
Inter- and intragenerational differences in corrupt behavior: the development of morals after German reunification

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Abstract

We investigate differences in bribing decisions among two generations from East and West Germany in a bribery game conducted as an online study (N=168). This way, we aim to explore moral considerations of individuals influenced by two formerly different institutional systems. We find a higher propensity to bribe among young Germans compared to the older generation. Young East Germans even reveal a slightly greater inclination to bribe than their West German counterparts. We conclude that preferences for personal favors may be induced among young East Germans given the tense relationship between market opportunities and conveyed cultural traits of a socialist imprint.

JEL classifications: C91, D73, D91, J14, P51

Keywords: Moral behavior, Corruption, Intra- and intergenerational study, Institutional transformation, Reunification

1. Introduction

The relationship between market environments and individuals' moral behavior has been widely debated in scientific discourse (e.g., Bowles, 1998; Falk & Szech, 2013; Sandel, 2013; Shleifer, 2004). While institutional conditions characterize market environments to a significant extent (Greif, 2006), they also have been found to be associated with certain norms that are adopted by individuals, shaping their preferences and beliefs, and prevail

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in a society as a cultural base, influencing its economic development (Alesina & Giuliano, 2015; Guiso et al., 2006; Tabellini, 2010). In consequence, understanding the impact of market-oriented institutions on individuals' moral behavior may help to explain certain economic outcomes in market-influenced societies. In this regard, considering institutional shocks that may result in a change of cultural traits provides a useful framework (see Alesina & Giuliano, 2015; Giavazzi et al., 2019, for an overview of the theoretical and empirical literature). While cultural traits seem to persist in a cohesive society (Giuliano, 2007; Guiso et al., 2016; Voigtländer & Voth, 2012), institutional shocks offer the opportunity to explore how individuals' preferences and beliefs develop and are transmitted to upcoming generations. In particular, we need to understand how a society is affected in terms of its moral behavior when institutions start embracing market opportunities after strict regulations have been in place for a long time (Ariely et al., 2015; Giavazzi et al., 2019).

The reunification of Germany provides a framework to study the impact of institutional conditions on moral behavior in a fairly homogeneous population (Alesina & Fuchs-Schündeln, 2007). The rise of socialism¹ in East Germany and a market-oriented system in West Germany led to a separate development for about 40 years (Fullbrook, 2015). This has created individual differences induced by distinct cultural traits in both societies (Alesina & Fuchs-Schündeln, 2007; Arnhold, 2009), independent of former historical influences on the institutional level that arguably shaped both parts of Germany (Becker et al., 2020). Empirical studies have not only found differences in preferences between East and West Germans but have also compared various preferences among different age groups and identified a convergence process to varying extents for younger East and West German citizens approaching a cultural agreement in political, attitudinal, and work-related issues (Alesina & Fuchs-Schündeln, 2007; Bondar & Fuchs-Schündeln, 2023; Heineck & Süßmuth, 2013; Pop-Eleches & Tucker, 2017; Sack, 2017; Schmelz & Ziegelmeyer, 2020; Svallfors, 2010). This convergence process could be decelerated if the young generation is strongly shaped by cultural and social differences that were once established in Germany while the country was divided (Alheit, 2005; Arnhold, 2009). Older relatives, who indeed experienced two different regimes, may have a strong influence during the socialization process of the young (Bondar & Fuchs-Schündeln,

¹ When referring to socialism in this paper, we acknowledge that some related studies refer to communism instead. We do not want to distinguish between these ideas and their application to East Germany in detail and consider the two concepts in line with other researchers (Fuchs-Schündeln & Schündeln, 2020).

2023; Bisin & Verdier, 2001; Giavazzi et al., 2019). This argument is supported by consistent findings reporting less cooperation and trust in East Germans among different generations (Brosig-Koch et al., 2011; Ockenfels & Weimann, 1999). These findings point to the lasting impact of an institutional system that created uncertain conditions in working and social environments in the society. Several studies argue that living under a socialist regime systematically diminished social exchange in the population and fortified a norm of distrust to anyone apart from the closest persons, which changes only gradually caused by intergenerational transmission (Bondar & Fuchs-Schündeln, 2023; Paldam & Svendsen, 2001; Kunioka & Woller, 1999; Raiser, 1999; Sandholtz & Taagepera, 2005). In the case of fragile moral considerations and emerging market opportunities in unstable institutional conditions, the likelihood that individuals will make decisions for personal benefits without evaluating the moral implications rises (Bowles, 1998; Sandel, 2013; Sandholtz & Taagepera, 2005). The cognitive mechanism that explains this kind of behavior is described by Bandura (1999) in his social cognitive theory as the concept of moral disengagement. Bandura (1999) outlines several ways that individuals may apply to justify their actions to themselves, e.g. diffusion of responsibility or advantageous comparisons. The concept of moral disengagement is in line with the empirical findings of Falk and Szech (2013) who claim that interaction in markets among several actors disintegrates morals in terms of a distinctive neglect of norms that encourage cooperation and trust, a materialistic focus, and a reduced sense of guilt. However, Bartling et al. (2020) argue that this conclusion requires more empirical evidence considering specific institutional conditions. In this regard, we aim to examine the following questions: Do individuals who socialized in a socialist institutional environment differ substantially in their moral considerations from individuals of the same generation that have only experienced a market-oriented institutional environment? Can we observe the same pattern among individuals that may only be indirectly affected by the former institutional systems but grew up uniformly in a market-oriented institutional system?

To examine these two related questions empirically, we conducted an online study with German subjects in a 2 x 2 design with cohorts from East and West Germany born clearly before or after the German reunification in 1990. Using classEx, designed to create online lab-in-the-field experiments, we implemented a bribery game for which we recruited 168 participants. Focusing on first-round results to infer moral considerations

instead of strategic thinking, we find a significant difference in the propensity to offer bribes between generations. The cohorts *born after 1990* from both *East* and *West* Germany offered significantly more bribes compared to the cohorts *born before 1990*. Additionally, the intragenerational comparison reveals no significant differences between *East* and *West*, but it indicates that *East* Germans *born after 1990* have a slightly higher inclination to offer a bribe compared to their Western counterparts. While this difference between the younger cohorts does not turn out statistically significant, we provide a discussion that could explain an increasing contempt of moral considerations by *East* Germans *born after 1990*. In short, we conjecture that *East* Germans who socialized in the German Democratic Republic are likely to have internalized corrupt practices as acceptable for the sake of improving their personal situations marked by restrictions and limited material property (Jacob & Tyrell, 2010; Kopstein, 2001; Sandholtz & Taagepera, 2005). These acquired beliefs may be transmitted to the younger generation of East Germans (Bondar & Fuchs-Schündeln, 2023; Giuliano, 2007; Guiso et al., 2016), who could add their experiences with the market-oriented institutional system to the adapted cultural traits (Giavazzi et al., 2019). This could imply that when provided with market opportunities, the younger generation of East Germans may exploit these to compensate for perceived disadvantages disregarding moral considerations (Arnhold, 2009). This behavior could be initiated by the cognitive process of moral disengagement, which is facilitated in uncontrolled market environments that allow for personal enrichment at the expense of others (Bandura, 1999; Bowles, 1998; Sandel, 2013; Takacs Haynes & Rašković, 2021). Thus, harmful experiences with socialist institutions that may be transmitted to individuals who socialized in a market-oriented environment may result in somewhat lower moral considerations among individuals born after an unstable phase of institutional transformation (Giavazzi et al., 2019; Giuliano & Nunn, 2021; Guiso et al., 2008).

Overall, we shed light on the relationship between moral considerations and the influence of markets under the condition of institutional transformation from several perspectives. Firstly, we argue to evaluate the impact of market conditions on individual moral considerations concerning the influence of socialization processes that may be shaped by older generations' experiences in former institutional environments and present perceptions of individuals about given opportunities in a market-oriented system. Secondly, we contribute to this perspective through our intergenerational study approach

calling for considering age-diverse samples. This way, we extend the ongoing discussion on the convergence process of preferences and beliefs in the post-socialist East German society to the West German society that has experienced a market-oriented environment for a longer period (Bondar & Fuchs-Schündeln, 2023). Thirdly, we emphasize the consideration of the cognitive mechanisms that influence moral considerations in market environments on the individual level by relating our results to the concept of moral disengagement. This concept provides a useful framework for explaining individual preferences in societies that have undergone an institutional transformation.

The remainder of the article is structured as follows. In section 2, we provide background information on the relationship between institutions and morals, as well as on the effect of institutions on cultural traits in the specific case of Germany by consulting the recent literature. Section 3 describes our study design and sample characteristics. The results presented in section 4 are subsequently discussed in section 5. A final classification of the study in the related literature, limitations of the study, and suggestions for future research conclude this paper in section 6.

2. Background

2.1. The effect of institutions on morals

Formal institutions have been established in societies to foster responsible social interaction between individuals comprising laws and constitutions. Those formal institutions emerge from formerly implicit rules in a society that have been learned and conveyed over time (North, 1991). North (1991) refers to these implicit rules as informal institutions, which are, in turn, influenced by the introduced formal institutions. Informal institutions determine individuals' interaction within the scope of the formal rules (Aghion et al., 2010). Alesina and Giuliano (2015) provide an overview of how the interdependence of formal and informal institutions evolves, shaping the values and beliefs of individuals. They emphasize that informal institutions are congruent with the culture of a society and influence entire generations. An intergenerational transmission of values and preferences has been corroborated both theoretically and empirically (Bisin & Verdier, 2001; Giuliano, 2007; Guiso et al., 2008, 2016; Voigtländer & Voth, 2012). Bowles (1998) states that institutions have long-term effects on cultural traits that can influence the behavior of individuals, conveyed to upcoming generations through learning. This

persistence of cultural traits is especially prevalent if the institutional environment remains stable over several generations (Giuliano & Spilimbergo, 2014).

However, several scholars have shown that cultural traits can also be adapted to new circumstances by younger generations who adjust their experiences away from prior customs of older generations (Giavazzi et al., 2019; Guiso et al., 2008). If conditions differ substantially among generations and prior values and preferences of the older generation are regarded as less important by the younger generation, this adaptation process becomes stronger (Giuliano & Nunn, 2021). Profound changes in the institutional environment have a significant impact on a society's cultural traits (Alesina & Giuliano, 2015; Giavazzi et al., 2019; Giuliano & Nunn, 2021). Then, the cultural transmission to younger generations is updated through learning processes that involve vertical and horizontal transmission (Giavazzi et al., 2019; Giuliano & Spilimbergo, 2014; Guiso et al., 2008). While vertical transmission refers to learning processes initiated by the parents, horizontal transmission comprises the imitation and adaptation of the social environment in its entirety (Giavazzi et al., 2019). Considering a model of socialization and identity, Giavazzi et al. (2019) investigated the development of various cultural traits over several generations of US immigrants exposed to new institutional conditions and found a wide divergence in the persistence and speed of evolution of cultural traits across generations and a dependence on the country of origin. Although this study considered data from individuals who deliberately chose to live in a new environment, the results highlight the need to consider the transmission and adaptation of cultural traits separately. Hence, examining the consequences of institutional change on individuals' moral considerations, as a particular cultural trait that affects the way individuals interact and business-related outcomes of a society, is crucial to gaining insight into cultural transformation within societies.

