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ABSTRACT

Former Communist Party Membership and Bribery in the Post-Socialist Countries

We study the effect of former Communist party membership on paying bribes to public officials and motivations for bribery, 25 years after the fall of communist rule. Data come from a large representative survey, conducted in post-socialist countries in 2015/16. To deal with endogeneity, we instrument party membership with information on whether family members were affected by the Second World War. Instrumental variable results suggest that links to the former Communist party increase the likelihood of paying bribes today; this result applies to the former party members as well as their children and relatives. Among bribe payers, people with the party links are more likely to *offer* bribes as well as think that bribe payments are expected. Overall, our findings suggest that the proclivity to corruption of the former Communist party members has been transmitted through family and thus sustained over time, contributing to corruption decades after the demise of the Socialist bloc.

JEL Classification: D73, P37

Keywords: corruption, Communist party, political elite, post-socialist countries, path dependency

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INTRODUCTION

Corruption is a profoundly damaging and widespread phenomenon across the world, but our understanding of why corrupt exchanges occur is still far from complete. The initiative for petty bribe payments – a common form of public sector corruption – may come from public officials who abuse their position and ask public service users for bribes. The initiative may also come from public sector users who offer bribes to receive a better service, express gratitude or because they think bribes are expected. Due to the closed-door nature of bribery, little is known about how informal agreements between public officials and public service users emerge. Yet, understanding these interactions is crucial in the fight against corruption.

Scholars have traditionally considered low pay and lax monitoring as the main causes of bribe taking by public officials (Becker and Stigler, 1974; Gorodnichenko and Sabirianova Peter, 2007; Groenendijk, 1997; Klitgaard, 1988, 1991; Lui, 1986; Rose-Ackerman, 1975, 1978; Shleifer and Vishny, 1993; Zhong, 2016). More recently, Kwon (2014) showed that civil servants with a high intrinsic and extrinsic motivation for public sector work are less likely to find corruption justifiable. From the perspective of public service users, people with greater income and wealth are more prone to corruption (Gatti et al., 2003; Mocan, 2008; Guerrero and Rodriguez-Oreggia, 2008; Hunt, 2007; Hunt and Laszlo, 2012; Ivlevs and Hinks, 2015b; Swamy et al., 2001; Tavits, 2011; Truex, 2011). At the same time, several studies, including Hunt and Laszlo (2012) and Kankeu and Ventelou (2016), find that poor households pay proportionally more in bribes, and Hunt (2007) and Ivlevs and Hinks (2015a) show that adverse life events, such as robbery or a crisis-related job loss, make people more likely to pay bribes to public officials.

This article continues the investigation of why some people are more inclined to pay bribes to public officials than others. Specifically, we study the role of historical political elite networks in explaining present day bribing behaviour of public sector users. This question has received little attention in the literature, and we answer it by focusing on the post-socialist countries and exploring whether people with personal and family links to the former Communist party are more predisposed to bribing public officials more than two decades after the collapse of the Socialist bloc. There are two reasons why this question is important. First, it has often been argued that the communist past has contributed to the high levels of corruption that have been observed in the post-socialist world since the early 1990s (Kneen, 2000; Sandholtz and Taagepera, 2005). However, precise mechanisms through which a former regime may be affecting present day bribery remain unclear, and we delve into this question by analysing bribing behaviour of former party members and their relatives. Second, public sector corruption remains one of the top policy challenges in the post-socialist countries. It is therefore important to understand what is driving it, paying particular attention to region-specific factors, such as membership of the former ruling party.

We conjecture that former party members, who were part of an intricate and well-functioning system of informal exchanges during socialist times, will be more predisposed to corruption and, thus, more likely to bribe public officials two decades after the demise of the Socialist bloc. To test this hypothesis, we use data from the Life in Transition-III survey, administered in 2015/16 by the European Bank for Reconstruction and Development and the World Bank in 29 post-socialist economies. This large representative survey contains detailed information about the respondents' family connections to the former Communist party and their recent experience of bribing public officials, including motivations for paying bribes. This information allows us to conduct a nuanced analysis of the relationship between former party membership and present day bribery.

The key challenge of our empirical analysis is the potential endogeneity of former Communist party membership. Endogeneity could be due to unobserved characteristics driving both Communist party membership and inclination to bribery. It could also be due to reverse causality – people may have wanted to join the party to take advantage of corrupt opportunities that party membership brings. To deal with endogeneity, we use the instrumental variable approach where personal and family links to the former Communist party are predicted with the information on whether respondent's family members were affected (killed/injured/displaced) by the Second World War (WWII). In the post-socialist world, WWII veterans as well as civilians affected by WWII were more likely to join or be recruited into the Communist party, and we argue that being affected by the war would have no direct influence on present day corruption – apart from the party membership channel. To strengthen our exclusion restriction, we focus on the post-socialist countries where communist rule did not exist before WWII (i.e. all post-socialist countries except the successor states of the former Soviet Union); this ensures that people did not participate in the war effort with an expectation to join the Communist party and benefit from the corruption-related opportunities associated with it.

Instrumental variable results show that being linked to the former Communist party increases the present day likelihood of bribing public officials. Both the former party members and their children and relatives are more likely to pay bribes than people without the former party connections. We also find that, among those who paid a bribe, people with the party links are more likely to offer bribes to speed up the delivery of the public service, and more likely to consider that bribe payments are expected.

This article contributes to the literature on the individual-level determinants of bribing behavior the developing and post-socialist countries (Gatti et al., 2003; Guerrero and

Rodriguez-Oreggia, 2008; Hunt, 2007; Hunt and Laszlo, 2012; Ivlevs and Hinks, 2015a, 2015b; Mocan, 2008; Swamy et al., 2001; Tavits, 2011; Truex, 2011), highlighting the role that the former ruling elite and family networks are likely to play in maintaining corruption long after a political regime change. More specifically, regarding the effects of communism on present day bribery, the study most closely related to ours is Libman and Obydenkova (2013). They use the example of Russia to explore the relationship between the regional share of the Communist party members in the 1970s' Russia and regional levels of corruption in 2010 and find that regions with a higher historical share of Communist party members have higher levels of present day corruption. While our findings are in congruence with Libman and Obydenkova (2013), we advance this line of research by providing evidence at the individual level, focusing on a range of post-socialist countries and, most importantly, using instrumental variable analysis to uncover causal effects. More broadly, our study is related to the literature on the effects of personal social networks, including parents and family, on criminal and deviant behaviours (see, e.g., Carrington (2011) for an overview). This literature has uncovered a link between social networks and a range of behaviours (illicit drug use, violence, offensive sexual behaviour, smoking) but overlooked outcomes related to bribery and corruption. We fill this gap by analysing the effects of personal and family former elite networks on the likelihood and motivations for paying bribes.

