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## Individual Determinants of Social Fairness Assessments: The Case of Germany

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## **Non-technical summary**

In contrast to its omnipresence in real politics the fairness issue has been largely neglected in economic approaches to study political processes. This paper aims to contribute to a better understanding how the assessment of social fairness can be explained. For this purpose we analyse the determinants of fairness assessment distinguishing between fairness preferences, beliefs on the sources of economic success and the functioning of democracy as well as self-interest.

To test this framework empirically we use representative survey data for Germany (ALLBUS) for the years 1991, 2000 and 2004. This survey is particularly valuable for at least two reasons: First, it contains information about a general assessment of the country's overall social fairness, the individual evaluation of the given distributive situation and objective data on the respondents' socio-economic characteristics. Second, focusing on Germany allows us to analyse whether the differences in socialisation in the former Communist eastern and the western part of the country persistently influence the perception of social justice.

The results indicate that fairness preferences, beliefs about individual responsibility for a certain outcome as well as the functioning of the German democracy and self-interest determine the individual fairness perception jointly. Although we use proxies for fairness preferences, beliefs and control for personal characteristics (e.g. income, religious denomination) East Germans are more likely to assess the existing distribution as totally unjust. However, since the early nineties the east-west-differences are gradually fading away. Perhaps surprisingly, self-interest has only a moderate impact on a person's fairness assessment, while the beliefs concerning procedural fairness indicate that the willingness to accept social differences is considerably higher if they are seen as a result of fair processes. Our findings are relevant e.g. to understand the demand for redistribution since perceived social fairness should be among its major determinants.

## **Zusammenfassung**

In ökonomischen Ansätzen zur Erklärung politischer Prozesse werden Gerechtigkeitsüberlegungen bislang weitgehend vernachlässigt. Die vorliegende Arbeit soll zu einem besseren Verständnis der Wahrnehmung sozialer Gerechtigkeit beitragen. Zu diesem Zweck analysieren wir die Determinanten individueller Urteile über das Ausmaß der sozialen Gerechtigkeit. Unter den Erklärungsfaktoren unterscheiden wir unter anderem zwischen Eigeninteresse, sozialen Präferenzen und Einschätzungen bezüglich der Ursachen für wirtschaftlichen Erfolg sowie der Funktionsfähigkeit des demokratischen Systems.

Die empirischen Analysen basieren auf repräsentativen Umfragedaten für Deutschland, die im Rahmen der Allgemeinen Bevölkerungsumfrage der Sozialwissenschaften (ALLBUS) in den Jahren 1991, 2000 und 2004 erhoben wurden. Die ALLBUS-Daten sind aus zwei Gründen besonders geeignet: Zum einen enthalten sie Informationen zur allgemeinen Einschätzung der sozialen Gerechtigkeit innerhalb Deutschlands, eine Vielzahl individueller Werturteile und Einschätzungen sowie objektive Daten zur sozioökonomischen Lage der Befragten. Zum anderen erlaubt die Betrachtung deutscher Daten Aussagen darüber, ob die unterschiedliche Sozialisation im ehemals kommunistischen Osten bzw. in Westdeutschland die Wahrnehmung von sozialer Gerechtigkeit beeinflusst.

Die Ergebnisse unserer empirischen Analyse zeigen, dass soziale Präferenzen und Einschätzungen zur individuellen Eigenverantwortung und Funktionsfähigkeit des demokratischen Systems die Gerechtigkeitswahrnehmung ebenso beeinflussen wie Eigeninteressen. Obwohl all diese Faktoren berücksichtigt wurden, empfinden Ostdeutsche die sozialen Disparitäten eher als ungerecht. Diese Ost-West-Unterschiede verschwinden allerdings seit den frühen Neunziger Jahren allmählich. Die genannten signifikanten Effekte unterscheiden sich dabei in ihrer Intensität: Während das Eigeninteresse nur einen moderaten Einfluss hat, ist die Einschätzung zur Funktionsfähigkeit der Demokratie in Deutschland für die individuelle Gerechtigkeitswahrnehmung von erheblicher Bedeutung. Demnach nimmt die Bereitschaft zur Akzeptanz sozialer Ungleichheit erheblich zu, wenn sie als Ergebnis eines fairen Prozesses wahrgenommen wird. Dieses Ergebnis verweist auf die Bedeutung prozeduraler Fairness im Rahmen von Gerechtigkeitsurteilen. Unsere Erkenntnisse sind unter anderem für das Verständnis der Nachfrage nach Umverteilung von Bedeutung, da die wahrgenommene soziale Gerechtigkeit eine Hauptdeterminante für das Bedürfnis nach staatlichen Eingriffen in die Einkommensverteilung sein dürfte.

# Individual Determinants of Social Fairness Assessments – The Case of Germany

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## Abstract

In this contribution we study the determinants of how individuals assess the social fairness of a given income distribution. We propose an analytical framework distinguishing between potential impact factors related to the following fields: first fairness preferences, second beliefs on the sources of economic success and the functioning of democracy and third self-interest. We test this framework on representative survey data for Germany for the years 1991, 2000 and 2004. Our results indicate that self-interest, beliefs and fairness preferences jointly shape fairness assessments. In addition, a number of personal characteristics are found to be important: Compared to their western fellow citizens, people born in GDR have a more critical view at social fairness. A particularly strong impact is related to the belief on the functioning of the democratic system. This points an important role of procedural fairness for the acceptance of a given distribution.