Regarding the range and conceptualization of morals, Tabellini (2008, 2010) investigated the intertwined relationship between institutions and the extended concept of limited and generalized morality, differentiating between applying individuals' moral considerations to either a specified familiar environment or the society as a whole. Using survey data, he highlights the relevance of generalized morality in explaining economic success caused by institutional conditions. However, he used several separate cultural indicators (trust, respect, obedience, and control) to measure generalized morality, which does not necessarily capture moral considerations but rather represents a combination of

attitudes (Alesina & Giuliano, 2015). Thus, we consider the examination of actual moral considerations in an applied setting and the relationship between its cultural transmission and varying institutional conditions a valuable extension to the present research on morals as a cultural trait and institutions.

Empirical evidence for the impact of (changing) institutional conditions on individual preferences and beliefs can be obtained by comparing socialism and capitalism as two opposing politico-economic systems (e.g., Alesina & Fuchs-Schündeln, 2007; Kim et al., 2017; Shahrier et al., 2016; Shiller et al., 1992; Sieben & Halman, 2015). For example, Shahrier et al. (2016) find in a field experiment using a social value orientation game that capitalism results in less pro-social and more competitive behavior comparing samples from rural, transitional, and capitalist societies. Using data from the European Values Study in 2008, Sieben and Halman (2015) show that individuals living in former Soviet states value morality higher when it comes to the provision of public goods. These findings of lower social and moral considerations in capitalist systems are in accordance with an extensive body of literature that raises concerns around the effect of an increasing market-oriented appraisal of every measurable entity on ethical standards (e.g., Bowles, 1998; Sandel, 2013; Shleifer, 2004). Fundamentally, Bowles (1998) describes the discouraging effect of markets on the development of norms that favor cooperation and trust in social interaction. Although positive effects of social interaction may occur in a market-based exchange, contracts of a non-binding, short-term nature, as well as information asymmetry, hinder trustful and considerate interaction, thus reducing moral considerations.

Recent studies have empirically corroborated the suspected harm of specific market conditions on moral considerations (Bartling et al., 2015; Falk & Szech, 2013; Irlenbusch & Saxler, 2015). Comparing single-choice and market settings, Falk and Szech (2013) infer from their results of increased bargaining in multilateral conditions with potentially harmful consequences that interaction in market environments disintegrates individuals' moral considerations by inducing a neglect of norms that encourage cooperation and trust, a materialistic focus, and a reduced sense of guilt. Bandura (1999) outlines that certain environments enable people to attribute the consequences of their actions to other entities by the diffusion of responsibility or to evaluate the consequences less negatively in comparison to the negative actions of others. These mechanisms may evolve gradually in individuals depending on the environment they are exposed to. The application of the

concept of moral disengagement to investigate the impact of institutional conditions on moral considerations may provide a useful framework to explain why individuals behave differently regarding their experiences in varying institutional environments. The consideration of different institutional environments is stressed by Bartling et al. (2015), who compare a Swiss and a Chinese sample in a laboratory setting in which subjects could opt for products with or without negative externalities. The comparison of samples reveals that a lower proportion chose the product without negative consequences but with higher personal costs in the Chinese sample, deducing the existence of different cultural norms regarding moral considerations.

Since these findings suggest deleterious effects of market conditions on morals in settings comparing single choices and decisions influenced by other parties through mechanisms of moral disengagement that may depend on institutional conditions, the regulation of formal institutions is needed to mitigate negative externalities for the respective society (Bartling et al., 2015). That being said, the way formal institutions are implemented and enacted is a crucial factor for the development of preferences and beliefs in a society (Greif, 2006), which in turn manifest the formal institutions (Alesina & Giuliano, 2015). Aghion et al. (2010) outlined this interrelation using measures on (demand for) government control and trust in economic and political institutions, highlighting the importance of well-established formal institutions for favorable economic development determined by the beliefs of individuals about a well-functioning society. The results of Devos et al. (2002) underline this reasoning since they find a positive relationship between confidence in institutions and values emphasizing stability and the preservation of traditional customs in society. At the same time, their results present a negative relationship between institutional trust and the desire for societal change. Thus, the quality of institutions may lead to very different economic and attitudinal outcomes when comparing market economies and generalizing the effects of markets on morals does not necessarily paint the whole picture. However, consistent institutional systems with strong tendencies toward state regulation or liberal markets create conditions that may affect individuals' moral considerations as a set of beliefs and attitudes substantially in a very different shape. We use the example of Germany in the following section to explain the consequences of the established institutions in the opposing politico-economic systems of East and West Germany after the country's separation. Furthermore, we review the

development of cultural traits among different generations in Germany enclosed by a transformational process.

2.2. The temporary division of East and West Germany

The German reunification serves as a prominent historical event offering a compelling methodological opportunity to compare individuals of distinct generations who obtained a different cultural imprint induced by two opposing politico-economic systems - capitalism and socialism - and now live in one nation under the same formal institutions (Fulbrook, 2015). According to Roth et al. (1991), comparative studies within one nation reduce methodological issues concerning the framing effect, the experimenter effect, the language effect, and the currency effect. Although Becker et al. (2020) point out certain limitations when making inferences to the lasting effects of the politico-economic systems on East and West Germans, cautiously controlling for individual experiences and selective migration allows for an interpretation regarding the country's separation.

Since we are interested in the lasting impact of institutional conditions on the development and manifestation of moral considerations in economic decision-making, we first need to determine the expected effects of the distinct institutions on morals in decision-making processes. On the one hand, a market-oriented institutional environment emerged in the Federal Republic of Germany after its establishment in 1949 (see Fulbrook, 2015, for a historical treatise on the development of Germany in the 20th century). The promotion of autonomy and individualism led to material success, vast opportunities to pursue personal interests, and participation in political debates to shape formal institutions (Schmelz & Ziegelmeyer, 2020). This expanded freedom with only limited restrictions and abundant market opportunities may have unintentionally caused individuals to favor materialistic opportunities to the detriment of moral considerations (Bowles, 1998; Sandel, 2013).

On the other hand, the regime in the German Democratic Republic imposed restrictive formal institutions that were enforced through strict surveillance and punishments (Jacob & Tyrell, 2010). Conformity and obedience were established as cultural traits during educational learning processes and were a prerequisite to improve economic living conditions (Arnhold, 2009). Thus, the limitation of freedom might have led to a sense of striving for economic prosperity beyond the limited allowable

opportunities (Sandholtz & Taagepera, 2005). Being deprived of these opportunities and facing consistent economic inequality after reunification could have resulted in an undermining of moral considerations (De Mey & Schulze, 1996; Kopstein, 2001; Takacs Haynes & Rašković, 2021).

To date, several studies have scrutinized the German reunification to examine the lasting impact of socialization in a capitalist or socialist system on cultural traits, as well as when these might converge over time, by applying quasi-experimental and survey-based methods. The majority of studies have delivered survey-based results to show that differences in many cultural traits exist between East and West Germans born and socialized in the two opposing politico-economic systems but converge among younger generations (Alesina & Fuchs-Schündeln, 2007; Bondar & Fuchs-Schündeln, 2023; Heineck & Süßmuth, 2013; Sack, 2017; Svallfors, 2010; Torgler, 2003). Game-based quasi-experimental studies have been conducted less frequently and reveal mixed results regarding the convergence of cultural traits among younger participants. While Brosig-Koch et al. (2011) replicated the seminal study by Ockenfels and Weimann (1999) on selfish behavior, finding consistent differences between the East and West German student samples, a study by Pfarr et al. (2013) on the willingness to pay for redistribution does not yield significant differences between East and West Germans in the experimental part of their study. Additionally, Schmelz and Ziegelmeyer (2020) find differences between East and West German citizens for control aversion, persisting only for older generations and converging among younger generations. An overview of empirical studies on the differences between and convergence of cultural traits among East and West Germans is summarized in Table 1.

Overall, the scientific discourse has yet to provide a conclusive answer regarding the existence and duration of a convergence process of cultural traits in Germany. However, different results for various cultural traits might be expected (Giavazzi et al., 2019). Since the convergence of morals has rarely been studied in this context (Meulemann, 1998; Krettenauer et al., 1994), we aim to explore this cultural trait concerning the implications of the institutional conditions before the reunification of Germany. However, identifying the inclination toward moral considerations does imply certain difficulties and limits the suitable procedures for empirical investigation (Abbink, 2006). For our study, we rely on a corruption scenario, the features of which are described in the following section.

Table 1: Overview of empirical studies on differences and convergence of cultural traits between East and West Germans

Author	Year	Sample	Study design	Result
Ockenfels and Weimann	1999	Students	Lab-based study	In public good and solidarity experiments, East Germans behaved significantly more selfishly.
Brosig-Koch et al.	2011	Students	Lab-based study	Using the same experimental setting as (Ockenfels and Weimann, 1999), persistent differences in solidarity were found. East Germans behaved significantly more selfishly than West Germans.
Ariely et al.	2019	Berlin citizens	Field study	In a cheating die task, more dishonest behavior among older East Berlin citizens compared to those from West Berlin was observed. No differences were found in two distinct cities in East and West Germany.
Schmelz and Ziegelmeyer	2020	Graduates	Online study	Using a 2 x 2 experimental cohort design, crowding-out of intrinsic motivation was found to be due to enforcement that was stronger for West German than for East German workers. Differences in control aversion were only identified for older generations, pointing to a convergence effect.
Pfarr et al.	2013	Representative sample of East and West Germans	Survey & discrete-choice task	Results indicate that East Germans prefer a higher amount of redistribution. At the same time, they were not willing to contribute more of their assets through taxation.
Torgler	2003	World Value Survey Panel 1990 and 1997	Panel analysis	East Germans accept cheating on taxes significantly less than West Germans. This difference decreases over time, and avoiding taxes becomes increasingly justifiable among East Germans while the proportion remains at the same level for West Germans.
Alesina and Fuchs-Schündeln; Bondar and Fuchs-Schündeln	2007; 2023	German Socioeconomic Panel 1997 and 2002, respectively 2017	Panel analysis	Differences in preferences for redistribution and state intervention converge over time.
Rainer and Siedler	2009	German General Social Survey 1991, 1994, 2002, and German Socioeconomic Panel 2003	Panel analysis	Higher social and institutional distrust among East Germans persist over time and indicate no significant convergence effect.
Svallfors	2010	International Social Survey Program 1990, 1996, and 2006	Panel & cohort analyses	A convergence effect was found for the attitude toward governmental responsibilities. East Germans generally favor state intervention; their approval declines significantly over time.
Sack	2017	European Social Survey 2012	Factor & cohort analyses	A convergence effect was found for a democratic value orientation among Germans younger than 30 years. Older East German citizens still display a preference for a socialist democratic model.

2.3. Corruption and its implications for moral considerations

A phenomenon studied extensively to understand moral considerations in economic decision-making is corruption. Analyzing corruption from a multidisciplinary perspective, Dimant and Schulte (2016) conclude that individuals are more driven by moral and ethical concerns than by simple cost-benefit heuristics. Additionally, those concerns are shaped by the economic, legal, and political environment in which they live. Banerjee (2016) argues that our pursuit of moral behavior is driven largely by self-interest and provides empirical evidence by comparing the results of a harassment bribery game with those of a strategically identical but neutrally framed ultimatum game.

Furthermore, reciprocity and mutual trust have a decisive influence on the interaction of two or more individuals in scenarios involving corruption (Abbink et al., 2002). Reciprocity arises in the form of individuals' reaction to the actions of their counterparts (Rabin, 1993). It should be emphasized, however, that the necessary trust between individuals must first be built up. This condition is only fulfilled in sequential strategic situations that require interaction over several encounters. In these conditions, strategic reciprocal considerations are the main motivator to engage in corrupt behavior, determining the amount and size of bribes (Abbink, 2004; Schikora, 2011).