The remainder of the paper is organized as follows. Section 2 reviews the relationship between Communist party membership and corruption from a historical perspective, discusses why such links may have persisted to the present day, and outlines hypotheses to be tested. Section 3 describes the data, variables and estimation strategy. Section 4 presents the findings, followed by a discussion and conclusion in section 5.

1. COMMUNIST PARTY MEMBERSHIP AND CORRUPTION: CONCEPTUAL CHANNELS AND HYPOTHESES TO BE TESTED

Across the former socialist world, members of the ruling Communist party had significant access to economic resources and the power to distribute them. The nature of the centrally planned economic system meant that public officials, who also had to be members of the Communist party (Rigby, 1980), were powerful actors in deciding what, where and how much was produced. The supply shortages and production inefficiencies associated with economic planning meant that planners had "…*to counteract its over-centralization and its ideological limitations through the intricate schemes of informal exchange, regional and industrial lobbying, and a variety of practices for cheating the system*" (Ledeneva, 2006, p1). Informal practices, petty corruption and large-scale bribes were common among public officials and the political elite. Participants governed these networks themselves and these behaviors became deeply rooted with little to combat them (Holmes, 1993; Rose et al, 1998; Rose, 2001; Rigby, 1980). Campaigns to purge the system of corrupt officials, notably in the 1980s, failed to reduce the extent of these informal practices (Holmes, 1993).

The networks of the Communist party did not disappear after the demise of the Socialist bloc. In the immediate transitional period following the regime change, many members of the Communist party retained high-level administrative and political positions and, being in charge of the privatization process, started to realize profitable business opportunities (Sik and Wellman, 1999). These activities provided a thriving environment for both bribe taking and bribe offering. It has indeed been argued that the Communist regime contributed to corruption during this transition period (Kneen, 2000; Sandholtz and Taagepera, 2005). Libman and Obydenkova (2013) support this claim by showing that the region-level shares of Communist party members in 1976 are significant predictors of corruption levels in Russia's

regions in 2010. Further support is provided by Hsu (2005) and Aidis et al. (2008), who find that *blat*, a system of informal agreements and reciprocal favors operated by the members of the former Communist party, continues to act as a barrier to entry for new entrepreneurs in the post-socialist countries.

If the corrupt networks associated with the ruling elite or corruption habits that the party members acquired under Socialism have persisted over time, we might expect former Communist party members to be more predisposed to bribery today: they would be more likely to pay bribes in general and engage in more assertive bribing behaviour (for example, more likely to *offer* bribes to public officials as opposed to *being asked* for bribes by public officials). It is also possible that the informal networks of former Communist party members and/or their corruption habits have been transmitted not only across political regimes but also to children and relatives. For example, Djankov et al. (2005) find that having a father who was a Communist party member increases the chances of being an entrepreneur.[1] Arguably, as part of an informal network that provides access to material benefits, the children and relatives of party members would have more opportunities to use informal methods, such as bribery, to attain their goals. In addition, given that the children and relatives of party members benefited from the material privileges enjoyed by party members during socialist times (Volgyes, 1995), they were exposed to the informal processes associated with obtaining these benefits. This may have influenced their attitudes towards corruption and other informal exchanges, bringing them in line with those of party members themselves.[2] Therefore, one could expect that, after the fall of socialism, not only party members but also

[1] See also Stoica (2004) showing that the former party cadres are more likely to be entrepreneurs in Romania.

[2] Furthermore, the children may be modelling unethical behaviour more generally (not just bribe-paying or bribe-seeking) and bribery is one common and relatively measurable manifestation of it for both parents and children. Other manifestations may be more difficult to measure.

their children and relatives would be more inclined to bribe public officials, relative to people with no former Communist party connections.

Drawing on the above discussion, we formulate two hypotheses:

H1: People with a personal or family connection to the former Communist party are more likely to pay bribes to public officials than people without party connections.

H2: People with a personal or family connection to the former Communist party are more likely to have more assertive bribing behaviour (e.g. offer bribes) than people without party connections.

2. DATA AND METHODS

2.1. Data

The data for this study come from the Life in Transition-III survey, conducted by the European Bank of Reconstruction and Development and the World Bank in 2015/16.[3] The survey covered 29 post-socialist countries of Central and Eastern Europe and Central Asia (including Mongolia), as well as Turkey, Greece and two comparator Western European countries (Germany and Italy). We focus on the post-socialist countries, as the question about Communist party membership was asked only there.

The nationally representative samples consisted of 1,500 face-to-face interviews in each country. Households were selected according to a two-stage clustered stratified sampling

[3] The two previous waves of this (repeated cross-sectional) survey were conducted in 2006 and 2010. See, e.g., Corojaru (2014), Ivlevs and King (2015a) and Nikolova and Sanfey (2016) for the recent use of the survey. We chose the latest (2015/16) wave for our study, as we wanted to see the effects of the former Communist party membership over the longest possible time horizon. As a robustness check, we estimated our models with the 2010 wave data and obtained very similar results. The 2006 wave did not include questions on actual bribe payments.

procedure. In the first stage, the frame of primary sampling units was established using information on local electoral territorial units. In the second stage, a random walk fieldwork procedure was used to select households within primary sampling units. A detailed account of survey design and implementation is provided on the survey website (http://litsonline-ebrd.com/).

2.2. Variables

Outcome variable: Bribery

The question that we use to capture public sector bribery has a nested structure. First, respondents were asked whether, in the last 12 months, they or any of their household members had had contact with the following public officials or institutions: interacting with road police; requesting official documents (visa, passport) from authorities; going to court for civil matters; receiving public education (primary or secondary); receiving public education (vocational); receiving medical treatment in the public health system; requesting unemployment benefits; requesting social security benefits. If the answer was positive, the respondents were asked whether an unofficial payment or gift was made to the public official. Using this information, we construct a dummy variable *paid a bribe* which is equal to 1 if a bribe was paid to at least one type of public official, and 0 if there was contact with at least one type of public official but no bribe was paid.

