|------|----------------|-----------------|--------------------|----------------|----------------|----------------|
|      |                | people and rich | Conflicts: working | management and |                |                |
| Year | Country        | people          | and middle class   | workers        | Religiosity(%) | Self-placement |
|      | Czech Republic | 2,81            | 3,19               | 2,52           | 46             | 4,78           |
|      | Hungary        | 2,07            | 2,82               | 2,21           | 99             | 3,92           |
| 1992 | Poland         | 2,38            | 2,76               | 2,55           | 82             | 4,32           |
|      | Slovakia       | 2,73            | 3,14               | 2,38           | 86             | 4,56           |
|      | Slovenia       | 2,63            | 3,03               | 2,10           | 82             | 4,77           |
|      | Czech Republic | 2,76            | 3,20               | 2,57           | 48             | 4,63           |
|      | Hungary        | 1,86            | 2,73               | 2,13           | 74             | 3,90           |
| 1999 | Poland         | 2,23            | 2,76               | 2,46           | 92             | 4,44           |
|      | Slovakia       | 2,66            | 3,21               | 2,52           | 86             | 4,48           |
|      | Slovenia       | 2,60            | 3,03               | 2,10           | 75             | 5,09           |
|      | Czech Republic | 2,82            | 3,18               | 2,65           | 36             | 4,87           |
|      | Hungary        | 1,62            | 2,42               | 1,87           | 87             | 4,04           |
| 2009 | Poland         | 2,60            | 2,92               | 2,66           | 88             | 5,27           |
|      | Slovakia       | 2,82            | 3,18               | 2,67           | 78             | 4,86           |
|      | Slovenia       | 2,62            | 2,96               | 2,13           | 79             | 4,93           |

Table 16 Decriptives for selected variables on macro level

|      |                |                |                | Rate of      |      | Social Expenditures |
|------|----------------|----------------|----------------|--------------|------|---------------------|
| Year | Country        | GDP (PPP)/1000 | GDP Growth (%) | Unemployment | Gini | (% of GDP)          |
| 1992 | Czech Republic | 13,625         | -0,5           | 2,8          | 20,8 | 16,8                |
|      | Hungary        | 10,999         | -3             | 12,3         | 25,1 | 30,3                |
|      | Poland         | 16,309         | -6,8           | 9,9          | 30,5 | 23,9                |
|      | Slovakia       | 8,576          | -6,72          | 11,4         | 19   | 24,8                |
|      | Slovenia       | 12,985         | -5,46          | 8,9          | 26   | 22                  |
| 1999 | Czech Republic | 16,006         | 1,7            | 8,6          | 26   | 21,6                |
|      | Hungary        | 12,747         | 3,2            | 9,9          | 29,3 | 21,6                |
|      | Poland         | 10,83          | 4,5            | 13,4         | 31,6 | 21,6                |
|      | Slovakia       | 12,122         | 0              | 16,5         | 24   | 18,6                |
|      | Slovenia       | 18,427         | 5,3            | 7,4          | 22   | 22,8                |
| 2009 | Czech Republic | 22,702         | -4,7           | 6,7          | 25,6 | 20,7                |
|      | Hungary        | 16,309         | 6,8            | 9,9          | 30,5 | 23,9                |
|      | Poland         | 16,088         | 1,6            | 8,2          | 30,5 | 21,5                |
|      | Slovakia       | 18,527         | -4,9           | 12,1         | 25,7 | 18,7                |
|      | Slovenia       | 18,527         | -8             | 5,9          | 23,6 | 22,6                |

## Figure 6 Effects of GDP per Capita on inequality tolerance

Entered as a single country level predictor into model M1 (Table 11) (Fractional polynomial fit type)



Figure 7 Effects of GDP Growth on inequality tolerance

Entered as a single country level predictor into model M1 (Table 11) (Fractional polynomial fit type)



Figure 8 Effects of rate of Unemployment on inequality tolerance

Entered as a single country level predictor into model M1 (Table 11) (Fractional polynomial fit type)







Figure 10 Effects of Religiosity (% with stated denomination) on inequality tolerance

Entered as a single country level predictor into model M1 (Table 11) (Fractional polynomial fit type)



Figure 11 Effects of belief that structure plays a significant role in attainment of success (Wealthy family required for success) on inequality tolerance

Entered as a single country level predictor into model M1 (Table 11) (Fractional polynomial fit type)



**Figure 12** Effects of sensitivity to conflicts (between the rich and the poor) on inequality tolerance Entered as a single country level predictor into model M1 (Table 11) (Fractional polynomial fit type



Figure 13 Effects of Gini (objective rate of inequality) on inequality tolerance

Entered as a single country level predictor into model M1 (Table 11) (Fractional polynomial fit type



Figure 14 Effects of Level of social spending (as % of GDP) on inequality tolerance

Entered as a single country level predictor into model M1 (Table 11) (Fractional polynomial fit type)



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