There are certainly also other factors, especially on the macro level, that may systematically influence corrupt behavior. For example, Shleifer and Vishny (1993) identifies the structure of government institutions, determining the number of authorities to approach as well as the frequency and size of bribes, as a substantial determinant of the extent of corruption. Nevertheless, economists have started to analyze corruption from the micro-perspective using lab-based settings. Developed by Abbink et al. (2002), the bribery game studies a strategic interaction between two players acting as a briber and a public official. It is used to analyze the reciprocal relationship between the two actors. In addition, the authors of the study extended the design of the game using separate treatments by the practically relevant factors of, the negative externalities for third parties, and the threat of severe sanctions. Running two sessions with different subjects for each of the three different treatments, Abbink et al. (2002) find strong reciprocal behavior on the part of both players and essentially no impact on behavior if negative externalities for third parties were introduced. However, introducing a so-called 'sudden death' treatment in which there is a low probability that the corrupt behavior will be revealed results in

significantly reduced transfers and increased offer rejections. Furthermore, Abbink and Hennig-Schmidt (2006) find no significant difference in the results comparing loaded to neutral framing in the bribery game, concluding that there is no support for an instruction framing effect. This contradicts Barr and Serra (2009), who find evidence for a framing effect in a bribery game created to analyze petty corruption. We adapted the procedure of Abbink et al. (2002) to study moral considerations in an economic decision-making scenario involving social interaction and extended our focus to the impact of experiences under specific institutional conditions. We assume that growing up under two different regimes and being subject to strongly disparate institutions, favoring or rejecting a market-oriented economy, has a lasting impact on moral considerations.

Based on the theoretical model of institutional learning put forward by Bowles and Gintis (2011), we deduce that the generation of East Germans who grew up in a socialist economy has internalized corrupt practices as viable options to improve personal outcomes since these procedures were normalized in society due to its institutionalization (Kopstein, 2001; Sandholtz & Taagepera, 2005; Takacs Haynes & Rašković, 2021). In contrast, the generation of West Germans who grew up in a market-oriented economy before reunification has experienced favorable market conditions leading to economic success and high institutional trust (Rohrschneider & Schmitt-Beck, 2002). However, Rohrschneider and Schmitt-Beck (2002) show that institutional trust declined constantly over the years among West Germans, giving rise to the assumption that a gradual process for mechanisms of moral disengagement was stimulated among individuals that experienced less economic success over time. The negative consequences of markets as outlined in section 2.1 might have already influenced the generation of West Germans born before reunification to a certain extent. Yet, this gradual process should be less formative in an individual exchange for personal profits which shapes the nature of a corrupt act as described above. Thus, we derive the following hypothesis:

Hypothesis 1: Individuals socialized before reunification in East

Germany are more likely to offer a bribe than individuals socialized before reunification in West Germany.

Additionally, there might be an accumulated negative effect on young East Germans induced by the cultural transmission of former generations and internalized experiences

from the present market-oriented institutional environment. Specifically, present experiences are characterized by less economic welfare and perceived inequality to prosper compared to their Western counterparts. This, in turn, induces distrust in institutions and provokes the consideration of moral misconduct. In sum, adopted beliefs about bribing as a viable option combined with present opportunities to equalize perceived unfair conditions compared to their West German counterparts enhances the acceptance of bribing efforts (Sandholtz & Taagepera, 2005; Takacs Haynes & Rašković, 2021). Therefore, we derive the following hypothesis:

Hypothesis 2: Individuals socialized after reunification in East

Germany are more likely to offer a bribe than individuals socialized after reunification in West Germany.

3. Methods

We conducted an online study including participants from East and West Germany to investigate moral considerations in a corruption scenario in a 2 x 2 design. When selecting the cohorts, we considered a younger generation that was born and socialized after reunification in either West or East Germany as well as individuals above the age of 50 to ensure that these individuals had spent a sufficient number of years in the respective politico-economic system of East or West Germany before reunification. We utilized a bribery game in a partner design following the basic version presented in Abbink et al. (2002)². This version of the game allows us to examine individual moral considerations and reciprocal effects in the bribing exchange of two players. Abbink et al. (2002) also examine the effect of negative externalities and possible sanctions on the participants' bribing behavior. Since they only find a relevant effect for possible sanctions, we included this factor in our study design and omitted the implementation of external costs for bribing activities on a third party. After running three pilot trials to ensure the comprehensibility and technical smoothness of the online-based game, the study was executed between December 2020 and

²The study was preregistered at AEA RCT Registry (RCT ID: AEARCTR-0005397) and obtained ethical approval.

May 2021 using the software Zoom, while the game itself was implemented using classEx (Giamattei & Graf Lambsdorff, 2019)³.

3.1. Procedure

We conducted multiple sessions from December 2020 to May 2021, each of which addressed only one of the four cohorts in terms of age group and location in East or West Germany. However, due to individual movement from East to West German cities, sessions did not exclusively include participants whom we classified as East or West German. We only classified every individual after the session took place based on the information about their individual background stated in a post-hoc questionnaire. Potential participants received an invitation letter containing basic information about the study, a consent form, and a Zoom link for the respective session via email. Recruited participants were only permitted to attend the study if they submitted a signed consent form before the Zoom session started. In all sessions, the same person informed the participants of the study process, as well as the bribery game itself including the possible decisions and corresponding payoffs, in a 10-minute briefing⁴. Afterward, participants were directly connected to the game in classEx. At that point, participants were randomly assigned to the role of either entrepreneur or public official and matched with another participant to form random pairs of entrepreneurs and public officials. They remained in their role and with the same partner throughout the game. The two participants were paired anonymously and only had information about their respective roles and that they were playing with the same partner. There was no possibility of communication. Odd participants in the game were matched with an additional player, who was controlled by us, and duly compensated. Observations obtained from these participants were excluded from the analysis. We explicitly used a framed setting to emphasize the nature of the game⁵. Basically, the game consists of an entrepreneur who would like a public official to accept an application involving a varying payoff for both participants. We defined a currency for the game called Token to facilitate calculations for the participants. In the end, Token were converted into EUR based on an average hourly wage with an exchange rate of 1 Token to

³ Data and codes are available online on OSF (https://osf.io/9fzvp/?view_only=e980f7777e2b4fd3a37606637f4b9807).

⁴ Please find a translation of the original German instructions in Appendix A1.

⁵ Since Abbink and Hennig-Schmidt (2006) do not find significant differences in the bribery game used in this study, we relied on the advantages of a loaded setting.

about 0.021 EUR. One round of the game consisted of three decision stages. At each stage, only one player was confronted with a decision set, and both players decided sequentially. While the game was played, we visualized the procedure for the participants in the Zoom meeting in a game tree that participants could always refer to (Figure 1). The game was played over ten rounds. A repeated setting was used to allow for learning and reputation building in this reciprocal relationship. The payoff structure chosen was equivalent to the procedure used by Abbink et al. (2002), except that our design excluded negative external costs on a third party, which would have affected the final payoff of each player.

Stage One:

The entrepreneur has the option to send a transfer $t = (1, 2, \dots, 9)$ as a bribe to the public official or to trust in a favorable decision from the public official without offering a bribe $t = 0$. The decision to transfer an amount $t \geq 1$ reduces the entrepreneur's payoff by 2 Token independent of whether or not the public official accepts the bribe. This transfer fee represents the initiation cost of offering a bribe in this reciprocal relationship.

Stage Two:

The public official learns whether a transfer payment of size $t \geq 1$ was sent by the entrepreneur or not ($t = 0$). In case $t \geq 1$, the public official decides whether to accept (passive corruption) or reject the payment (behave compliantly). If the transfer is accepted, the public official receives triple the amount, i.e. $3 * t$. The introduction of this factor is necessary due to the diverging marginal utility both players derive from the transferred amount, assuming the income of the public official is much lower. Additionally, we included the sudden death option that models the danger of being caught while performing corrupt activities as introduced by Abbink et al. (2002). If the public official accepts an offered transfer payment, a lottery starts, which represents an audit and reveals the act of corruption with a probability of 0.3%. As this disclosure occurs in every round played, the overall probability of disqualification amounts to 2.96% ($= 1 - (1 - 0.003)^{10}$). In case of successful detection, both players are disqualified with zero payoffs and only receive the show-up fee. Both players remain in the session until the end and are also asked to answer the concluding questionnaire.

Stage Three:

In the third stage, the public official chooses between a denominated strategy X, to accept the entrepreneur's application, and a denominated strategy Y, to reject the entrepreneur's application. While strategy X is more advantageous for the entrepreneur, strategy Y is more favorable for the public official. Throughout the game, the appointed instructor announced each round without mentioning when the last round would be played to avoid bias in the final decision. After each round, participants were informed about the Token they earned according to the decision of the public official in the last stage. After ten rounds were played, the instructor announced the end of the game. Subsequently, participants were directed to fill out an online questionnaire. No time limit was set for completing the questionnaire. Finally, the respondents were asked to return to the Zoom meeting after completing the questionnaire. The whole session took about 30 to 40 minutes, including 10 minutes for the introduction and 20 to 30 minutes to play the bribery game and fill out the questionnaire. After the session, participants were informed about their overall payoff and the payment process via bank transfer⁶.

⁶ Next to the show-up fee, participants earned, on average, 8.00 EUR (SD 1.11) in the role of an entrepreneur and 7.60 EUR (SD 0.88) in the role of a public official. After completing the whole experiment (including the questionnaire and sendoff), some participants asked for the opportunity to donate their payoff for a charitable purpose. For these participants, we transferred the payoff directly to a welfare campaign and sent them the receipt for acknowledgment. Therefore, we transferred 95.17 EUR to "Deutsches Kinderhilfswerk". However, the possibility of donating the payoff was not given by design. Since this decision was made after the completion of the entire experiment and was offered as a service on inquiry, it did not affect the presented results.

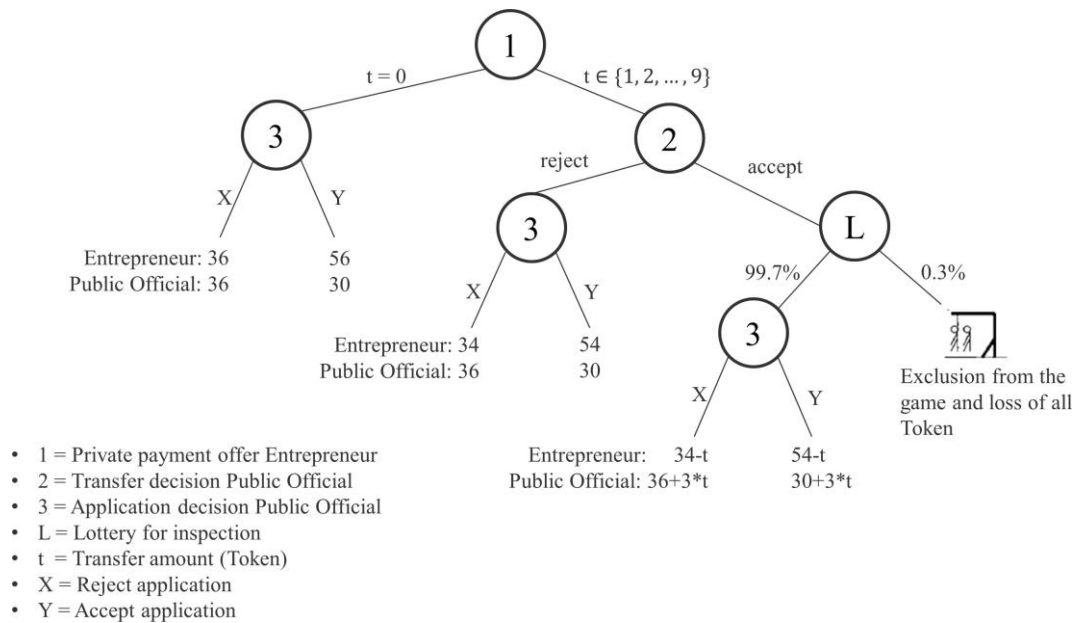


Figure 1: Game tree of the bribery game based on Abbink et al. (2002)

3.2. Dependent variables

To compare our results among the included cohorts separated by the two roles in the game, we quantify (1) the individual willingness to offer a bribe, independent of the transfer size, and (2) the transfer amount offered. The individual willingness to offer any bribe at all can be thought of as a dummy variable, which is 1 if the entrepreneur offers a bribe and 0 otherwise: *Bribe offered* (BO). The offered *Transfer amount* (TA) is represented by an integer between 0 and 9. While the variables BO and TA measure different dimensions of pro-active bribing behavior, which we are mainly interested in, the reaction by the public official to an offer measures strategic reciprocal behavior.