Overall, 17% of respondents in our sample paid a bribe to at least one type of public official (see Table A1 of the Supplementary Information document for summary statistics of all variables included in the analysis; see section 3.3 for which countries are included in the final

sample). Note that this variable excludes the respondents who had no contact with any public official (28% of the sample) in the 12 months prior to the interview. In the empirical analysis, we will use the Heckman correction procedure to check whether excluding these respondents results in a sample selection bias.

Those respondents who said they paid a bribe were asked a follow-up question about their motivation to do so. There were four possible answers: 1) "I was asked to pay", 2) "I was not asked to pay but I knew that an informal payment was expected", 3) "I offered to pay, to get things done quicker or better", and 4) "I was not asked to pay but I wanted to express my gratitude". These reasons were mentioned by 16%, 33%, 19% and 34% of bribe payers, respectively. We create a dichotomous variable for each of the four reasons, equal to 1 if the respondent mentioned a reason in relation to paying a bribe to at least one type of public official and 0 otherwise.

Main regressor: Personal and family links to the former Communist party membership

Respondents were asked whether they themselves, their parents or other family members were members of the Communist party prior to 1989/1991.[4] We use this information to create several dichotomous variables capturing connections with the former Communist party. First, the variable *any personal or family link to the Communist party* takes value 1 when the respondent has a personal or family connection with the Communist party and 0 otherwise. Overall, 19% of respondents in our sample have such connections. Next, three separate dichotomous variables are created for: former party members (5% of the sample); the children of former party members (11%); and the relatives (other than children) of former

[4] The Soviet Union broke down in 1991, while in most satellite countries of Eastern Europe the Communist regimes fell in 1989-1990.

party members (7%). Note that these categories can overlap, i.e. the respondent can be a former party member and at the same time have parents or relatives who were party members.

Control variables

Following the literature on the micro-determinants of corruption (e.g., Ivlevs and Hinks, 2015a,b), all regressions include the following control variables (see table A1 of Supplementary Information for summary statistics of all variables): gender; age (in years) and its square; three levels of education (primary, secondary, tertiary); a household wealth index;[5] a self-perceived position on a 10-step income ladder;[6] and degree of urbanization (rural, urban other than capital city, capital city). In addition, we include dichotomous variables for every country (country-fixed effects) to account for all country-level influences on both the prevalence of bribery and links to the former Communist party. Among other things, using country-fixed effects ensures that the estimated coefficients capture within-, rather than between-, country relationships of the variables of interest.

2.3. Estimation strategy and instruments

Our objective is to estimate the following baseline models:

$$\textit{Model 1: Paid a bribe}_{i,j} = \beta_0 + \beta_1\, \textit{Communist party}_{i,j} + \beta_2\, \textit{individual level controls}_{i,j} + \beta_3\, \textit{country fixed effects}_j + \textit{error term}_{i,j} \quad (1)$$

[5] The wealth index was calculated with the principal components technique, using information on whether the household can afford a phone, TV, computer, washing machine, car, internet and heating.

[6] Respondents were asked to imagine a 10-step income ladder where the first (tenth) step captures the poorest (richest) 10% of the country.

$$\textit{Model 2: Reasons for bribery}_{i,j} = \beta_0 + \beta_1 \textit{Communist party}_{i,j} + \beta_2 \textit{individual level controls}_{i,j} + \beta_3 \textit{country-fixed effects}_j + \textit{error term}_{i,j} \quad (2)$$

where, for individual *i* living in country *j*, *Communist party* stands for variables capturing personal or family links to the former Communist party, *reasons for bribery* stands for the four motivations to pay bribes, and individual-level controls and country-fixed effects are as described above.

Note that, in Equations (1) and (2), parameter β_1 captures the *association* between the former Communist party membership and bribing behaviour. The Communist party variable is potentially endogenous, meaning that β_1 may not reflect the true (causal) effect of party membership on present day bribery. Endogeneity could be due to reverse causality (people joined the party because they wanted to take advantage of corrupt party networks) or unobserved factors, such as personality traits, affecting both joining the party and bribing public officials. To mitigate endogeneity and move closer to causal effects, we employ the instrumental variable technique. This approach necessitates one or more variables – instruments – that are highly correlated with the endogenous regressor (personal and family links to the Communist party) and affect the outcome (bribery) only through the endogenous regressor. The estimation consists of two stages: in the first stage, the endogenous regressor is regressed on the instrument(s) as well as the full set of control variables. In the second stage, the outcome is regressed on the predicted values of the endogenous regressor from the first-stage equation and the full set of controls.

Our proposed instruments for personal and family links to the former Communist party draw on information about the involvement of respondents' family members in the Second World War (WWII). Across the former socialist world, returning soldiers and civilians who suffered during WWII were venerated as liberators and heroes. Furthermore, WWII veterans (and in

many cases civilians who were affected by war) were encouraged, and given priority, to join the Communist party and take leading positions in the government and various administrative bodies; managerial and power positions were indeed created for war returnees and a wartime record, coupled with the Communist party membership, provided an opportunity to move up the social ladder (Edele, 2008). In the former Soviet Union, the Communist party in many ways was an organisation of ex-WWII warriors (Rigby, 1968); similar involvement of WWII veterans in the ruling communist parties is documented in other countries of the socialist block (Popov, 2004; Antic, 2017).

Our expectation is that people who themselves, or whose parents and grandparents, fought in, or were otherwise affected by, WWII would be more likely to have either personal affiliation or family links to the Communist party (instrument relevance). The absence of a direct effect of being affected by WWII (or being a descendant of such people) on present day corruption (instrument exogeneity) necessitates further discussion. First, it is not impossible – although quite unlikely – that, when WWII started, people joined the army *because* they anticipated that it would be easier to become members of the ruling party during or after the war and subsequently benefit from the advantages that party membership brings (for example, be in power/managerial positions and exploit corrupt networks). Necessary conditions for this to happen are: 1) the Communist party being in power prior to the war; 2) people expecting the Communist party to be in power after the war; and 3) people knowing that being a party member brings benefits, including opportunities for corrupt exchanges. Second, where Communist rule existed before WWII, party members may have been more – or less – likely to join (or be drafted into) the army than non-members. In these cases, willingness to join or actual party membership would drive participation in WWII, potentially invalidating the instrument. Such cases, however, are only possible where Communist rule was firmly established before WWII, i.e., in the successor states of the Soviet Union, with a probable

exception of the three Baltic States and Moldova, which were annexed by the Soviet Union in 1940 (the Soviet Union entered WWII in 1941).