## 1. Introduction

In recent years, attention for the role of fairness has increased significantly among economists. A major reason is the insight that fairness motives affect the behaviour of people in many respects (Fehr and Schmidt, 1999; Fong, 2001; Konow, 2003) and the analysis of fairness widens our understanding of individual decision making to an extent that cannot be achieved by models that rely on narrow self-interest maximization only. While the role of fairness for individual behaviour is increasingly recognized, its role in societal decision making has so far received very little attention. This paper aims at providing a first step towards a better understanding of fairness in a societal context. More specifically, we want to identify the most relevant factors that drive the individual fairness *assessments* (*syn. judgements*): Why do some individuals assess a given distribution (of income) as fair while others judge the same distribution to be unfair? To answer this question, we propose an analytical framework distinguishing between self-interest, fairness preferences, beliefs on the sources of economic success and differences in sensitivity to inequality. We test this framework using representative survey data for Germany for the years 1991, 2000 and 2004 (ALLBUS survey). Germany is a particular interesting country given the Communist history of its eastern part. Hence, we place a special focus on the difference in fairness assessments between East and West German citizens. Our endogenous variable is the degree to which individuals assess the existing distribution as fair. In our regressions, we find the individual's beliefs on whether political decisions in Germany are procedurally fair to be of major importance. In addition, beliefs concerning the impact of individual effort on outcomes are significant. Fairness preferences have a considerable impact on fairness assessments while our results point at a relatively low self-serving bias. Personal characteristics are found to be of relevance as well: In particular, we

show that the east-west and the gender difference persist even if we control for different indicators of preferences, beliefs and self-interest.

Our study is related to empirical studies on the determinants of individual preferences with respect to redistribution or the role of the state (such as Corneo and Grüner, 2002 or Alesina and Fuchs-Schündeln, 2007) where the latter is a particular interesting point of reference because the authors focus on the east-west-divide in Germany. Whereas these studies try to explain redistributive preferences we shift the attention towards the fairness assessment of a given (income) distribution and, hence, pose a distinctly different question. For Germany, a number of sociological studies address the fairness of the status quo distribution as assessed by German citizens (e.g., Lippl, 2003). However, they compare the differences in assessment by different socio-economic groups without applying a systematic conceptual framework.

The paper is organized as follows. Section 2 develops the analytical framework. Section 3 describes relevant variables covered by the ALLBUS survey and presents the hypotheses to be tested. The results of our empirical analysis are presented and discussed in section 4. Section 5 concludes.

## **2. Potential impact factors for fairness assessments**

Why do fairness judgements with respect to a country's social differences differ so widely among individuals although they assess an identical country setting? A distinction has to be made between four groups of explanatory factors. First, individuals may differ in their *fairness preferences*, i.e. they may apply different concepts of fairness when making their judgement on the actual degree fairness in their country. Second, they may entertain different *beliefs* concerning the reasons underlying the existing income inequality and poverty. Third, the different judgments may be driven by *self-interest and the self-serving bias* in the sense



that a situation which is advantageous (disadvantageous) to an individual tend to be regarded as fair (unfair). Fourth, personal characteristics like gender, education or age may capture differences in the individual sensitivity to inequality or the level of experience and information.

## 2.1 Fairness preferences

Fairness preferences may refer to very different justice theories which can be classified into distributive and procedural approaches. *Distributive justice* concepts judge fairness by the final outcomes and thus follow consequentialist ethics. Here, an allocation is considered fair if every individual holds the means he is entitled to (e.g., Nozick, 1974; Konow, 2001). The first variant of this type is the *need principle* (e.g., Deutsch, 1975). It demands that every member of society, irrespective of his own abilities and initial allocation, is guaranteed sufficient material means for a tolerable living. The second variant is the *equity principle* and dates back to Aristotle (Konow, 2003). It focuses on the relationship between individual "input" and the resulting outcome and demands the ratio of output to input to be the same for all individuals. Konow (2003) makes the distinction of discretionary and exogenous inputs. Discretionary variables are those for which the agent is accountable while for exogenous variables he is not. Buchanan (1986) differentiates between birth, choice, effort and luck. He argues that people are likely to agree that birth is considered exogenous while effort is discretionary.

According to the concept of *procedural fairness*, the question of whether a certain allocation is considered fair crucially depends on the procedure through which it has been generated. Dolan et al. (2007) names a number of criteria which determine whether the decisions are considered fair from a procedural point of view. Following Anand (2001), they argue that decisions are considered fair if every person potentially affected by them is given the chance to voice his opinion and concern. Neutrality demands that decision-makers are able to sepa-

rate from self-interest. In addition, fair procedures have to be transparent and consistent. In this context, consistency means that the same procedure is used for a wide range of structurally equivalent decisions. Procedural fairness is to some extent quasi-consequentialist that it protects individuals against arbitrary decisions and ensures that all relevant information is considered. Beyond that, it increases the acceptance especially among the disadvantaged because they feel treated politely and portly (e.g., Sondak and Tyler, 2007).

A large number of studies have been conducted in order to elicit the dimensions which are empirically important in people's fairness preferences (e.g., Konow, 2003). Several authors find support for the dominant role of equity for fairness judgements (e.g., Kahneman et al., 1986; Konow, 2001). The need principle proves relevant in a number of studies (e.g. Konow, 2001, 2003). At the same time, the contributors' behaviour is often found to be reciprocal (e.g. Fong, 2007). With respect to redistribution, reciprocity means that the net contributors are content to give up own means in favour of a person that exerted effort but exogenous variables led them to achieve poor results. However, they are not content to give up own means in favour of individuals that did not exert sufficient effort (e.g., Faravelli, 2007; Fong, 2007). Finally, studies on the importance of procedural justice find that fair procedures promote the acceptance of unequal allocations (e.g., Anand, 2001; Dolan et al., 2007).