Therefore, we analyze the acceptance behavior not in detail but report the results for reasons of completeness in the Appendix B1. The acceptance behavior can also be represented by a dummy variable (*Bribe accepted*) (BA) that is 1 if the public official accepts an offered bribe and 0 otherwise. Since the acceptance of a bribe is only observed in the case of an offered bribe, the number of observations is lower than the overall decision to offer a bribe. Moreover, we only consider the entrepreneurs' proactive bribing behavior of the first round for the same reason. Decisions in the upcoming rounds are influenced by the outcomes of the former rounds and entail a substantial proportion of strategic and reciprocal considerations mitigating the moral considerations. Results for all rounds are also reported for completeness in Appendix B2.

3.3. Independent variables

Variables of interest

The key individual characteristics for our analysis are the generational experience (born before 1990) and the cultural experience (West). *Born before 1990* is a binominal variable, which is 1 if a person is born at least 20 years before the reunification in 1990 to ensure that these individuals have had profound experiences in the respective politico-economic systems. Concerning cultural identity, we consider migration effects and carefully analyze the subjects' movement over time (Becker et al., 2020). *West* is a binominal variable with $W \in [0, 1]$. $W = 1$ if a person (1) was born in West Germany and never relocated to East Germany, (2) was born in West Germany and relocated to East Germany after 1990 as long as the period between their year of birth and reunification was longer than between relocation and 2020, or (3) was born abroad and relocated to West Germany.

Control variables

Next to the variables of interest, we examine further socio-demographic characteristics and personal preferences that may affect the inclination toward corrupt behavior in our questionnaire, adopting questions that related studies have used before⁷. These covariates align to some extent with the variables used in the above-mentioned lab and field studies on the comparison of cultural traits among East and West German samples (Ariely et al., 2019; Brosig-Koch et al., 2011; Ockenfels & Weimann, 1999; Schmelz & Zieglmeyer, 2020). Firstly, we consider gender as a likely predictor for bribing efforts. Debski et al. (2018) find a significantly lower propensity toward corruption among women compared to men, which is underlined by Swamy et al. (2001), who show that corruption occurs less in countries with women in decision-making positions. However, Lambsdorff and Frank (2011) and Rivas (2013) do not find any evidence for gender-specific differences regarding the acceptance of bribes.

Secondly, the inclination to adopt corrupt practices may depend on the individuals' positioning about money. According to Cornell and Sundell (2020), both the individual's income level in comparison to the average and the use of money are corruption-reducing

⁷ The draft for the implemented questions of the online survey can be found translated to English from the original German version in Appendix A2.

factors. We included a survey item querying participants' attitudes toward the role of money in their life measured on a scale from 1 (unimportant) to 7 (very important). This approach has been validated in various questionnaires (e.g., Lay & Furnham, 2019) that measure aspects of money-related attitudes. Thirdly, the decision to conduct corrupt practices is associated with risk preferences (Cadot, 1987). Abbink et al. (2002) as well as Mir Djawadi and Fahr (2013) highlight that individuals in the bribery game systematically underestimate the probability of being detected. Yet, Mir Djawadi and Fahr (2013) do not infer a significant correlation between subsequently queried risk preference and actually displayed corrupt behavior in the game. We rely on a single item validated by Dohmen et al. (2011) and used in the German Socio-Economic Panel to measure each individual's risk preference measured as well on a scale from 1 (very risk-averse) to 7 (very risk-seeking). By considering these covariates based on our reading of the relevant literature on empirical studies investigating the inclination toward corrupt behavior, we acknowledge the likely interrelation of the second and third chosen predictor with our variables of interest. The role of money and risk preferences of our four cohorts may have been shaped by their experiences in different institutional environments. The relationship to cultural dimensions has been shown for the role of money (Vohs et al., 2006; Falicov, 2001) as well as for risk preferences (Hsee & Weber, 1999). Accordingly, these covariates need to be examined carefully in order to help us understand the impact of our variables of interest on bribing offer decisions of the participants.

3.4. Sample

For the younger cohort, we recruited first- and second-year Bachelor's students from two universities in East Germany and one university in West Germany, who were very likely to have been born after reunification. We restricted the sample to students above the age of 18 since they have full legal capacity, i.e., they are contractually capable as well as capable of tortious liability. We intentionally chose the young cohort at this age to prevent any direct experience with a strongly different institutional background given in Eastern Germany before the reunification. Anyway, we control for various information on the personal background like birthplace, relocations, or family origin in the questionnaire after the game to ensure an appropriate classification for our variable of interest as described above. Regarding the older cohort, we advertised the study in online classes

and newsletters for senior citizen students, i.e. individuals older than 50 years, who voluntarily enrolled in a university program out of personal interest in certain scientific topics. Since the number and availability of senior citizen students at the respective institutions were limited, we extended the scope to several universities in East and West Germany as well as the DENISS network (network for the interests of senior citizens in study programs).

In this regard, we expected all senior citizen students to have a basic understanding of the game setting and to be familiar with the technical prerequisites for participation in the study. Based on previous studies using the general design of the introduced bribery game (Abbink et al., 2002; Abbink, 2004; Abbink and Wu, 2017; Abbink et al., 2018), we aimed to obtain 25 pairs for each cohort. In the end, we included 39 participants born before reunification in *West* Germany (of which 18 were in the role of a public official), 28 participants born before reunification in *East* Germany (of which 16 were in the role of a public official), 54 participants born after reunification in *West* Germany (of which 28 were in the role of a public official), and 47 participants born after reunification in *East* Germany (of which 22 were in the role of a public official). It should be noted that we had to drop about 10% of our actual observations due to incomplete data, an uneven number of players in a session that was completed by an additional player controlled by the experimenter, unsuccessful matching, or multiple attendances in various sessions. Table 2 summarizes the age distribution within our cohorts.

Table 2: Summary statistics of participants by cohort

		West		East	
		born before 1990	born after 1990	born before 1990	born after 1990
Age	Mean	66.12	21.69	66.96	21.94
	SD	6.17	2.11	4.15	2.51
	N	39	54	28	47
Share Female in %		41.03	42.59	53.57	46.81

4. Results

We analyze first-round decisions of entrepreneurs to offer a bribe since they reflect the most unbiased behavior, driven by neither strategic considerations nor learning (Abbink & de Haan, 2014). Examining this offering behavior in our bribery game for each cohort gives insights into the relationship between morals and institutional conditions. Figure 2 shows that 44.05% of all subjects in the role of an entrepreneur do not offer a bribe in the first round. The distribution stresses an excess of no transfers made that we consider for our subsequent regression analysis.

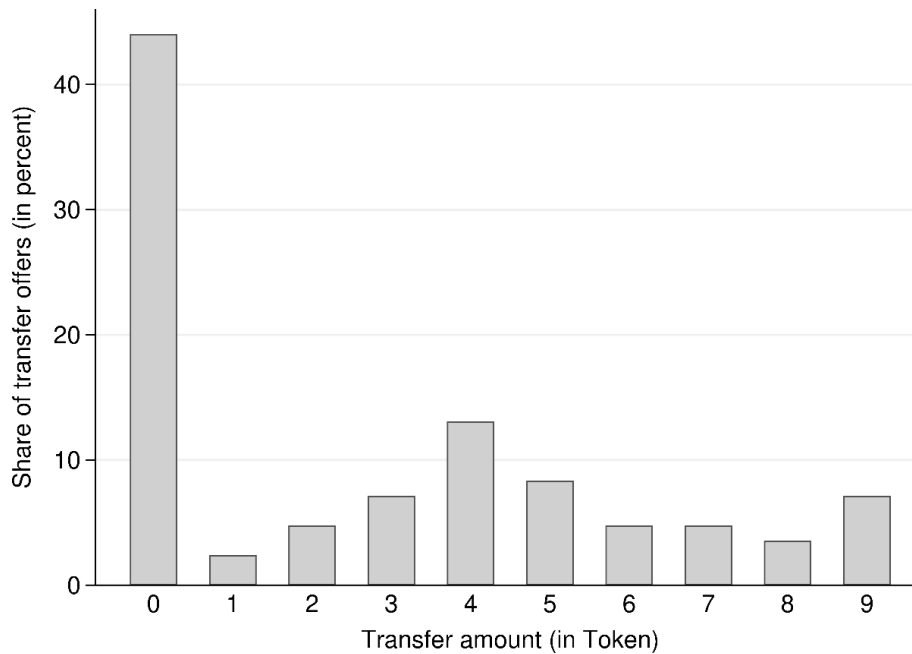


Figure 2: Share of transfer offers of entrepreneurs in the first round (n=84)

Of those who offered a bribe, 72.34% were *born after 1990*. Overall, of those subjects *born after 1990*, on average 66.66% offered a bribe, while this is the case for only 38.24% of those *born before 1990*. This difference estimated in a Mann-Whitney U-test is statistically significant ($p = .018$). Figure 3 shows the share of subjects per cohort who offered a bribe in the first round. Out of those *born after 1990*, the share who offered a bribe is higher among *East* Germans (70% compared to 64% of *West* Germans). However, this difference is not significant in a Mann-Whitney U-test ($p > .1$). Additionally, the share of those *born before 1990* offering a bribe is nearly equally distributed between *East* and *West* Germans, showing no significant differences in a Mann-Whitney U-test ($p > .1$).

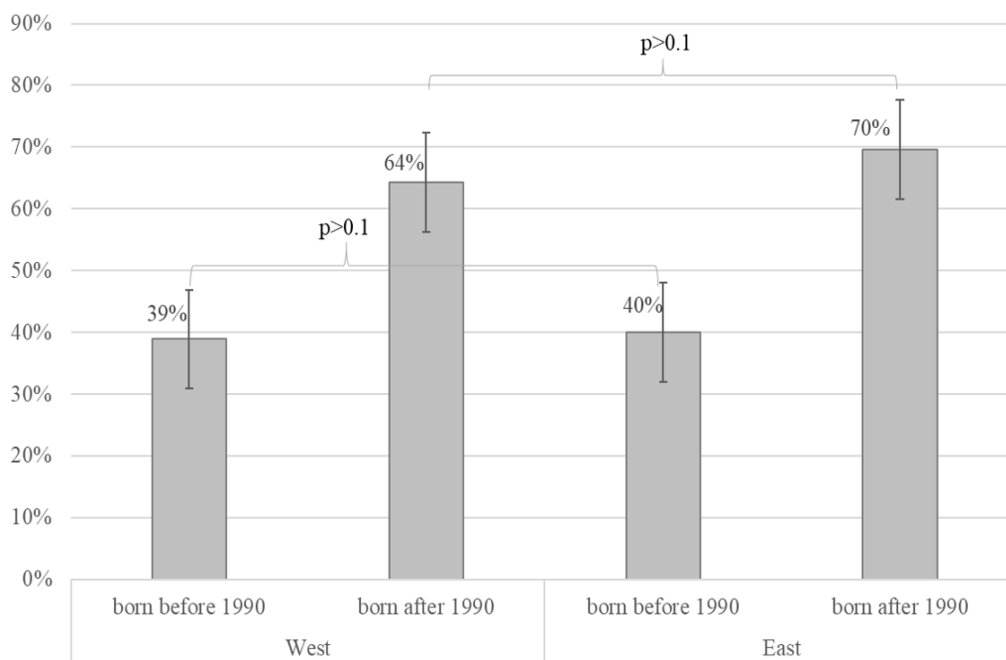


Figure 3: Bribe offered in the first round by cohort

Descriptive first-round results indicate that there is a difference in being born before or after reunification, while cultural identity seems to play a minor role in the willingness to offer bribes. To obtain a deeper understanding of the relationship of interest and to control for further influential factors, we apply a regression approach in the next step. To assess the inclusion of relevant covariates and likely interrelations among our chosen variables in our regression model, we first consider the results of our correlation matrix (Table 3).