On the contrary, the non-Soviet countries of Central and Eastern Europe (CEE) did not have Communist rule before WWII; Communist parties in these countries were weak, underground organisations at best (Hanley, 2003). In many cases, Communist parties gained support during WWII, as they opposed Nazi rule that prevailed in many parts of the CEE region during the war. However, the major push that the CEE Communist parties received was straight after WWII when the Red Army liberated the region from Nazi rule – and took control over it at the same time. CEE countries became part of the sphere of political influence of the USSR, with the Soviet institutional and political blueprints being quickly imposed upon the newly established governments. Communist Party membership in CEE grew fast (Henley, 2003), and ex-WWII warriors – liberators from fascism – enjoyed a privileged access to the party. As was stated in a resolution passed at a communist rally in Prague in May 1945, "… *We shall open the [Communist] party [of Czechoslovakia] wide, primarily to those who have proved themselves in the heroic struggle against bestial fascism under the most difficult conditions*…" (Wightman and Brown, 1975, p.375).

Given the absence of Communist rule in CEE before WWII, as well as high uncertainty of how the post-war political development of these countries would unfold, we can rule out that people in the CEE region fought in WWII because of an expectation of getting corruption-based benefits that the Communist party membership would bring to people with a war record. Therefore, focusing on countries where Communist rule was established only after WWII strengthens the exogeneity of our WWII-related instruments. There are 18 such countries in our sample – Poland, Czech Republic, Slovakia, Hungary, Romania, Bulgaria, the seven successor states of Yugoslavia (Bosnia and Herzegovina, Croatia, Former Yugoslav

Republic of Macedonia, Kosovo, Montenegro, Slovenia, Serbia), Albania, as well as the Baltic States (Estonia, Latvia, Lithuania) and Moldova[7] – and in what follows only they will be included in the analysis.

Concerning specific information about the respondents', their parents' and grandparents' involvement in WWII, we use the following two questions: 1) "Were you, your parents and any of your grandparents physically injured or were your parents or any of your grandparents killed during WWII?" and 2) "Did you, your parents or any of your grandparents have to move as a result of WWII?", with possible answers "Yes" and "No". We construct two binary variables, *killed/injured in WWII* and *displaced as a result of WWII*, and expect both to be positively correlated with personal or family links to the Communist party. We note that, apart from *fighting* in WWII, these variables would also capture broader WWII effects on civilians. However, in many cases – for example, relocation to a labour camp or participating in underground resistance movement – civilians affected by WWII would also receive a preferential treatment after the war. Overall, 18% of the sample (ranging from 5% in Albania to 34% in Poland) provided a positive answer to the first question (killed/injured in WWII) and 12% of the sample (ranging from 4 in Albania to 34% in Estonia) provided a positive answer to the second (moved as a result of WWII) question (see Table A2 of the Supplementary Information document for individual country means).

Despite the binary nature of the variables *paid a bribe* and *reasons for bribery*, we estimate the instrumental variables models with the two stage least squares (2SLS).[8] To make the

[7] The three Baltic States and Moldova are included as they had very short exposure (one year) to Communist rule before WWII started; our results remain largely unchanged if these four countries are excluded from the analysis. However, as, being part of the USSR, the three Baltic states and Moldova witnessed high levels of state-managed immigration from other USSR republics, predominantly Russia, Belarus and Ukraine, we exclude from the analysis respondents of Russian, Belorussian and Ukrainian ethnic origin.

[8] This is because the Stata command for 2SLS (*ivreg2)* routinely reports the results of the F test of excluded instruments as well as the instrument overidentification test, which are of central interest for us. The Stata

comparisons between IV and non-IV results possible, the models that do not account for endogeneity are also estimated with OLS (linear probability models). The results of the corresponding instrumental variable probit and binary probit models are fully consistent with the 2SLS and the linear probability estimations (see Tables A3 and A4 of the Supplementary Information document).

Finally, we also address a possible sample selection bias arising from the fact that only people who contacted public officials can be included in the bribery models. To check for the existence of the bias and correct for it, we apply the standard Heckman correction procedure (Heckman, 1979). Consistent with the previous literature tackling the sample selection bias in bribery models (Ivlevs and King, 2015b), the set of variables identifying contact with public officials in the selection equation includes dichotomous variables for: 1) having children under 18 in the household; 2) being a student; and 3) having poor health. The Heckman correction is applied in both the non-IV and IV models; for the latter the procedure consists of obtaining the inverse mills ratios from the selection equation and including them in both the first and the second stages of the IV estimation (see section 19.6.2 of Wooldridge (2010)).

3. RESULTS

We start by reporting the results of the models that do not account for the endogeneity of the Communist party variables (section 4.1.), followed by the results of the IV estimations (section 4.2.).

package for the main alternative – instrumental variable probit (*ivprobit*) – does not include the F test of excluded instruments (which, however, could be computed manually), and the overidentification (Amemiya-Lee-Newey) test is only possible to perform after a two-step estimation, which cannot be 1) run with robust standard errors and 2) used to calculate marginal effects. As a robustness check, we have estimated the corresponding *ivprobit* models (see Table A3 of the Supplementary Information document), and the results of the overidentification tests (from a two-step estimation) and the marginal effects of the regressors of interest (from a standard estimation with robust standard errors) are fully consistent with the 2SLS results.

4.1 Communist Party links and bribe payments: correlational results

Table 1 reports the (conditional) correlation between the generic Communist party variable and the probability of bribe payments. The results suggest that, keeping other factors constant, respondents with links to the Communist party are approximately 3.8 percentage points[9] more likely to pay bribes to public officials (Column 1); the result is statistically significant at the 1% level. In terms of magnitude, this is a non-negligible association given the average incidence of bribe payments of 17%: a connection to the former Communist party thus raises the incidence of bribery by 22.4% relative to the sample average (3.8/17).