The idea that preferences along the lines of these different dimensions should matter for fairness assessments is straightforward: Fairness preferences can be regarded as the yardstick against which people measure the actual distributive situation. People with a strong preference for distributive justice according to the need principle should come to a more critical assessment of observable inequalities compared to somebody stressing the equity principle - provided inequality is believed to result from differences in discretionary inputs.

## 2.2 Beliefs

Given a certain preference function, the fairness judgement on an objective distributive outcome is driven by implicit assumptions or beliefs (e.g., Konow, 2003; Alesina and Angelegos, 2005; Faravelli, 2007). People may have full and identical information on the distributive situation in their country and they may share the same fairness preferences. Even then they may reach different fairness judgements if they do not agree on the role of discretionary and exogenous factors in explaining the observable distributive outcome. If income differentials are explained by a dominant role of exogenous factors the fairness assessment of a given distributive situation will be more negative than if they are explained by differences in discretionary factors. In a survey among sociology and economics students, Faravelli (2007) finds the interdisciplinary difference in fairness judgements to be driven by systematic differences in beliefs about the causes of income inequality but not by differences in preferences. In the current study, we expect that different beliefs on the role of discretionary versus exogenous variables add to explain heterogeneity in individual fairness assessments. People who believe that discretionary (exogenous) variables drive the existing distribution of income are more likely to judge the existing differences as fair (unfair).

A further belief relevant in our context is related to the procedural fairness dimension. The belief on the extent to which a country's citizens control politics and, hence, voters have an impact on the distributive situation should also matter for fairness judgements. We would expect that a given distributive situation is assessed as fairer if an individual is confident in the effectiveness of democratic institutions and voter control.

### **2.3 The role of self-interest and self-serving bias**

There is a clear case that self-interest should impact on preferences for income redistribution: Net beneficiaries of purely redistributive tax-transfer schemes can be expected to favour the system's expansion while net contributors favour a reduction (Corneo and Grüner, 2002). The case is less clear cut with respect to fairness assessments: If people had an unbiased perception of their socio-economic environment it is hard to see how self-interest should influence fairness assessments beyond their impact through the distributive preference channel. However, the psychological literature suggests that a "self-serving bias" distorts perception and thus assessments. The essence of the self-serving bias is "to conflate what is fair with what benefits oneself" (Babcock and Loewenstein, 1997, 110). Examples in the literature (Dahl and Ransom, 1999; Babcock and Loewenstein, 1997) are related to the fairness of compensation for extra hours worked, to voluntary givings to religious communities, in the assessment of lawsuits or management compensations. In all these examples, individuals' self-interest is clearly mirrored in their fairness assessment in the sense that e.g. workers who work (no) extra hours regard a high (low) compensation for extra hours as fair. This bias may be indeed self-serving as it reduces cognitive dissonances (or simply a "bad conscience") which result from a possible conflict between self-interest and individual fairness judgement (Konow, 2000) and thus promotes happiness and mental health (Taylor and Brown, 1988).

In the application of the self-serving bias towards the issue of social fairness assessments we would expect that people who are (and expect to stay) in a relatively favourable economic situation tend to assess existing social differences in their country as fairer than less advantaged fellow citizens.

## 2.4 Personal characteristics and the sensitivity to inequality

In previous studies, a number of individual characteristics (e.g. gender and age) were found to impact fairness judgements. Their impact may result from the fact that these factors correlate with certain preferences, beliefs or determinants of the self-serving bias. In addition, the individual characteristics can cover group-specific differences in the sensitivity to inequality issues.<sup>1</sup>

A particular German impact factor is related to the *Communist past* of the eastern part of the country which has left its marks in the minds of people. Ockenfels and Weimann (1999) detect significant behavioural differences of Western and Eastern Germans in public good and solidarity experiments. Alesina and Fuchs-Schündeln (2007) show that compared to their Western German countrymen, Eastern Germans have a stronger preference for redistribution that cannot fully be explained by self-interest and the simple fact that Eastern Germans are relatively poor. It must be stressed that these known effects are accounted for by the inclusion of fairness preferences into our study design. Beyond that, however, it may well be the case that the experience under a Communist regime can have an independent impact on social assessments, e.g. by making people highly sensitive to take note of social differences. Therefore we expect Germans who have living experience in the German Democratic Republic (GDR) to assess the social situation as relatively unfair. This effect is expected to be stronger, the larger the part of the life-span a person lived under socialism.

The literature reports that *women* have a stronger preference for income redistribution – be it through government policy or charity (e.g., Piper and Schnepf, 2008; Corneo and Grue-ner, 2002; Delaney and O’Toole, 2008). This difference may result from a gender gap in income, education or job-opportunities and the stronger role of household labor that promotes a self-serving bias in favour of more equality. In addition, a gender gap is reported for beliefs

(e.g., Schlesinger and Heldman, 2001; Fong, 2001), risk-aversion (e.g., Meier-Pesti and Penz, 2008) and in the sensitivity to inequality (e.g., Schlesinger and Heldman, 2001). In our current study, we can account for some of these differences but not for all of them. Thus, we expect the gender gap in fairness assessments to persist. As the workforce participation among women in the former GDR was higher and the wage-gap was lower, the gender effect may be weaker for East German women. On the other hand, the fact that the post-transitional loss in employment, income and social status was especially high for East German women points in the opposite direction.

*Religiosity* is another important personal characteristic. Religious people are more likely to believe that it is one's duty to be industrious in the here and now (e.g., Benabou and Tirole, 2006; Tan, 2006). Combined with the conviction that effort pays, this may lead them to accept social inequality as just. On the other hand, they are likely to exhibit a stronger sensitivity to inequality and/or place stronger emphasis on the need principle (e.g., Tan, 2006). The net effect of religion on the assessment of existing inequalities is thus undetermined.