Table 3: Means, standard deviations, and correlations of all considered variables ($n=84$)

Variable	Mean	SD	1	2	3	4	5
1. Transfer	2.82	3.05					
2. born before 1990	0.39	0.49	-0.19*				
3. West	0.55	0.50	-0.19*	-0.00			
4. Female	0.38	0.49	-0.07	0.07	-0.08		
5. Role of money	4.35	1.27	0.06	-0.16	0.02	0.06	
6. Risk preference	4.40	1.41	0.46***	-0.30***	-0.05	-0.10	0.28**

Note: * $p < .10$, ** $p < .05$, *** $p < .01$

Next to a significant negative correlation of both variables of interest *born before 1990* ($r = -.19, p = .091$) and *West* ($r = -.19, p = .087$) to the dependent variable, we also find a strong positive correlation for individual's risk preference to the dependent variable ($r = .46, p < .001$) and a strong negative correlation to the variable of interest *born before 1990* ($r = -.30, p = .005$). For the other covariates gender and role of money, we cannot find any significant correlation to the dependent variable. Role of money rather seems to indicate a similar pattern to the individual's risk preference. Thus, we decide to only include the individual's risk preference as a covariate in our regression model. Due to the excess of no transfers made, we consider a zero-inflated Poisson (ZIP) regression model. In this case, the ZIP accounts for two types of individuals that cause the excess of zeros following different distributions. First, there are individuals who consider offering a bribe but may reject doing so due to certain circumstances leading to the generation of Poisson distributed count data. Here, the ZIP includes a model for the TA from 0 to 9. Second, there are individuals who strictly refuse to offer bribes in any situation leading to an excess of zeros in the overall distribution. The ZIP includes this inflated model for offering no bribe using a probit specification. Thus, the values are reversed in comparison to our previously defined variable *BO*. To differentiate, we denominate this target variable of the ZIP *Zero transfer (ZT)*. In Table 4, models (1), (3), and (5) present the results for the TA using a Poisson specification, and models (2), (4), and (6) outline the results for the ZT using a probit specification. Models (1) and (2) include only both variables of interest *born before 1990* and *West*. Model (1) does not show a significant effect for the variable *born before 1990*,

while there is a significant positive effect in model (2) ($\xi = 2.45, p = 0.014$). Thus, being born before reunification increases the log odds of an inflated ZT by 0.714, i.e. there is a higher general refusal to offer any bribe for those being born before reunification. Regarding the variable *West*, we find a significant negative effect for model (1) ($\xi = -2.68, p = .007$) and no significant effect for model (2). The significant result in model (1) implies a decrease in the expected log count of 0.387 for the TA, i.e. the likelihood of a lower transfer increases for those from West Germany.

We add an interaction term of both variables of interest in models (3) and (4) to investigate potential dynamics among our cohorts. While the main effects remain consistent for *born before 1990* and *West*, the interaction term does not turn statistically significant, thus, not improving the regression model. Nevertheless, we plot the predictive margins for the probabilities to choose ZT for each of our cohorts given the interaction effect in Figure 4. While there are clearly no differences among the cohorts born before reunification, we observe a marginal trend toward a lower probability of offering no transfer for the cohort from East Germany among the younger cohort, which does, however, not turn out statistically significant in a post-hoc pairwise comparison. More clearly, the older cohorts generally have a higher prediction of ZT than the younger cohorts, but that does not imply relevant dynamics among the cohorts to justify an inclusion of an interaction term in our regression model.

Thus, for the final models (5) and (6) we omit the interaction term and only include the relevant covariate of risk preference. While risk preference has a significant positive effect in model (5) and a significant negative effect in model (6), the main effects of *born before 1990* and *West* only reduce marginally and remain significant. To check the fit of our model specification, we compare the results of our ZIP model with a zero-inflated negative binomial regression as well as with non-zero-inflated Poisson and negative binomial regression models. The ZIP model provides the best values among the information criteria of Akaike and Bayes justifying our selection for a ZIP model (see Appendix C for the detailed values).

While we present first-round results on whether or not bribes were offered at all, which provide the most relevant measure for moral considerations, we also examined the acceptance of offered bribes and offering behavior over multiple rounds. The calculations mostly align with our more intuitive results on first-round offering behavior (see Appendix

B1 and B2). The probabilities of accepting an offered bribe independent of analyzing first-round or multiple-round behavior as well as of offering bribes for all rounds are significantly higher for the young cohorts. Additionally, among our cohort *born before 1990 East* Germans have higher probabilities of accepting offered bribes and of offering bribes for all rounds compared to their *West* German counterparts. Yet, among the cohort *born after 1990 West* Germans have a higher probability of accepting offered bribes in the first round and of offering bribes for all rounds than their *East* German counterparts, which contrasts with our results on first-round offering behavior.

Table 4: Zero-inflated Poisson regression models on first-round transfer offers

	(1) TA (Poisson)	(2) ZIT (Probit)	(3) TA (Poisson)	(4) ZIT (Probit)	(5) TA (Poisson)	(6) ZIT (Probit)
born before 1990	0.099 (0.153)	0.714** (0.291)	0.049 (0.177)	0.769* (0.431)	0.176 (0.139)	0.517* (0.306)
West	-0.387*** (0.132)	0.079 (0.287)	-0.387*** (0.145)	0.119 (0.375)	-0.329*** (0.120)	0.051 (0.296)
born before 1990 x West			0.111 (0.314)	-0.097 (0.585)		
Risk preference					0.155*** (0.037)	-0.288*** (0.110)
Constant	1.754*** (0.088)	-0.495** (0.243)	1.768*** (0.088)	-0.518* (0.277)	0.948*** (0.217)	0.847 (0.577)
N	84	84	84	84	84	84

Note: Robust standard errors are reported in parentheses.

* $p < .10$, ** $p < .05$, *** $p < .01$

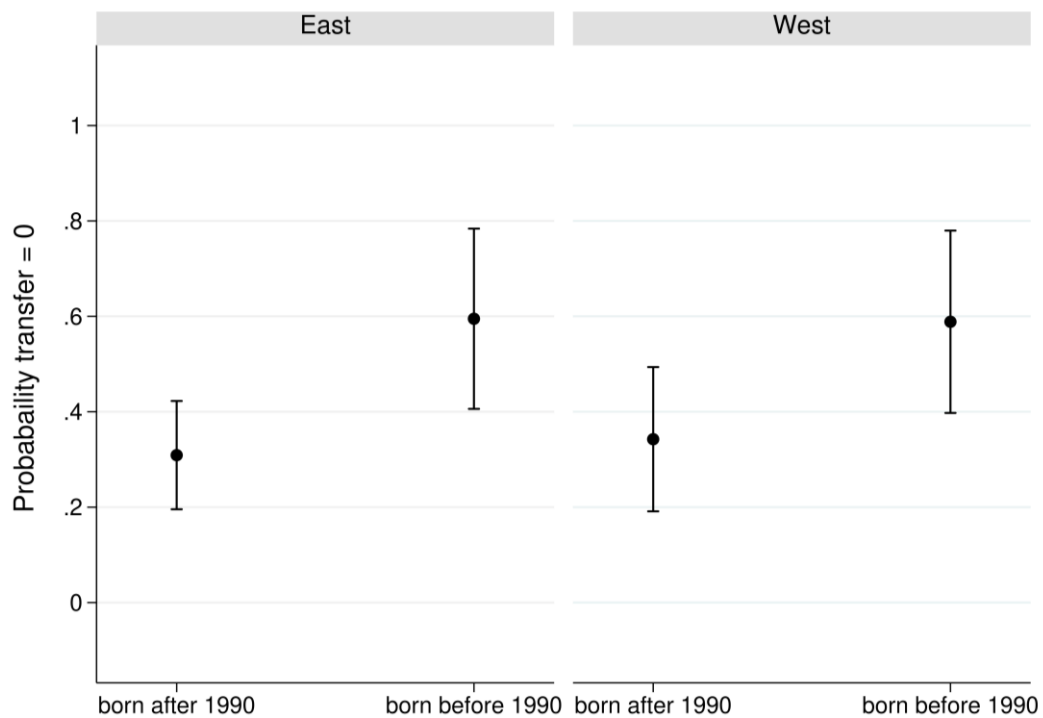


Figure 4: Predictive margins and 95% CI - First-round zero transfer results

5. Discussion

We contribute to the literature by discussing a potential relationship between institutional environments and individuals' moral considerations in decision-making processes (e.g., Bartling et al., 2020; Bowles, 1998; Falk & Szech, 2013; Sandel, 2013; Shleifer, 2004). Our investigation focuses on the influence of changing institutional conditions determining the extent of market experiences for individuals and their inclination to offer bribes as a specific form of less moral consideration. According to Dimant and Schulte (2016), behavior in corruption scenarios is rather driven by moral concerns than by cost-benefit calculations, which supports our approach to infer moral behavior from first-round decisions made in the setting of a bribery game. Moreover, Dimant and Schulte (2016) state that the individuals' moral concerns are shaped by the institutional environment in which they live. Thus, we explore the bribing behavior among generations who experienced different institutional environments, particularly during their time of socialization. In general, our results in Table 4 suggest that being socialized in *West* Germany correlates with a lower transfer amount and being *born before 1990* correlates with a lower propensity to offer a transfer at all, thus making no bribing

attempt. Regarding a generational comparison, the interaction effect for *West* and *born before 1990* only shows a slight divergence between *East* and *West* Germans in the younger cohort, which does not turn statistically significant. These results do not clearly support *Hypothesis 1*, for which we argued to find more bribing offers among individuals from *East* Germany *born before 1990* due to their experiences of institutionalized corruption in the socialist German Democratic Republic that led to a normalized perception of corruption as acceptable. Although we find a lower probability for smaller transfer amounts among individuals from *West* Germany, this does not imply that there have been fewer bribing attempts by the cohort from *West* Germany *born before 1990*. Figure 4 rather suggests that there are no differences at all among the cohorts *born before 1990*. Furthermore, Figure 4 illustrates that the cohort from *East* Germany has the lowest probability to offer no bribe. However, this slight divergence does not support *Hypothesis 2*, for which we argued to find a combined effect of transmitted values from a socialist East Germany and a perception of unequal opportunities compared to the West German counterparts for those individuals from *East* Germany *born before 1990* facilitating their acceptance of corrupt practices, since there is no significant difference in the bribing offers among the cohorts *born after 1990*. We rather find a significantly stronger refusal to offer any bribe among the cohorts *born before 1990* compared to the cohorts *born after 1990*. We try to expand on these results in the following. We aimed to shed light on the assertion that markets have a deleterious effect on morals (Bowles, 1998; Falk & Szech, 2013; Sandel, 2013). Generally, we cannot identify a clear result that would support a harmful impact of being socialized neither in a market-oriented nor socialist institutional environment for offering a bribe, thus neglecting moral considerations.