Columns 2 and 3 of Table 1 report the results of the corresponding Heckman correction model. We first note that the three identifying variables are positive and statistically significant predictors of selection into contact with public officials. Second, the term *rho*, capturing the correlation of error terms in the outcome and selection equations, is statistically insignificant, implying that sample selection bias is not present. This is confirmed by the near identical results that we obtain in the outcome equation of the Heckman correction model (Column 3) and the benchmark model (Column 1).

Among control variables, both the wealth index and the perceived position on the 10-step income ladder are positive and statistically significant predictors of the bribe payment likelihood. This finding supports Ivlevs and Hinks (2015a,b), Guerrero and Rodriguez-Oreggia (2008) and Hunt and Lazslo (2012) and is typically explained by a contention that better-off people can afford to pay bribes. The results of the selection equation are also of interest, as selection into contact with public officials affects bribery indirectly (Hunt, 2007;

[9] The (average) marginal effect from a corresponding probit estimation is 3.7 percentage points.

Ivlevs and Hinks, 2015b). Specifically, we find that, other things equal, people with links to the Communist party are about 10 percentage points more likely to contact public officials.

Table 1. Communist party and bribery, Linear Probability Model (LPM) and Heckman correction model results

		Heckman correction model	
	LPM	Selection (contact with public officials)	Outcome (paid a bribe)
	(1)	(2)	(3)
Any link to the Communist party	0.038***	0.101***	0.038***
	(0.007)	(0.007)	(0.007)
Women	-0.004	0.013**	-0.004
	(0.005)	(0.006)	(0.005)
Age	0.001	0.003***	0.001
	(0.001)	(0.001)	(0.001)
Age squared	-0.000	-0.000**	-0.000
	(0.000)	(0.000)	(0.000)
Primary education	0.010	-0.022***	0.010
	(0.007)	(0.007)	(0.007)
Tertiary education	0.007	0.017**	0.007
	(0.007)	(0.008)	(0.007)
Wealth index	0.005**	0.009***	0.005**
	(0.003)	(0.002)	(0.003)
Perceived position on 10-step income ladder	0.011***	-0.007***	0.011***
	(0.002)	(0.002)	(0.002)
Capital city	0.011	0.040***	0.011
	(0.009)	(0.009)	(0.009)
Urban area other than capital city	-0.007	0.024***	-0.007
	(0.006)	(0.006)	(0.006)
Children in the household	-	0.109***	
		(0.006)	
Student	-	0.066***	
		(0.017)	
Poor health	-	0.087***	
		(0.008)	
Country-fixed effects	Yes	Yes	Yes
Number of observations	18,235	25,478	
Censored observations	-	7,243	
Uncensored observations	-	18,235	
R^2	0.077	-	
Prob > F/ Prob > Chi^2	0.000	0.000	
Rho	-	0.007	
Prob > Chi^2 (*Rho*=0)	-	0.813	

Notes: The dependent variable in Column 1 is a dichotomous variable *paid a bribe*; the model is estimated with OLS (linear probability model) on the subsample of respondents who had a contact with public officials. The results of the Heckman correction model, estimated on the full sample of respondents, are shown in Columns 2 (selection into contact with public officials) and 3 (bribe payment conditional on contact with public officials); the identification variables for contact with public officials are: having children in the household, being a student and reporting poor health. The selection equation is estimated with binary probit and the results in Column 2 show the probit average marginal effects. *** significant at the 1% level, ** significant at the 5%

level, * significant at the 10% level. Heteroscedasticity-robust standard errors in parentheses. Omitted groups in all specifications are: male, secondary education, living in rural area. Countries included in the analysis: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Former Yugoslav Republic of Macedonia, Hungary, Kosovo, Latvia, Lithuania, Moldova, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia.

Table 2 reports the correlates of different reasons for bribery; these estimations draw on the sample of respondents who, in the 12 months prior to the interview, paid a bribe to at least one type of public official. Controlling for other characteristics, people with a link to the former Communist party (Column 3) are approximately 4 percentage points more likely to say that they *offered* a bribe to get things done quicker and better (this is an increase of 21% relative to the outcome average, which is 19%). Concerning the three other reasons for paying a bribe, the Communist party variable is statistically insignificant (Columns 2, 3 and 5), implying that people with Communist party links are as likely as people without party links to pay bribes because they are asked to do so by public officials, know informal payments are expected, and to express gratitude.

Among control variables, women are less likely to say that they were asked for bribes and that they paid a bribe because it was expected but more likely to make bribe payments to express gratitude. Wealthier people are less likely to say that they were asked for bribe by public officials but more likely to say that they paid a bribe to get things done quicker and better. Finally, those living in capital cities are more likely to say that they were asked for a bribe and that they paid a bribe to get things done quicker and better.

Table 2. Communist party and reasons for bribery, Linear Probability Model results

	I was asked to pay	I knew that an informal payment was expected	I offered to pay to get things done quicker or better	I wanted to express my gratitude
	(1)	(2)	(3)	(4)
Any link to the Communist party	-0.009	0.026	0.040**	-0.004
	(0.015)	(0.020)	(0.017)	(0.019)
Women	-0.030**	-0.030*	-0.007	0.037**
	(0.013)	(0.017)	(0.014)	(0.016)
Age	0.001	0.002	0.001	-0.001
	(0.002)	(0.003)	(0.002)	(0.003)
Age squared	-0.000	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Primary education	0.021	0.019	0.016	-0.027
	(0.017)	(0.021)	(0.017)	(0.020)
Tertiary education	-0.017	-0.004	-0.005	0.018
	(0.016)	(0.021)	(0.019)	(0.021)
Wealth index	-0.014**	0.003	0.020***	0.005
	(0.006)	(0.008)	(0.005)	(0.007)
Perceived position on 10-step income ladder	0.005	-0.004	0.002	0.006
	(0.004)	(0.005)	(0.005)	(0.005)
Capital city	0.042**	0.001	0.064***	-0.025
	(0.021)	(0.026)	(0.022)	(0.025)
Urban area other than capital city	0.019	0.027	0.006	0.006
	(0.015)	(0.019)	(0.015)	(0.019)
Country-fixed effects	Yes	Yes	Yes	Yes
Observations	3,095	3,095	3,095	3,095
R^2	0.079	0.050	0.040	0.104
Prob > F	0.000	0.000	0.000	0.000

Notes: The four dependent variables in Columns 1-4 are dichotomous variables capturing a specific reason for paying a bribe. Models are estimated with OLS (linear probability models) on a subsample of respondents who paid a bribe to at least one type of public official. *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level. Heteroscedasticity-robust standard errors in parentheses. Omitted groups in all specifications are: male, secondary education, living in rural area. Countries included in the analysis: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Former Yugoslav Republic of Macedonia, Hungary, Kosovo, Latvia, Lithuania, Moldova, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia.