There are at least two arguments for an independent impact of *age* on social fairness assessments. First, life experience differs across age classes. Older people may remember the substantial social inequalities before the expansion of the welfare state since the 1970s (Lindbeck, 1995; Heinemann, 2008). These memories may make them see today's situation less critical. Second, uncertainty about the own economic and social status in life is larger for the young than for the old. Compared to the old, the perspective of young people with respect to their country's social situation is rather characterized by a thicker "veil of ignorance" (e.g., Rawls, 1971). As a consequence, the old may pay less attention to social inequality because it does not serve as indicator for social risks in their own life as it does for the young. This sec-

ond aspect is clearly related to self-interest. Both arguments lead us to postulate a positive impact of age on social fairness judgements.

*Education* impacts on fairness assessments through different channels (e.g., Lewin-Epstein et al., 2003). First, education clearly is a useful proxy for a person's permanent income and thus relates to self-interest: Like current income, a better education would then lead to a more favourable assessment of existing inequalities. However, better education also coincides with more abstract thinking about fairness and may lead to superior knowledge about the existing level of inequality. No clear prediction is made with respect to the sign of the latter aspects and therefore the overall effect of education is ambiguous.

Even though our study asks for the determinants of social fairness assessments for the distributional situation of the country as whole, the individual assessment should be influenced by his or her local environment. It is well known from the psychological literature that people's judgement of their country's situation is strongly influenced by highly salient information e.g. with respect to neighbours' or friends' situation and less by objective socio-economic data for the country in aggregate (Fiske and Taylor, 1991). Whereas the fate of personally known individuals evokes emotions like empathy, objective economic data does not have a similar emotional impact (Singer and Fehr, 2005). Apart from this, local economic conditions potentially have a double impact on an individual's objective situation. First, local unemployment indicates local exposition to an economic risk (e.g., Moene and Wallerstein, 2003). Second, it points to possible local externalities from social problems which may affect the well-being of wealthy citizens as a consequence, e.g., from the positive impact of unemployment on the prevalence of crime (e.g., Piven and Cloward, 1971). Hence, local macro-economic data like the regional unemployment rate can add to a more comprehensive view at

the individual's fairness assessment. With respect to the local unemployment rate our reasoning leads us to postulate a negative impact on social fairness judgements.

### **3. The Database**

The General German Social Survey ("ALLBUS") offers a promising starting point to test the relevance of the above mentioned determinants for social fairness assessments.<sup>2</sup> This survey has been conducted biannually between 1980 and 2006 and is representative for the German population. Since we are particularly interested in the impact of socialization under Communism in the eastern part of the country we base our study on data collected after 1989. The variables central to our study are not included in every survey. Therefore we restrict our analysis to the years 1991, 2000 and 2004. As the dependent variable we focus on the following survey question:<sup>3</sup> *"All in all, I think the social differences in this country are just"*.<sup>4</sup> This question comes very close to a general assessment of a country's overall social fairness allowing both for the inclusion of objective data and the individual evaluation of the given distributive situation. The participants' provide their view on a scale from 1 ("I fully agree") to 4 ("I disagree entirely"). Hence, a larger (lower) value is associated with a less (more) favourable assessment. With respect to the determinants of fairness assessments, ALLBUS contains information on the demographic, social and economic situation of individuals and households. Additionally, it contains questions concerning their attitudes on a number of important political and social issues. The corresponding data offers us proxies to cover potential determinants from all the potentially relevant fields as developed in the preceding section.

#### **Fairness preferences**

ALLBUS reports on three questions that provide insights into the respondents' preferences for distributional and procedural fairness. As an indicator for the respondents' distribu-



tive fairness preferences we use their agreement to the statement that people should have a “*decent income even without achievement*”. As a robustness check we also make use of an alternative measure which captures the attitude towards socialism, since the underlying idea is strongly connected with equality. Specifically, we expect those participants’ supporting the following sentence: “*Socialism is basically a good idea, it was just put into practice badly*” to be in favour of an egalitarian distribution. Both statements capture the relative importance of the need principle versus the equity principle in individual fairness preferences.<sup>5</sup> For both measures, we construct dummy variables, which equal one if a respondent prefers a distribution according to the need-principle, and zero otherwise (for definitions see the appendix). Along the lines of our argumentation above (section 2.1) we expect a positive sign for both variables; Other things equal, those who prefer the need principle assess a given distribution as less fair.

Procedural fairness preferences are measured by a question on political priorities. People that ranked “*more influence for citizens*” to be the most or second most important political goal are defined to have a high preference for procedural fairness. We do not expect that the importance assigned to procedural fairness will have a direct impact on social fairness assessments. However, in combination with the belief on the political influence of citizens it should matter. We will come back to this issue below.

### **Beliefs**

To develop an indicator for the participants’ beliefs with respect to the relative influence of discretionary variables on individual allocation, we evaluate their answers to the questions whether individual “*achievement, industriousness*” or “*right social background*” are important prerequisites for “*social success and upward mobility*”. As hypothesized (section 2.2) we expect that respondents assigning more explanatory power for individual success to the first

(second) factor should assess social differences as relatively fair (unfair). We construct dummy variables (one for the answer “(very) important” and zero otherwise) and expect a negative (positive) sign for the "*achievement, industriousness*" ("*right social background*") dummy.

The satisfaction with "*democracy as practiced in Germany*" is used to capture the degree to which political decisions in Germany are viewed as procedurally fair. Since many crucial factors that affect the distribution of income (e.g. tax rates, unemployment benefits, pensions) are determined politically, this variable covers the essential procedures relevant for our analysis. According to theory (section 2.2) we predict that satisfaction with democracy-dummy should be favourable to a more positive view on social fairness. Furthermore, we would expect this impact to be particularly strong for those who have a strong preference for citizens' influence. This reasoning leads us to include an interaction between the belief variable on satisfaction with democracy and the preference for more influence of citizens.