However, regarding that *East* Germans *born after 1990* are the most likely to offer a bribe, we conjecture that individuals who were exposed to a radical institutional transformation from a socialist to a market-oriented environment during the influential period of their socialization are potentially more susceptible to suppress moral considerations in economic decision-making by adapting conceptions of the new environment due to the less stable institutions (as in the case of East Germany) (Giuliano & Nunn, 2021).

Considering the specific institutional experiences in our case can provide a reasonable explanation. Sandholtz and Taagepera (2005) studied the influence of a socialist system on the corrupt behavior of the individuals exposed to that system. They

infer that socialist institutions “created structural incentives for engaging in corrupt behaviors, which became such a widespread fact of life that they became rooted in the culture in these societies” (Sandholtz & Taagepera, 2005, p. 109). Thus, *East* Germans, who socialized in the German Democratic Republic, were possibly likely to internalize corrupt practices as acceptable. This belief may have persisted since these practices were normalized by its institutionalization (Takacs Haynes & Rašković, 2021).

Bribing may have been considered an opportunity to improve one’s personal situation, which was otherwise marked by restrictions and limited material property (Jacob & Tyrell, 2010; Kopstein, 2001). These beliefs are likely to be transmitted to the younger generation (Bondar & Fuchs-Schündeln, 2023; Giuliano, 2007; Guiso et al., 2016) who, however, add their experiences with the new environmental conditions during their socialization in a market-oriented politico-economic system (Giavazzi et al., 2019). The mechanisms of moral disengagement provide a useful framework to explain how individuals in post-socialist societies deal with past experiences of corrupt structures. As outlined by Takacs Haynes & Rašković (2021, p. 838) “individuals use a combination of moral disengagement mechanisms to reconcile or live with unethical and sometimes illegal behavior.” These cognitive processes of misattributing negative consequences of personally favorable actions or diffusing the responsibility of these actions are likely to increase gradually among these individuals. They may be more susceptible to these effects due to the transmitted experiences of their ancestors, which were internalized during their socialization process. Adding the awareness of systematic disadvantages compared to the younger generation in *West* Germany (Arnhold, 2009), *East* Germans born after 1990 are possibly more likely to exploit market opportunities to improve their personal circumstances for the sake of moral considerations than *West* Germans.

This divergence may further be driven by individuals’ trust in institutions. After the country’s separation, trust in institutions developed very differently in the Eastern and Western parts of Germany due to the diverging economic success. While a low level of trust was maintained in East Germany up to the new century, there was only a slow decrease in West Germany (Rohrschneider & Schmitt-Beck, 2002). Low institutional trust, in turn, likely leads to a higher demand for state regulation and the toleration of corruption to improve the personal situation (Aghion et al., 2010; Denisova et al., 2010). Thus, differences in attitudes and beliefs toward moral considerations between East and

West Germans socialized before reunification may be transmitted to the younger generation socialized after reunification due to several interrelated cultural and economic factors, from which we focus on those that are closest to our empirical construct. Most importantly, our argumentation complies with the most renowned literature on culture and institutions (e.g., Aghion et al., 2010; Alesina & Giuliano, 2015), and we provide new insights for the discussion about detrimental effect of markets on morals, which may also indirectly take effect as we just discussed for individuals from *East Germany born after 1990*.

6. Conclusion

This research is motivated by the need to obtain further insights into the likely impact of market-oriented institutions on morals, which has been outlined as an important indicator of economic development (Tabellini, 2008, 2010). While moral considerations in these studies have been derived from a set of individual cultural indicators, we observe a form of actual moral decision-making in a game-based corruption scenario. Furthermore, we apply a cohort analysis with German subjects from the Eastern and Western parts of the country to differentiate between the effects of market-oriented and socialist institutions concerning the results of previous empirical investigations into the convergence of cultural traits in Germany (e.g., Fuchs-Schündeln & Schündeln, 2020; Pop-Eleches & Tucker, 2017). The results of this study mainly contribute to the ongoing discussion about the development and transmission of cultural traits in the reunited Germany that has been shaped by two opposing economic systems (Bondar & Fuchs-Schündeln, 2023). Our study underlines the necessity to consider perceived inequalities and misconceptions about the younger generation in Germany. The reunification might have started a convergence process regarding various attitudes (Bondar & Fuchs-Schündeln, 2023; Sack, 2017; Schmelz & Ziegelmeyer, 2020; Svallfors, 2010; Torgler, 2003), but especially practices and attitudes that imply moral and social considerations like cheating (Ariely et al., 2019), social and institutional distrust (Heineck & Süßmuth, 2013; Rainer & Siedler, 2009), selfishness and cooperativeness (Brosig-Koch et al., 2011; Heineck & Süßmuth, 2013; Ockenfels & Weimann, 1999), or bribing in our study do not converge and are more likely to be observed among young East Germans. These values are related to higher personal benefits disregarding moral and social orientation, which is not only characterized as a downside of market environments (Bowles, 1998; Falk &

Szech, 2013; Sandel, 2013), but may also comply with the results of Van Hoorn and Maseland (2010) who outline East German characteristics to be more compatible with a market economy in all its facets. These potential negative effects on young East Germans' moral and social behavior may be provoked by a perceived negligence of the institutional authorities.

Thus, based on our study and the concurring literature, we call for a differentiating debate about the opportunities for young East and West Germans and how to overcome potential differences that may aggravate the perceived inequalities of young East Germans. This implication derives from our study, which is subject to limitations that are discussed below.

The results of Dickinson and McEvoy (2021) indicate that conducting experiments on moral behavior online may result in a higher level of dishonesty, leading to less moral considerations by the subjects due to anonymity and social distance. Our data give rise to the assumption that this holds for subjects who are acquainted with the online environment since the proportion of transfer offers is higher among our young cohort. However, the proportion of bribes offered among the young cohort in our study aligns closely with the levels observed in other corruption studies conducted with student participants in the lab (Abbink et al., 2002, 2018; Barr & Serra, 2010). Being aware of the limitations outlined by Becker et al. (2020) when making inferences to the lasting effects of the politico-economic systems on East and West Germans, we cautiously control for individual family background and moving over time to obtain, in the first place, a reliable classification of the four cohorts based on the individuals' age and socialization. Yet, inferring the results of moral behavior in a corruption scenario to the individuals' cultural experiences induced by the institutional environment they were exposed to during their socialization should be considered cautiously. While the existing literature emphasizes the lasting effect of institutions on cultural traits (Alesina & Giuliano, 2015; Giuliano & Spilimbergo, 2014; Guiso et al., 2016), there are certainly other factors on the individual or societal level that have shaped current beliefs and attitudes, thus influencing moral considerations.

Hence, in the second place, we try to control for some factors that we identified in our literature review to consolidate our approach to using the German reunification to study inter- and intragenerational differences in bribing decisions. Despite the control of

certain demographic and socioeconomic factors, our sample provides, in general, insights from very specific groups of the German population. Our younger cohort includes undergraduate students, and the older generation is commonly enrolled as senior citizen students at public universities. We acknowledge that our choice of older participants may not fully represent the general population. As observed by Wetterberg et al. (2022), there might be a potential bias stemming from the socioeconomic backgrounds of the participants, who were specifically recruited from adult education settings and, therefore, may not reflect broader demographics. Moreover, both cohorts may reflect differently on the outcome of a potential bribing attempt as well as on the study environment with which they might be more acquainted than other groups of the population. In particular, our younger cohort might face restrictions primarily in their engagement with corruption. Variations in evaluating corruption may occur as noted by Alatas et al. (2009) who demonstrate that a younger cohort of students focuses solely on socioeconomic impacts disregarding moral considerations and broader societal implications of corruption. The attitudes of young participants toward corrupt behavior can be significantly influenced by their varying levels of experience and exposure to such conduct (Julian & Bonavía, 2020).

Moreover, conducting our study online, due to the COVID-19 pandemic, led to a lower number of participants per cohort than we had aimed for and likely left our results, to some extent, underpowered when inferring statistical significance. However, our approach provides decent data to conduct regression analyses and identify relationships concerning our hypotheses. Furthermore, our approach allows us to analyze the first-round decisions of individuals, which are independent of their counterparts' reactions. However, this has the side effect that trial rounds, ensuring comprehension of the process and consequences of the game among all participants, are excluded (Barr & Serra, 2009). In addition, the study is limited by the lack of negative externalities. Thus, the players' actions only had an impact on their own and their partners' outcomes. The decisions did not have an impact on other players or a third party. Even though Abbink et al. (2002) do not find any difference in the distributions of transfer offers comparing the same experimental setting with and without negative externalities, the exclusion of negative externalities may lead to altered conceptions of consequences among subjects, exonerating them morally.

While future research might consider some of the outlined limitations, it should further be investigated, for the case of Germany, to what extent the tendency to neglect moral considerations in economic decision-making may develop in successor generations, who are likely to be unaffected by culturally transmitted experiences of the socialist institutional environment. While we focus on the specific case of institutional transformation in Germany, a country that is perceived as being rather less affected by corruption in its current state and where society deems corruption as morally reprehensible (Giannakopoulos & Tänzler, 2009), we suggest applying our study design to countries that have also experienced an institutional transformation but at the same time a lower current score on corruption indices. Anyway, we call for the steady consideration of generational effects when analyzing cultural traits and their development in a society, given the influence of vertical and horizontal learning processes, as we have outlined throughout our paper.

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Appendix

Appendix A1 Instructions

Welcome to this economics experiment.

I will start by explaining the procedure of the experiment using the slides I am now sharing with you. If you have any questions, please wait until I have finished with the instructions. First, the initial conditions: There will be two types of participants in the experiment: the role of the entrepreneur and the role of the public official. When you start the game, you will be randomly assigned to a role at the beginning. The role remains unchanged throughout the game. In the first round, pairs of participants are selected randomly. An entrepreneur and a public official are assigned to role-play with one another. Neither participant knows with whom they are playing. The pairs remain unchanged throughout the experiment.

Furthermore, the game consists of several rounds. In each round, credits in the form of Token are allocated to each participant individually at the end of the round. Thus, they do not have starting credits but receive credits at the end of each round. The individual credits from each round are added up for all rounds at the end of the experiment. The number of credits per round depends on the decisions of the players but can never be negative. At the end of the experiment, you will receive a payout after converting the total balance of Token into Euros. The exchange rate is 2 cents to 1 Token. In addition, you will receive a show-up fee of 3 EUR for participating.

For the game, put yourself in an interactive decision-making situation between the entrepreneur and the public official. The entrepreneur wants to have an application approved and, in each round, the public official has to decide whether or not to approve the application. In advance, the entrepreneur can offer the public official a private payment, which the public official can accept or reject.

Thus, several decision-making situations arise in one round, which can, but do not have to, proceed over 3 stages in total. There is only one decision to be made by each participant per stage. Only after a decision has been made will the next level follow, and thus the next decision. You will always know the decision of your playing partner. The next round begins when all playing pairs have made their decisions, so there may be brief waiting times. I will announce the start of the next round.