Next, Table 3 decomposes the variable capturing any connection to the Communist party into three components: 1) the respondent him/herself was a party member; 2) the respondent is a child of a former party member; and 3) the respondent is a relative of a former party member. The results of Model 1 show that the children of former party members are approximately 4.2 percentage points more likely to bribe public officials than people without party links; the

estimate is significant at the 1% level (Column 1). By contrast, former party members, as well as their relatives (other than children) are as likely to pay bribes as people without party links: the coefficients of the two categories are statistically insignificant and close to zero.

The decomposition of the generic party variable in the bribery motivations estimations (Columns 2-5) shows that the relatives (other than children) of former Communist party members are approximately 7 percentage points less likely to be asked for bribes by public officials and 8.5 percentage points more likely to offer bribes to get things done quicker and better. The children of former party members are 4.4 percentage points more likely to pay bribes because they think such payments are expected. The estimates of the former party members are statistically insignificant.

Table 3. Communist party links and bribery, Linear Probability Model results

		Reasons for bribery			
	Paid a bribe	I was asked to pay	I knew that an informal payment was expected	I offered to pay to get things done quicker or better	I wanted to express my gratitude
	(1)	(2)	(3)	(4)	(5)
Former Communist party member	-0.001	-0.010	-0.027	0.031	-0.044
	(0.013)	(0.026)	(0.036)	(0.033)	(0.038)
Child of former Communist party member	0.042***	0.015	0.044*	0.005	0.033
	(0.009)	(0.020)	(0.024)	(0.021)	(0.023)
Relative of former Communist party member	0.003	-0.070***	-0.017	0.085***	0.007
	(0.010)	(0.021)	(0.030)	(0.029)	(0.031)
Women	-0.004	-0.028**	-0.030*	-0.008	0.036**
	(0.005)	(0.013)	(0.017)	(0.014)	(0.017)
Age	0.001	0.001	0.002	0.001	-0.002
	(0.001)	(0.002)	(0.003)	(0.002)	(0.003)
Age squared	-0.000	-0.000	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Primary education	0.009	0.018	0.016	0.017	-0.027
	(0.007)	(0.017)	(0.021)	(0.017)	(0.020)
Tertiary education	0.008	-0.017	-0.003	-0.004	0.017
	(0.007)	(0.016)	(0.021)	(0.018)	(0.021)
Wealth index	0.005**	-0.014**	0.003	0.020***	0.005
	(0.003)	(0.006)	(0.008)	(0.005)	(0.007)
Perceived position on 10-step income ladder	0.011***	0.004	-0.005	0.002	0.005
	(0.002)	(0.004)	(0.005)	(0.005)	(0.005)
Capital city	0.011	0.042**	0.001	0.065***	-0.027
	(0.009)	(0.021)	(0.026)	(0.022)	(0.025)
Urban area other than capital city	-0.007	0.020	0.028	0.005	0.006
	(0.006)	(0.015)	(0.019)	(0.015)	(0.019)
Country-fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	18,235	3,095	3,095	3,095	3,095
R^2	0.076	0.081	0.051	0.042	0.105
Prob > F	0.000	0.000	0.000	0.000	0.000

Notes: The dependent variable in Column 1 is a dichotomous variable *paid a bribe*; the model is estimated on the subsample of respondents who had a contact with public officials. The dependent variables in Columns 2-5 are dichotomous variables capturing a specific reason for paying a bribe; these models are estimated on a subsample of respondents who paid a bribe to at least one type of public official. All models are estimated with OLS (linear probability model). *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level. Heteroscedasticity-robust standard errors in parentheses. Omitted groups in all specifications are: male, secondary education, living in rural area. Countries included in the analysis: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Former Yugoslav Republic of Macedonia, Hungary, Kosovo, Latvia, Lithuania, Moldova, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia.

4.2 Communist Party links and bribe payments: instrumental variable results

Table 4 reports the instrumental variables results for likelihood-of-bribe-payment model and the generic (i.e. capturing both personal affiliation and family connections) Communist party variable. Both instruments are positive and individually significant at the 1% level in the first stage regression (Column 1), meaning that being affected by WWII, or having a family member who was affected (either killed/injured or displaced), is a strong predictor of links to the former Communist party. Instrument relevance is further confirmed by the F test (Kleibergen-Paap rk Wald F statistic) of excluded instruments, the value of which (166.72) exceed the commonly accepted threshold value of 10, as well as the critical values of the corresponding Stock-Yogo weak identification test. Results of the over-identification test support instrument exogeneity (*p-value* of Hansen J statistic in this model is equal to 0.87).[10]

The second stage results (Column 2) of the instrumental variable estimation show that links to the former Communist party increases the likelihood if paying bribes by approximately 12.8%; the estimate is significant at the 1% level.[11]

Columns 3 and 4 of Table 4 report the results of the instrumental variable estimation that also accounts for a potential Heckman selection bias. The Inverse Mills Ratio variable is statistically insignificant in both the first and the second stages of the instrumental variable estimation, implying again that the selection bias is not present. The magnitude and statistical significance of the Communist party variable indeed remain very close to those of the 2SLS estimation without Heckman correction.

[10] We interpret the results of the test of over-identifying restrictions with caution, as it rests on the *assumption* that at least one instrument is exogenous.

[11] The (average) marginal effect in the corresponding IV probit model is 12.4%, significant at the 1% level.