### **Self-interest**

According to our theoretical consideration (section 2.3) we suppose that the judgement of the social differences is biased by the individuals' self-interests. To test for the relevance of a self-serving bias we make use of income as our primary indicator. The ALLBUS survey provides information on the net income and the size as well as the composition of households which enables us to calculate the household equivalent income based on the OECD-modified scale.<sup>6</sup> The self-serving bias theory suggests a positive relationship between the respondent's income and his readiness to accept inequality as fair. In addition to income we take the employment status as a further straightforward proxy for the self-interest in redistribution. We expect unemployed respondents to have a more critical view at social fairness in their country.

### **Personal characteristics and individual differences in sensitivity**

Given our special focus on the impact of communism on fairness assessments, we introduce a dummy variable equal to one for the place of birth in Eastern Germany. This variable represents the effects of a socialisation under Communism. As argued above we predict a positive sign. For reasons of robustness, we also use the share of years spent under socialist rule as an alternative measure (measured by the ratio age at 1990 by age at the year of observation for all individuals born after 1948; for the others, only the years 1949-1990 are included in the numerator). It is highly correlated with the east-dummy and shows the same performance. Hereafter, we only report on the latter. In order to test for convergence in fairness assessments between the eastern and western part since re-unification, we interact the east-dummy with time. A dummy for female respondents captures the impact of gender on the assessment of social differences. A positive sign is anticipated even when differences in preferences, beliefs and education or income are controlled for. To account for the special role of East German women, we introduce the interaction between the two dummies. No prediction is made with respect to the sign.

We also control for the respondent's age expecting a positive sign. A dummy variable is included to capture the participant's membership in an institutionalized religious community (equalling one if respondent is a member and zero otherwise). The impact of being religious on the assessment of the existing social differences is ambiguous. To control for the level of education, we use a dummy variable, which equals one if the participant has a qualification for university entrance (high-school degree, A-levels), and zero otherwise. No clear prediction is made with respect to the corresponding sign. The rate of unemployment in the participants' resident states is included to proxy the effect of local economic conditions. A negative sign is predicted.

### **Table 1 about here**

Table 1 contains the descriptive statistics of our variables. Except for the correlation between EAST and UNEMPLOYED (-0.66) and EAST and RELIGION (-0.56), the correlation between the exogenous variables is low. More importantly, variables of self-interest on the one hand and preferences respectively beliefs on the other hand are not found to be highly correlated. The coefficients of correlation are well below an absolute value of 0.3. Thus, the distinction between these categories should be upheld.

## **4. Econometric Results**

We use an ordered probit approach to analyse the determinants of the individual fairness assessment. The results are summarized in Table 2. Column 1 reports the results of our basic specification including explanatory variables from all categories introduced in section 3. Specification 2 uses the opinion about socialism as a proxy for distributional fairness preferences instead of the variable NEED. In order to focus on the impact of procedural fairness we add the preferences for fair political processes and interact them with the beliefs concerning the democratic practice. The latter are a bottleneck concerning the number of years included in our estimation. Omitting this variable allows us to include observations from 2004 (column 4). Finally, we introduce two models that are related to the different socialisation in the former GDR and Western Germany. To account for the special role of women in East Germany we introduce the interaction of both variables in specification 5. Specification 6 interacts the year-dummy for 2000 and the east-dummy to calculate the speed of convergence in the fairness assessments as suggested by Alesina and Fuchs-Schündeln (2007).<sup>7</sup>

### **Table 2 about here**

Our first robust result is the highly significant and positive impact of preferences concerning distributional fairness on the sensitivity to social differences. While the preferences for procedural fairness prove insignificant, the corresponding beliefs (i.e. satisfaction with democracy) have the predicted sign and are highly significant in all models. This indicates that individuals are more willing to accept an unequal outcomes if these result from a fair (democratic) process. The interaction between procedural preferences and the corresponding beliefs are insignificant. The coefficients of our variables capturing the respondent's beliefs about the driving forces of individual success show the expected signs, though only the industriousness variable is persistently significant. respondents who are convinced that a person's own industriousness determines his success in life assess the given social differences as less unfair. Believing that the social background determines the individual fortunes is only significant if the beliefs concerning the procedural fairness are not controlled for (see column 4).

As anticipated, the self-serving bias captured by the household equivalent income influences the fairness assessment. Those with a higher equivalent income are more likely to accept social differences. The impact of the employment status is only weakly significant and positive while the local rate of unemployment in the respondent's resident state shows a strong positive impact. This indicates that unemployed respondents and respondents living in regions with high unemployment risk are less content with the given distribution.

Among the individual characteristics the respondent's age, gender, religion and origin clearly influence the fairness assessment. Being old and religious is connected with a higher acceptance of social differences. Contrary to that, women and persons born in the former GDR are found to be less content with the given distribution. Beyond that there is no additional effect of women who were born in the eastern part. The interaction between the 2000-

dummy and the EAST-dummy indicates that the differences between East and West Germans were larger in 1991 than in 2000.