I will now go into more detail about the individual decision-making stages: Stage 1: Offer of a private payment

First, the entrepreneur decides whether or not to offer the public official a private payment. If the entrepreneur does not want to make a private payment, s/he selects the 0 Token option. This results in no change to the subsequent balances in the round and the game continues directly to Stage 3. If the entrepreneur wishes to make a private payment, s/he can then determine the amount of this payment and choose between 1, 2, 3, 4, 5, 6, 7, 8, or 9 Token. If the entrepreneur decides to make a private payment, then her/his subsequent balance for the round is reduced by 2 Token due to the cost of the offer, and the game continues with Stage 2.

So, let's move on to Stage 2: Accepting or rejecting the private payment.

The public official has two options after being offered the private payment: accept or reject the proposed private payment. If the public official accepts the private payment, the entrepreneur's credits for the round will be reduced in any case by the proposed amount of the private payment. In each case, the public official's balance is increased by the amount of the entrepreneur's private payment multiplied by three for the round. For example, a private payment of 5 Token will increase the public official's balance by 15 Token in addition to the other amount.

If a private payment is made and accepted, there is a certain probability that it will be detected when a number between 1 and 1,000 is randomly drawn in a lottery. If the randomly drawn number is 1, 2, or 3, the private payment will be discovered. Both the entrepreneur and the public official will be punished with a disqualification in this case. This means: the game ends immediately for these two participants and they receive no payout for the entire game. This also means that the Token earned as credits in previous rounds will be deleted from their total credits. Both participants remain in the game for the duration of the experiment and, after answering the final questions, are only paid the show-up fee. For the other pairs of participants, the game continues normally. If the randomly drawn number is 4, 5, 6, etc. up to 1,000, then the private payment is considered undetected, and the game continues to Stage 3.

If the public official rejects the private payment, the balances remain unchanged for the round. However, the entrepreneur's offer costs from Stage 1 are paid even in the event of a rejection. The game now continues with Stage 3

In Stage 3, there is finally a decision on approving the application. The public official now decides whether to reject the entrepreneur's application (decision X) or accept it (decision Y). If the public official rejects the application (decision X), then the total credits of the entrepreneur and the public official are both increased by 36 Token. If the public official approves the application (decision Y), the entrepreneur's balance is then increased by 56 Token, while the public official's balance is increased by 30 Token.

However, the final balance of the round for both is still determined by the decisions of the previous two stages, so that there can be a total of three different balances in each case, as you can see in the illustration under the options after Stage 3. The numbers here represent the decision levels and t stands for the transfer amount of the private payment.

After the third stage, the round is over. We provide this overview to remind you of your options in the game. The overview of the decision and credit options will be displayed here in the Zoom conference during the game and you can access it at any time by switching windows from the game to the Zoom conference or via a second screen. If you have Zoom open in your browser, a second tab will open in your browser. You will then need to switch between the two views accordingly in the tab bar at the top. If you have Zoom open as a program, you can switch between the program and the game window in the browser by minimizing the window and maximizing it again from the program bar.

I will provide a link through the chat in a minute that will take you to the game. When you select the link, a new window will open where you will stay until the end of the game. Here, it may also take a short while until the game starts. Please be patient here until all participants are in the game. Only then can the game begin. You will first see a brief summary of the steps in the game, which you should read to make sure you have understood everything. Once you have confirmed this, the game will start with the first round. I will announce the start of the next round when all participants have made their decisions.

When the last round has been played, you will be shown another link to a questionnaire, which you should open. You have to answer these questions to finish the experiment. To answer the questionnaire, it is very important that you transfer your PLAYER ID from the experiment. Your PLAYER ID is displayed at the top of the window the whole time during the game and consists of six numbers, e.g. (123456). Write this down or take a screenshot. You will also need this ID to receive your payout later by

providing it along with your bank details by email or post. After answering the questionnaire, you can close the questionnaire and game windows and leave the Zoom meeting.

If you still have questions about the game, please ask them now. Questions about formalities regarding the payout can still be discussed individually after the experiment. You can turn on your microphone now if you have questions. Otherwise, please leave the microphone off throughout the experiment. I will now turn off your microphones. Please also turn off your videos for the duration of the experiment to ensure a good connection. Then, I will now provide the link to start the experiment in the chat. Please click on the link only once and be patient until the game starts.

Appendix A2 - Draft for the implemented online survey after the game

Welcome to our final questionnaire. Please answer all questions completely and to the best of your knowledge to complete your participation. Answering all questions should take no more than 10 minutes. There are no right or wrong answers. The collected data will be evaluated scientifically for research purposes only. Your information will only be stored under the individual ID number, so it will not be identifiable who the data is from during the evaluation. The data will be used within the framework of the information provided in the consent form you signed and will be subject to continuous anonymization. Thank you for your participation!

1. Please enter your 6-digit ID number:
2. Please enter your year of birth as a 4-digit number:
3. What is your gender? I am...
 - Male
 - Female
 - Diverse
4. In which city were you born?
 - Germany (formerly East Germany)
 - Germany (formerly West Germany)
 - Berlin (formerly East Berlin)
 - Berlin (formerly West Berlin)
 - Other, in the city of
5. Did you move to East or West Germany?
 - I moved to East Germany
 - I moved to West Germany
 - I did not move
6. Did you subsequently move to East/West Germany? (repeating until the answer is "no")
 - I moved to East/West Germany in the year:
7. What is your family background?
 - East German

-
- West German
 - Both/German
 - European
 - Other:
8. Where is your main place of residence at the moment?
- Germany (formerly East Germany)
 - Germany (formerly West Germany)
 - Berlin (formerly East Berlin)
 - Berlin (formerly West Berlin)
 - Other, in the city of
9. How do you see yourself?
- East German
 - West German
 - German
 - European
 - Other:
10. Would you generally say that East Germans can be trusted? How would you rate your opinion on a scale of 1-7?
- 1 = most East Germans can be trusted
 - 7 = you can't be too careful
 - I don't know any East Germans
11. Would you generally say that West Germans can be trusted? How would you rate your opinion on a scale of 1-7?
- 1 = most West Germans can be trusted
 - 7 = you can't be too careful
 - I don't know any West Germans
12. Would you agree with the statement that West Germans betrayed East Germans after the fall of the Berlin Wall?
- Yes
 - No
-

- I don't know
13. What is your marital status?
- Single
 - In a relationship
 - Married
 - Divorced
 - Widowed
 - Other:
14. What is your highest level of education?
- I am still a student
 - Left school without graduation
 - Elementary/Primary school certificate
 - Secondary school certificate, intermediate maturity, technical school certificate
 - University entrance qualification
 - High school diploma
 - Completed vocational training
 - Master craftsman's certificate
 - Bachelor's degree
 - Master's/Diploma degree
 - Doctorate PhD
15. Which best describes your standard of living?
- Very wealthy
 - Wealthy
 - Rather wealthy
 - Average
 - Rather poor
 - Poor
 - Very poor
 - No answer
16. How important is money in your daily life? (Scale 1-7)

-
- 1 = Very small role
 - 7 = Very large role
17. What do you think about the following statement? "In Germany, everyone has the same opportunities." (Scale 1-7)
- 1 = Strongly disagree
 - 7 = Strongly agree
18. What do you think about the following statement? "Justice is very important to me." (Scale 1-7)
- 1 = Strongly disagree
 - 7 = Strongly agree
19. How do you rate yourself. Are you usually more willing to take risks or do you try to avoid them? (Scale 1-7)
- 1 = Very risk-averse
 - 7 = Very willing to take risks
20. In political matters, people talk about "the Left" and "the Right." How would you generally categorize your views? (Scale 1-7)
- 1 = Left
 - 7 = Right
21. If you were employed in the former GDR: In which type of company did you primarily work?
- State-owned enterprise (VEB)
 - Agricultural production cooperative (LPG)
 - Production cooperative enterprise
 - Private enterprise
 - Other type of enterprise
 - Not employed in the GDR
22. If you were employed in the Federal Republic of Germany (FRG) before 1989: in what form did you primarily work?
- Employee in the public sector
 - Employee in a private enterprise
 - Civil servant
-

- Self-employed
- Not employed in the FRG before 1989

23. Which party would you vote for if the federal election were next Sunday?

- CDU/CSU
- SPD
- Die Grünen
- FDP
- Die Linke
- AfD
- Other:

Appendix B1 - Results concerning acceptance behavior

Table 5(a): First-round regression results on accepted bribes

	Bribe accepted		
	(1)	(2)	(3)
born before 1990		-0.183	11.721***
		(0.989)	(2.120)
West		0.172	5.385***
		(0.860)	(0.710)
born before 1990 x West			-11.475***
			(1.483)
Female	-1.414*	-1.409*	-1.589*
	(0.781)	(0.779)	(0.871)
Risk preference	-0.682**	-0.682**	-0.606**
	(0.295)	(0.295)	(0.304)
Role of money	1.009***	1.001***	1.249***
	(0.310)	(0.315)	(0.402)
Constant	-1.016	-1.152	-7.746***
	(1.857)	(1.965)	(2.544)
N	33	33	33
PseudoR ²	0.358	0.359	0.420

Note: Robust standard errors are clustered on the individual level and reported in parentheses.

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 5(b): Regression results for all rounds on accepted bribes

	Bribe accepted		
	(1)	(2)	(3)
born before 1990		-0.412	-0.197
		(0.312)	(0.291)
West		-0.076	0.151
		(0.249)	(0.218)
born before 1990 x West			-5.126***
			(0.616)
Female	0.109	0.101	0.107
	(0.268)	(0.270)	(0.268)
Risk preference	0.051	0.051	0.082
	(0.087)	(0.087)	(0.082)
Role of money	0.368***	0.369***	0.400***
	((0.115)	(0.115)	(0.117)
Round	√	√	√
Constant	-1.630**	-1.554*	-2.067**
	(0.761)	(0.823)	(0.838)
N	365	365	365
PseudoR2	0.182	0.183	0.195

Note: All models include a control for the round played. Robust standard errors are clustered on the individual level and reported in parentheses.

p < .10, **p < .05, *p < .01*

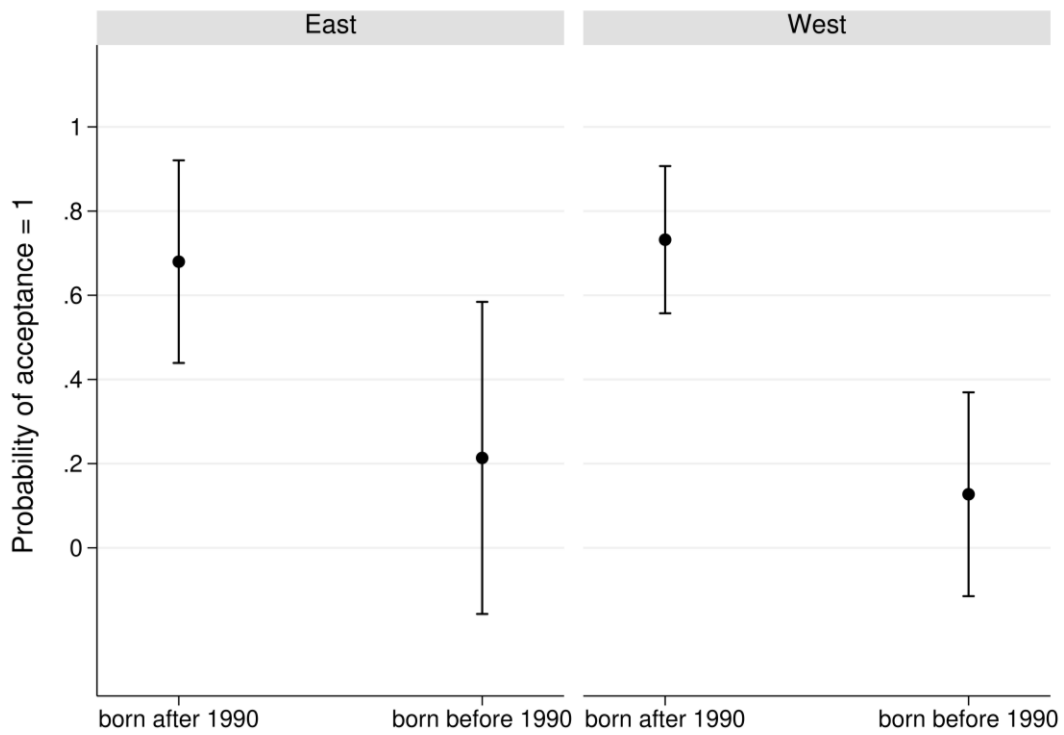


Figure 5(a): Predictive margins and 95% CI - Acceptance behavior first round, Model (3)