Table 4. Communist party and bribery, 2SLS results with and without Heckman correction

	2SLS		2SLS with Heckman correction	
	1st stage	2nd stage	1st stage	2nd stage
	(1)	(2)	(3)	(4)
Any link to the Communist party	-	0.128***	-	0.134***
		(0.046)		(0.050)
Women	-0.019***	-0.002	-0.018***	-0.002
	(0.006)	(0.006)	(0.006)	(0.006)
Age	0.006***	0.000	0.006***	0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Age squared	-0.000***	-0.000	-0.000***	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Primary education	-0.060***	0.016**	-0.062***	0.016**
	(0.007)	(0.007)	(0.007)	(0.007)
Tertiary education	0.062***	0.001	0.063***	0.001
	(0.008)	(0.008)	(0.008)	(0.008)
Wealth index	0.002	0.005**	0.002	0.005**
	(0.003)	(0.003)	(0.003)	(0.003)
Perceived position on 10-step income ladder	-0.006***	0.011***	-0.007***	0.011***
	(0.002)	(0.002)	(0.002)	(0.002)
Capital city	0.029***	0.008	0.031***	0.008
	(0.009)	(0.009)	(0.009)	(0.009)
Urban area other than capital city	0.018***	-0.009	0.020***	-0.009
	(0.007)	(0.006)	(0.007)	(0.006)
Family member killed/injured in WWII	0.113***	-	0.116***	-
	(0.009)		(0.009)	
Family member moved as a result of WWII	0.084***	-	0.087***	-
	(0.011)		(0.011)	
Inverse Mills Ratio	-	-	0.009	0.049
			(0.036)	(0.038)
Country-fixed effects	Yes	Yes	Yes	Yes
F test of excluded instruments	166.72***		149.38***	
Over-identification test	0.870		0.868	
Observations	18,235		18,235	
Prob > F	0.000		0.000	

Notes: The table reports the results of the instrumental variable (2SLS) estimations, without Heckman correction (Columns 1 and 2) and with Heckman correction (Columns 3 and 4). The models are estimated on a subsample of respondents who contacted at least one type of public official. Instruments used to predict *any link to the Communist party* variable in the 1st stage are: *Family member killed/injured in WWII* and *Family member moved as a result of WWII*. *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level. Heteroscedasticity-robust standard errors in parentheses. Omitted groups in all specifications are: male, secondary education, living in rural area. Countries included in the analysis: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Former Yugoslav Republic of Macedonia, Hungary, Kosovo, Latvia, Lithuania, Moldova, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia.

Table 5 reports the instrumental variable results for the reasons-for-bribery models, estimated on a subsample of people who bribed at least one public official. The instrument validity tests again support both the relevance (the Kleibergen-Paap F statistic is 22.23) and exogeneity (the Hansen J statistic is statistically insignificant in all four models) of the instruments. The second stage results suggest that links to the former Communist party increase, by approximately 27-29 percent, the likelihood of offering bribes to get things done quicker and better (the estimate significant at the 5% level) as well as the likelihood of considering that bribe payments are expected (significant at 10%).[12] The IV estimates of the Communist party variable are insignificant in the 'being asked for a bribe' and the gratitude models.

[12] The (average) marginal effects in the corresponding IV probit models are 25 and 27 percentage points, respectively, both significant at the 5% level.

Table 5. Communist party and reasons for bribery, 2SLS results

		2nd stage			
	1st stage	I was asked to pay	I knew that an informal payment was expected	I offered to pay to get things done quicker or better	I wanted to express my gratitude
	(1)	(2)	(3)	(4)	(5)
Any link to the Communist party	-	0.026	0.294*	0.274**	-0.067
		(0.117)	(0.157)	(0.139)	(0.150)
Women	-0.001	-0.030**	-0.028	-0.005	0.037**
	(0.015)	(0.013)	(0.017)	(0.015)	(0.016)
Age	0.008***	0.001	0.000	-0.001	-0.001
	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
Age squared	-0.000*	-0.000	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Primary education	-0.081***	0.024	0.041	0.035	-0.032
	(0.018)	(0.019)	(0.026)	(0.022)	(0.023)
Tertiary education	0.061***	-0.019	-0.021	-0.021	0.022
	(0.020)	(0.018)	(0.024)	(0.021)	(0.023)
Wealth index	-0.001	-0.014**	0.003	0.020***	0.005
	(0.006)	(0.006)	(0.008)	(0.005)	(0.007)
Perceived position on 10-step income ladder	-0.008	0.005	-0.002	0.004	0.005
	(0.005)	(0.004)	(0.006)	(0.005)	(0.005)
Capital city	0.040*	0.040*	-0.012	0.053**	-0.022
	(0.024)	(0.021)	(0.027)	(0.024)	(0.026)
Urban area other than capital city	0.020	0.019	0.020	-0.000	0.008
	(0.017)	(0.015)	(0.020)	(0.016)	(0.019)
Family member killed/injured in WWII	0.093***	-	-	-	-
	(0.022)				
Family member moved as a result of WWII	0.096***	-	-	-	-
	(0.028)				
Country-fixed effects	Yes	Yes	Yes	Yes	Yes
F test of excluded instruments	22.23***	-	-	-	-
Over-identification test	-	0.113	0.569	0.495	0.700
Observations	3,095	3,095	3,095	3,095	3,095
Prob > F	0.000	0.000	0.000	0.000	0.000

Notes: The table reports the results of the 1st stage (Column 1) and 2nd stage (Columns 2-5) instrumental variable (2SLS) estimations for various reasons for paying a bribe. The models are estimated on a subsample of respondents who contacted at least one type of public official. Instruments used to predict *any link to the Communist party* variable in the 1st stage are: *Family member killed/injured in WWII* and *Family member moved as a result of WWII*. *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level. Heteroscedasticity-robust standard errors in parentheses. Omitted groups in all specifications are: male, secondary education, living in rural area. Countries included in the analysis: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Former Yugoslav Republic of Macedonia, Hungary, Kosovo, Latvia, Lithuania, Moldova, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia.

Finally, Table 6 reports the IV results for the bribery model when the generic Communist party variable is decomposed into personal membership and family links (children and other relatives of party members). We conduct three IV estimations each including only one party-related variable, instrumented with the same two WWII-related instruments. Note that in the personal party membership specification (Column 1 and 2 of Table 6), we drop respondents who were younger than 18 in 1989 (younger than 44 at the time of the interviews in 2015). This is because, as children, these respondents could technically not be party members.[13]

In all three cases, we obtain strong support for instrument relevance and exogeneity: the statistics of the Kleibergen-Paap F test of excluded instruments always exceed 10 and the Hansen J statistics are always insignificant. The second stage IV results show that all three categories of respondents related to the Communist party are more likely to bribe public officials. Being a former party member, a child of a former party member, and a relative of a former party member increases the likelihood of paying bribes by approximately 52, 19 and 25 percentage points, respectively.[14] Given the average likelihood of paying a bribe of 17%, these are very large effects, especially for personal party membership.