In sum, we show that all introduced categories of driving factors jointly affect the assessment concerning social fairness. Comparing the marginal effects reported in table 2, we find an outstanding impact of the beliefs concerning procedural fairness specified as satisfaction with the democratic system. The probability to assess the social differences in Germany as entirely unjust declines by more than 16 percentage points if the respondent is content with the democratic practice. The preferences for distributional fairness are also a strong determinant. Our results indicate that the probability of assessing the given distribution as entirely unjust rises by 7.12 percentage points if one is in favour of the need-principle (8.41 if we use the variable SOCIALISM). In addition, the belief concerning the impact of industriousness on outcomes is important. The probability of assessing the social differences as entirely unjust decreases by approximately 7 percentage points if one believes that industriousness has a strong impact on outcomes. The assessment of the overall societal fairness is also significantly driven by self-interests and the resulting self-serving bias, however, only to a modest extent. Especially the contribution of income is small: The probability to assess the social differences as entirely unjust declines by only 2.61 percentage points if a respondent earns 653.45 Euro (one standard deviation, see table 1) more, while it is 6 percentage points higher if the respondent is currently unemployed. The impact of the unemployment rate in the respondent's neighbourhood is negligible. Among the individual characteristics of the respondent we find a strong impact of religion: Religion is connected with an 8.68 percentage point lower probability of being entirely discontent with the social differences. The gender-gap persists and being female increases the probability of assessing the distribution as entirely unjust by 5 percentage points. Since we control for beliefs, preferences and self-interest as well as several socio-economic factors, this result indicates that women tend to have a higher sensi-

tivity for inequality. Recognising the specific situation in Germany, the differences in fairness assessments between those respondents socialised in the former GDR and FRG are of special interest. The east-dummy provides strong support to our hypothesis that East Germans are highly sensitive to perceive inequality. The probability of assessing the differences as totally unjust is about 12 percentage points higher for those born under the communist regime. Nevertheless we find a strong evidence for a convergence during the years after reunification: The marginal effect of the interaction between the dummy for 2000 and the east-dummy indicates that the differences in fairness assessments were 7.19 percentage points lower in 2000 than in 1991. In other words, over 50 percent of the differences in the fairness judgments in East and West Germany have disappeared between 1991 and 2000, since the marginal effect of the east-dummy – indicating the differences in fairness assessments between both parts in 1991 - is about 0.14. Hence, we would expect the discrepancies to disappear in approximately 20 years after the reunification if the convergence is linear.

## **5. Conclusion**

In this paper, we analyse the fairness assessments using the example of Germany: Which factors make some citizens assess the existing distribution in Germany (including the social differences) as fair while making others judge them as unfair? Based on the literature, we propose an analytical framework that differentiates between fairness preferences, beliefs concerning the underlying causes of social differences respectively income inequality and a self-serving bias. In an empirical analysis using results from the ALLBUS survey for 1991, 2000 and 2004, we identify all three groups of factors to be important for the overall fairness assessment. Personal characteristics like age and gender are also found to drive assessments.

In line with e.g. Alesina and Fuchs-Schündeln (2007), we find a distinct difference in fairness judgments between East and West German citizens even 10 years after unification.

This difference persists when the preferences, beliefs and economic variables are accounted for. Since 1991, this effect is gradually fading. The convergence in fairness assessments derived from our analysis is somewhat faster than the convergence in redistributive preferences found by Alesina and Fuchs-Schündeln (2007). Even though there are distinct east-west differences in the situation of women both before 1990 and in the transitional period thereafter, we do not find a difference in fairness assessments between East and West German women. This does not necessarily mean that the effect of gender is independent of the economic and social environment (e.g., Meier-Pesti and Penz, 2008). More likely, the effect of communist socialization on women and the negative impact of transition on the social status of East German women neutralize each other.

Despite the existence of a self-serving bias, we do not find this bias to blur the economic distinction between preferences, beliefs and self-interest (respectively self-serving bias). This means that people can share common preferences and beliefs even if they do not share the same self-interest. The strong impact of the beliefs concerning procedural fairness is surprising for economists who are used to judge allocations by their outcomes and often neglect procedures. If we accept the premise that it is preferable to live in a society where a large share of people assesses the status quo distribution as fair, the current paper adds yet another piece of evidence that points at the importance of procedural fairness for social welfare (e.g., Frey and Stutzer, 2002).

When it comes to policy preferences, the above result indicates that a more favourable assessment of procedural fairness leads citizens to judge the status quo as more fair and thus reduces the pressure on politicians to pursue redistributive policies. Other things equal, a less intense redistribution is expected for democracies that are based on institutions promoting procedural fairness – e.g. through elements of direct democracy or a federalist structure with



far-reaching participation on the local level. On the other hand, a more favourable judgement on procedural fairness should have a positive impact on trust which in turn may reduce the resistance against market oriented reforms. In any case, the impact of the citizens' assessment of (procedural) fairness on both redistribution and market oriented reforms promises to be a fruitful field of future research.

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**Table 1: Descriptive statistics**

<b>Variable</b>	<b>Observations</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>Minimum</b>	<b>Maximum</b>
<i>Dependent Variable</i>					
FAIRNESS ASSESSMENT	21587	2.8321	0.8944	1	4
<i>Preferences</i>					
NEED	15661	0.4558	0.4981	0	1
SOCIALISM	17009	0.5614	0.4962	0	1
INFLUENCE FOR CITIZENS	46953	0.5584	0.4966	0	1
<i>Beliefs</i>					
INDUSTRIOUS BACKGROUND	11125	0.9553	0.2066	0	1
INDUSTRIOUS BACKGROUND	10906	0.5963	0.4907	0	1
DEMOCRACY	19088	0.7058	0.4557	0	1
POCEDURAL FAIRNESS	18744	0.3801	0.4854	0	1
<i>Self-interest/self-serving bias</i>					
UNEMPLOYED	47904	0.0509	0.2198	0	1
EQUIVALENT INCOME	22972	1073.415	653.4533	20	26666.67
<i>Further variables</i>					
FEMALE	47947	0.5238	0.4994	0	1
EDUCATION	47210	0.2096	0.4070	0	1
AGE	47878	46.5997	17.2790	18	97
EAST	16741	0.4046	0.4908	0	1
EAST_FEMALE	16741	0.2100	0.4073	0	1
EAST_2000	16741	0.0775	0.2675	0	1
RELIGION	47754	0.7664	0.4231	0	1
UNEMPLOYMENT RATE	9808 <sup>x</sup>	11.2355	5.0304	3.7	22.1

<sup>x</sup> The summary statistic for the unemployment rate includes only observations from the relevant years.