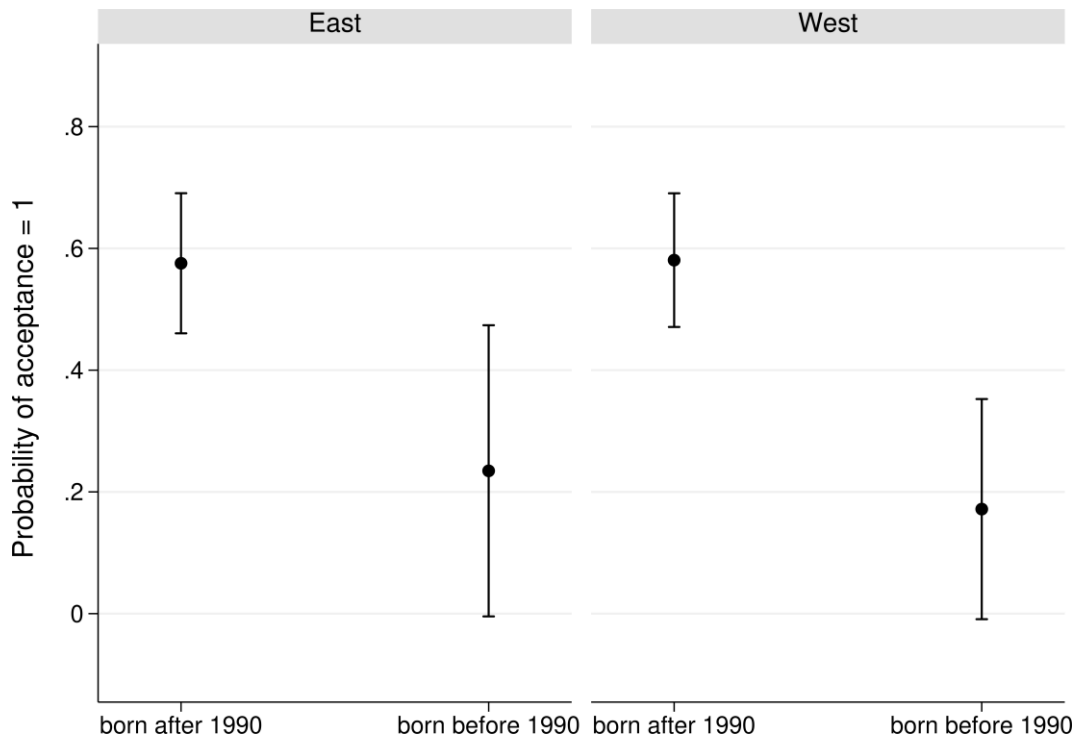


Figure 5(b): Predictive margins and 95% CI - Acceptance behavior all rounds, Model (3)

Appendix B2 - Bribing behavior for all rounds

Table 6: Regression results for bribe offering behavior for all rounds

	BO			TA		
	(1)	(2)	(3)	(4)	(5)	(6)
born before 1990		-0.644	0.078		-1.684*	-1.296
		(0.496)	(0.523)		(0.871)	(0.916)
West		0.292	1.120**		-0.163	0.350
		(0.346)	(0.446)		(0.542)	(0.668)
born before 1990 x West			-			-1.431
			1.935**			(1.142)
		(0.818)				
Accept r-1	0.115	0.114	0.109	-0.285	-0.284	-0.302
	(0.202)	(0.201)	(0.202)	(0.376)	(0.377)	(0.379)
Female	-	-	-0.514*	-1.178**	-1.190**	-
	0.578**	0.563**				1.123**
	(0.272)	(0.274)	(0.277)	(0.462)	(0.463)	(0.464)
Risk preference	0.101	0.102	0.045	0.464**	0.464**	0.413**
	(0.087)	(0.088)	(0.086)	*	*	
				(0.174)	(0.177)	(0.179)
Role of money	0.008	0.013	0.038	-0.012	-0.015	0.011
	(0.118)	(0.116)	(0.113)	(0.234)	(0.236)	(0.237)
Round	√	√	√	√	√	√
Constant	0.904	0.590	-0.055	3.009**	3.185**	2.831*
	(0.798)	(0.885)	(0.853)	(1.429)	(1.613)	(1.617)
N	362	362	362	363	363	363
PseudoR2	0.129	0.132	0.161	0.033	0.033	0.034

Note: All models include a control for the round played as well as the decisions made in the previous round. Robust standard errors are clustered on the individual level and reported in parentheses. The model on BO uses a probit specification, while it is a linear specification for the TA. The probit model omits some observations because of collinearity.

p < .10, **p < .05, *p < .01*

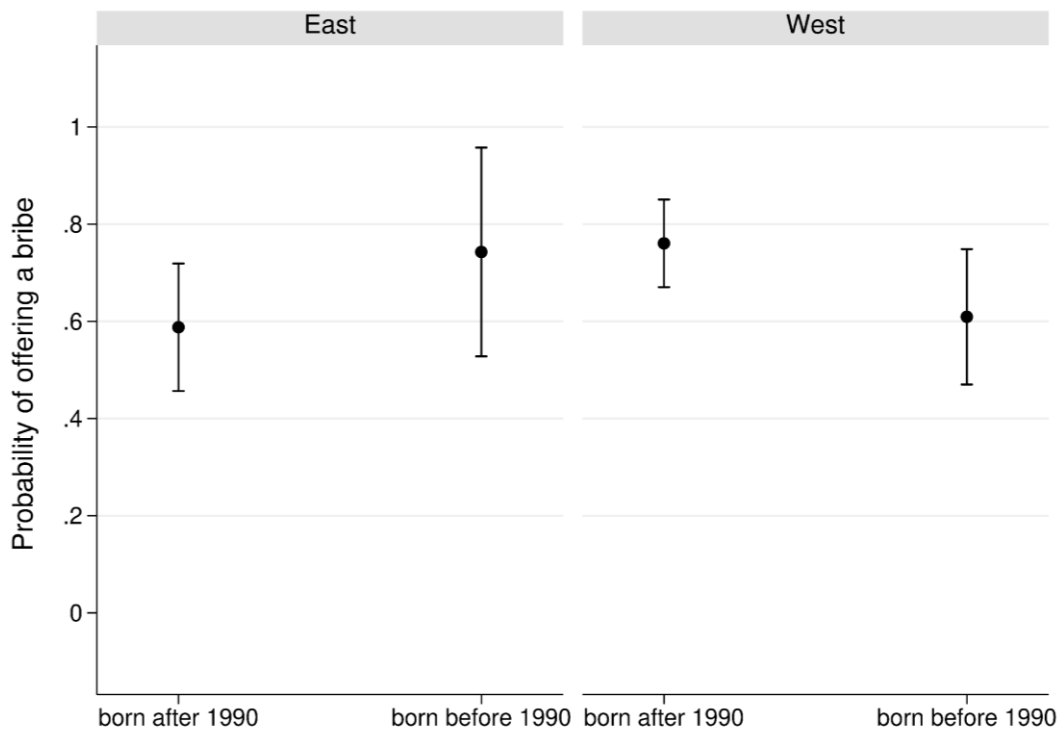


Figure 6(a): Predictive margins and 95% CI - Bribing offers for all rounds for BO

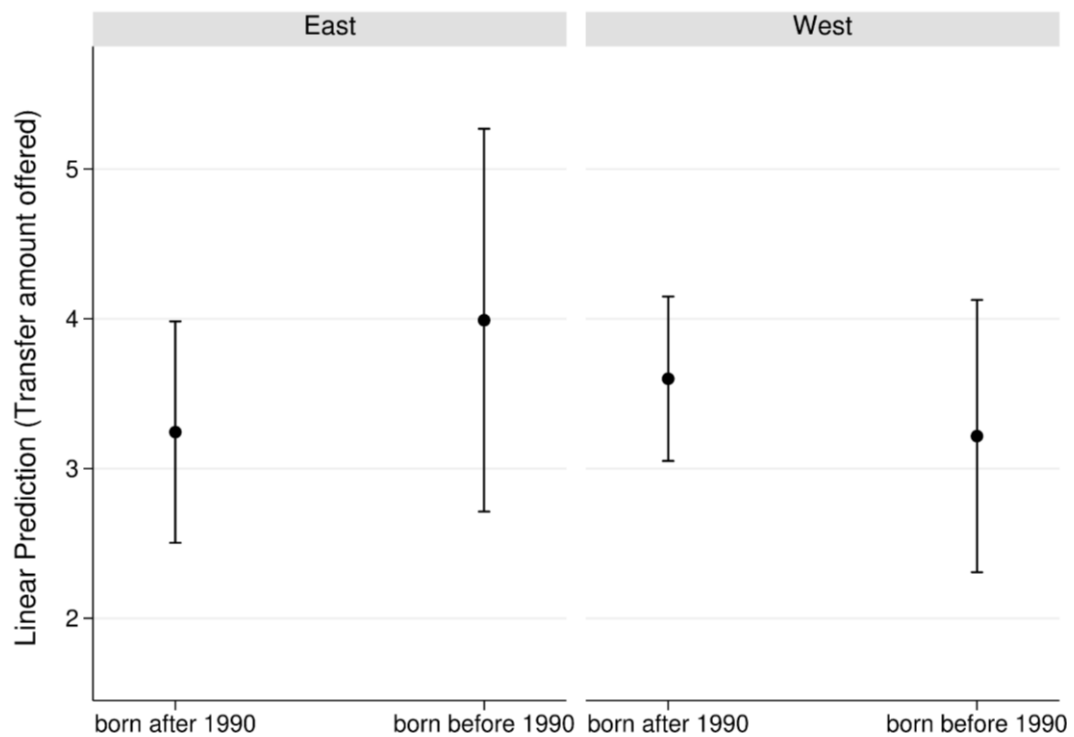


Figure 6(b): Predictive margins and 95% CI - Bribing offers for all rounds for TA

Appendix C

To choose the best fitting model for our data, we compared several likely model specifications using the AIC and BIC information criteria. A regular Poisson regression model (AIC: 343.79; BIC: 387.54), a regular negative binomial regression (AIC: 341.74; BIC: 395.22), as well as a zero-inflated negative binomial regression (AIC: 307.65; BIC: 390.20) each result in higher values compared to the zero-inflated Poisson regression (AIC: 305.61; BIC: 385.83). Thus, we received the best fit using the zero-inflated Poisson regression model to be included in this study. We also compared the model with (AIC: 305.61; BIC: 385.83) and without (AIC: 305.96; BIC: 381.32) an interaction term of both dependent variables, yielding very similar results for the information criteria.