**Table 2: Determinants of the individual fairness assessments (ordered probit estimations)**

Variable	(1)		(2)		(3)		(4)		(5)		(6)	
	Coefficient	Marginal effect*	Coefficient	Marginal effect	Coefficient	Marginal effect	Coefficient	Marginal effect	Coefficient	Marginal effect	Coefficient	Marginal effect
<i>Preferences</i>												
NEED	0.2460 (5.38)***	0.0773			0.2393 (5.19)***	0.0747	0.2051 (5.75)***	0.0660	0.2457 (5.37)***	0.0772	0.2488 (5.44)***	0.0781
SOCIALISM			0.2726 (5.52)***	0.0841								
INFLUENCE FOR CITIZENS					0.1322 (1.36)	0.0406						
<i>Beliefs</i>												
INDUSTRIOUS	-0.2039 (-1.85)*	-0.0677	-0.2333 (-2.08)**	-0.0785	-0.1856 (-1.67)*	-0.0610	-0.3041 (-3.68)***	-0.1053	-0.2063 (-1.88)*	-0.0685	-0.2190 (-1.99)**	-0.0730
BACKGROUND	0.0570 (1.23)	0.0178	0.0631 (1.34)	0.0198	0.0676 (1.45)	0.0210	0.0893 (2.48)**	0.0284	0.0556 (1.20)	0.0174	0.0583 (1.26)	0.0182
DEMOCRACY	-0.5086 (-9.74)***	-0.1690	-0.4965 (-9.30)***	-0.1659	-0.6075 (-6.53)***	-0.2027			-0.5086 (-9.74)***	-0.1690	-0.5043 (-9.65)***	-0.1674
PROCEDURAL FAIRNESS					0.1680 (1.52)	0.0528						
<i>Self-interest/self-serving bias</i>												
UNEMPLOYED	0.1783 (1.80)*	0.0587	0.1751 (1.75)*	0.0580	0.1727 (1.73)*	0.0565	0.2113 (2.86)***	0.0715	0.1826 (1.84)*	0.0602	0.1730 (1.75)*	0.0569
EQUIVALENT INCOME <sup>#</sup>	-0.0001 (-3.78)***	-0.00004 [-0.0261]	-0.0001 (-4.25)***	-0.00004 [-0.0261]	-0.0001 (-3.90)***	-0.00004 [-0.0261]	-0.0002 (-6.83)***	-0.00005 [-0.0327]	-0.0001 (-3.72)***	-0.00004 [-0.0261]	-0.0001 (-3.38)**	-0.00003 [-0.0196]

**Table 2 continued**

<i>Further variables</i>												
FEMALE	0.1452 (3.22)***	0.0454	0.1650 (3.60)***	0.0520	0.1481 (3.25)***	0.0460	0.1821 (5.24)***	0.0582	0.1806 (2.88)***	0.0565	0.1494 (3.31)***	0.0467
EDUCATION	0.0141 (0.25)	0.0044	0.0009 (0.02)	0.0003	-0.0252 (-0.44)	-0.0078	-0.0758 (-1.73)*	-0.0239	0.0150 (0.26)	0.0047	0.0105 (0.18)	0.0033
AGE <sup>#</sup>	-0.0049 (-3.39)***	-0.0015 [-0.0259]	-0.0051 (-3.46)***	-0.0016 [-0.0277]	-0.0040 (-2.72)***	-0.0012 [-0.0207]	-0.0045 (-4.12)***	-0.0014 [-0.0242]	-0.0049 (-3.41)***	-0.0015 [-0.0259]	-0.0049 (-3.41)***	-0.0015 [-0.0259]
EAST	0.4049 (5.72)***	0.1261	0.3725 (5.18)***	0.1168	0.3986 (5.56)***	0.1234	0.3315 (5.71)***	0.1065	0.4436 (5.19)***	0.1380	0.4500 (6.11)***	0.1398
EAST_FEMALE									-0.0727 (-0.81)	-0.0225		
EAST_2000											-0.2437 (-2.24)**	-0.0719
RELIGION	-0.2906 (-5.07)***	-0.0927	-0.2474 (-4.26)***	-0.0792	-0.2675 (-4.60)***	-0.0846	-0.3017 (-6.85)***	-0.0985	-0.2885 (-5.03)***	-0.0920	-0.2787 (-4.84)***	-0.0887
UNEMPLOYMENT RATE <sup>#</sup>	0.0223 (2.69)***	0.0070 [0.0352]	0.0183 (2.17)**	0.0058 [0.0292]	0.0244 (2.90)***	0.0076 [0.0382]	0.0197 (3.29)***	0.0063 [0.0317]	0.0223 (2.68)***	0.0070 [0.0352]	0.0343 (3.47)***	0.0107 [0.0538]
<i>Year-dummies</i>												
2000	-0.2162 (-3.46)***	-0.0669	-0.2026 (-3.18)***	-0.0632	-0.2341 (-3.71)***	-0.0719	-0.2085 (-3.76)***	-0.0644	-0.2158 (-3.45)***	-0.0667	-0.1641 (2.24)**	-0.0509
2004							0.7800 (1.41)	0.0258				
<i>Regression diagnostic</i>												
p-value joint significance of variables	0.0000		0.0000		0.0000		0.0000		0.0000		0.0000	
Observations	2438		2350		2399		4072		2438		2438	
Pseudo-R <sup>2</sup>	0.0978		0.0985		0.1031		0.0706		0.0979		0.0986	
p-value likelihood-ratio test for joint significance of the year-dummies	0.0005		0.0015		0.0002		0.0000		0.0006		0.3262	

<sup>x</sup> The marginal effects are reported for the most negative answer category. <sup>#</sup> The effect of an increase by one standard deviation is presented in the square brackets.  
 \*\*\*/\*\*/\*\* significant at 10/5/1 percent level.



## Data – APPENDIX

### Table 3: Variable Explanations

Variable	Unit	Explanation	Categories	Corresponding ALLBUS question
<i>Dependent variable</i>				
FAIRNESS ASSESSMENT	Discrete variable	Respondent's answer to the statement " <i>social differences in Germany are just</i> ".	1: "completely agree" to 4: "completely disagree"	v155
<i>Preferences</i>				
NEED	Dummy	" <i>Decent income even without achievement.</i> "	1, if the respondent approves; 0 otherwise.	v152
SOCIALISM	Dummy	" <i>Socialism: Good idea, poorly implemented.</i> "	1, if the respondent approves; 0 otherwise.	v109
INFLUENCE FOR CITIZENS	Dummy	" <i>Political goals: More influence for citizens.</i> "	1, if the respondent ranks it as most/second most important goal; 0 otherwise.	v97
<i>Beliefs</i>				
INDUSTRIOUS	Dummy	" <i>Prerequisites for social success and upward mobility: Achievement, industriousness.</i> "	1, if the respondent approves; 0 otherwise.	v142
BACKGROUND	Dummy	" <i>Prerequisites for social success and upward mobility: Right social background.</i> "	1, if the respondent approves; 0 otherwise.	v145
DEMOCRACY	Dummy	<i>Satisfaction with democracy in the FRG</i>	1, if the respondent approves; 0 otherwise.	v17
PROCEDURAL FAIRNESS	Dummy	Interaction term between beliefs in and preferences for procedural fairness.	1, if the respondent prefers and beliefs in procedural fairness; 0 otherwise.	v17, v97
<i>Self-interest/self-serving bias</i>				
UNEMPLOYED	Dummy	Employment status of the respondent.	1, if the respondent is currently unemployed; 0 otherwise.	v461, v462
EQUIVALENT INCOME	Continuous variable	Monthly net income (in Euro) of the respondent's household adjusted by the number of household member. (Calculation based on the "OECD-modified scale": $\frac{v582}{1 + (v983 - 1) \cdot 0.5 + (v983 - v995) \cdot 0.3}$ )		v582, v983, v995

**Table 3 continued**

<i>Further variables</i>				
FEMALE	Dummy	Sex of respondent.	1, if the respondent is female; 0 otherwise.	v434
EDUCATION	Dummy	Respondent's general school leaving certificate.	1, if the respondent has a secondary qualification for university entrance; 0 otherwise.	v441
AGE	Discrete variable	Age of respondent.	18 – 97 years.	v432
EAST	Dummy	Origin of respondent.	1, if the respondent is born in East Germany; 0 otherwise.	v874
EAST_FEMALE	Dummy	Interaction term between FEMALE and EAST.	1, if the respondent is born in East Germany and female; 0 otherwise.	v434, v874
EAST_2000	Dummy	Interaction between EAST and the 2000 year-dummy.	1, if the respondent is born in East Germany and participates in the 2000 survey; 0 otherwise.	v874, v2
RELIGION	Dummy	Religious denomination of the respondent.	1, if the respondent is a member of a religious community; 0 otherwise.	v435
UNEMPLOYMENT RATE	Continuous variable	Unemployment rate of the respondent's federal state (in %). Source: German Statistical Office.		v904

## Endnotes

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<sup>1</sup> Sensitivity defines the degree to which a certain person becomes aware of existing inequalities. Insensitive persons only become aware of them if they are substantial in size. The more sensitive a person, the lower the threshold the inequality has to exceed in order to become recognized. Higher sensitivity does not necessarily go along with a higher inequality aversion but is a characteristic of the sensual system.

<sup>2</sup> From 1980 to 1986 and in 1991, the ALLBUS program was funded by the German Science Foundation (DFG). For all other surveys, state and federal funding has made available through GESIS (Gesellschaft sozialwissenschaftlicher Infrastruktureinrichtungen). ALLBUS/GGSS is a joint project of the Center for Survey Research and Methodology (ZUMA - Zentrum für Umfragen, Methoden und Analysen e.V., Mannheim) and the Central Archive for Empirical Social Research (ZA- Zentralarchiv für Empirische Sozialforschung, Cologne) in cooperation with the ALLBUS scientific council. Data and documentation are obtainable through the Central Archive for Empirical Social Research (ZA, Cologne). The institutions and persons mentioned above bear no responsibility for the use or interpretation of the data in this publication.

<sup>3</sup> For the full text in this and other questions, see the appendix.

<sup>4</sup> For this statement and hereafter, we use the translation proposed by the ALLBUS Codebook 1980-2004.

<sup>5</sup> Since we are aware of a possible “reverse causality”; meaning those who think that the social differences are unfair might be more likely to be in favour of socialist ideas and not vice versa, the variable NEED remains our main indicator.

<sup>6</sup> “The scale assigns a value of 1 to the households head, of 0.5 to each additional adult member and of 0.3 to each under-aged child.” (<http://www.oecd.org/els/social>)

<sup>7</sup> Year dummies are included in all set-ups and the likelihood ratio test justifies their introduction.