[13] Given that personal party membership enters the calculation of the generic links-to-the-party variable, we have checked if the results presented in Tables 1-3 stay the same if we restrict the sample size to respondents older than 43 (i.e., exclude 38% of the total sample). The results remain largely unchanged: the Communist party variables stayed positive and statistically significant predictors of bribery.

[14] The corresponding IV probit (average) marginal effects are 45, 18 and 24 percentage points, all significant at the 1% level.

Table 6. Personal and family Communist party links and bribery, 2SLS results

	1st stage	2nd stage	1st stage	2nd stage	1st stage	2nd stage
	(1)	(2)	(3)	(4)	(5)	(6)
Former Communist party member	-	0.524**	-	-	-	-
		(0.239)				
Child of former Communist party member	-	-	-	0.194***	-	-
				(0.070)		
Relative of former Communist party member	-	-	-	-	-	0.245***
						(0.090)
Women	-0.050***	0.028**	-0.010	-0.002	0.028***	-0.008
	(0.005)	(0.014)	(0.006)	(0.006)	(0.005)	(0.006)
Age	0.020***	-0.011*	0.006**	-0.001	0.007***	0.001*
	(0.002)	(0.006)	(0.003)	(0.001)	(0.002)	(0.001)
Age squared	-0.000***	0.000*	-0.000**	0.000	-0.000*	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Primary education	-0.042***	0.025*	-0.027***	0.013*	-0.029***	0.014*
	(0.006)	(0.014)	(0.007)	(0.007)	(0.007)	(0.007)
Tertiary education	0.052***	-0.022	0.048***	0.001	0.009	0.007
	(0.008)	(0.017)	(0.010)	(0.008)	(0.008)	(0.007)
Wealth index	0.001	0.003	0.001	0.005**	0.002	0.005**
	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)
Position on income ladder	-0.005***	0.015***	-0.006***	0.011***	-0.007***	0.012***
	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
Capital city	-0.002	0.032***	0.055***	0.004	0.017*	0.008
	(0.008)	(0.012)	(0.011)	(0.009)	(0.009)	(0.009)
Urban area other than capital city	-0.001	-0.007	0.006	-0.008	0.013**	-0.010
	(0.006)	(0.008)	(0.007)	(0.006)	(0.006)	(0.006)
Family member killed/injured in WWII	0.020***	-	0.070***	-	0.059***	-
	(0.007)		(0.009)		(0.008)	
Family member moved a result of WWII	0.032***	-	0.063***	-	0.032***	-
	(0.009)		(0.011)		(0.009)	
Country-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
F test of excluded instruments	15.22***		100.2***		82.42***	
Overidentification test	0.706		0.994		0.747	
Observations	11,217		18,235		18,235	
Prob > F	0.000		0.000		0.000	

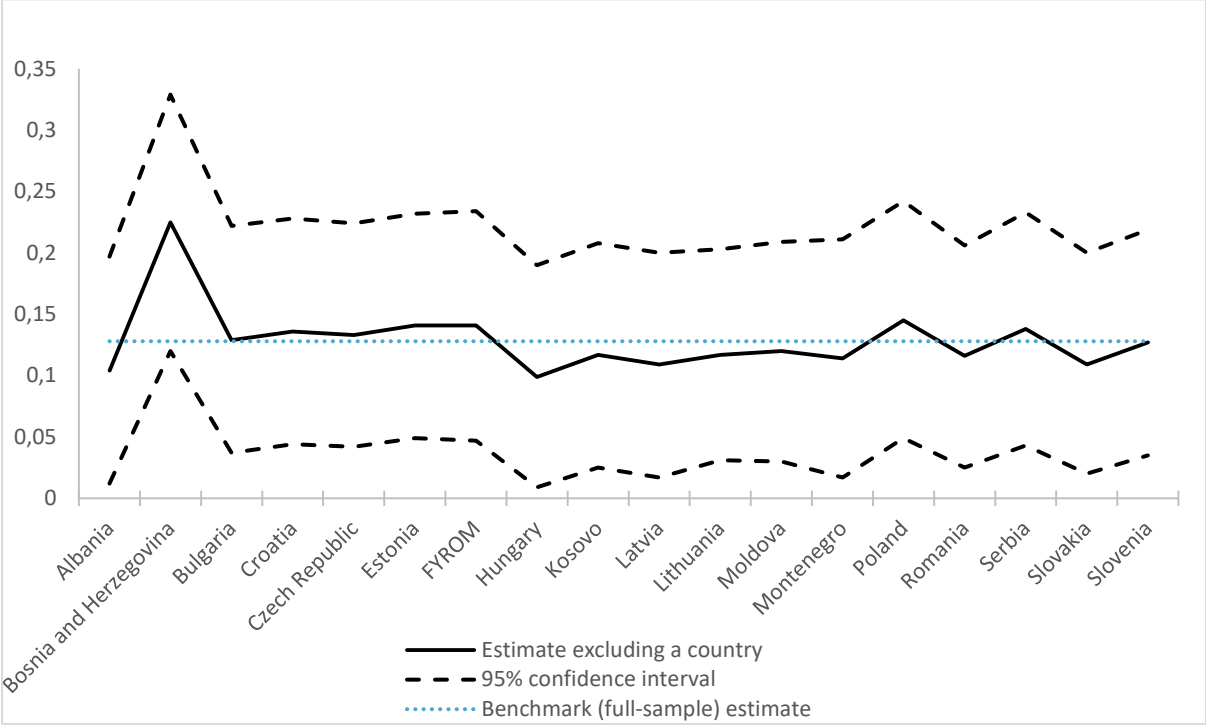
Notes: The table reports the results of the instrumental variable (2SLS) estimations. Dependent variable in the 2nd stage: paid a bribe (0/1). All models are estimated on subsample of respondents who contacted at least one type of public official; Columns 1 and 2 also exclude respondents younger than 44. Instruments used to predict the *Communist party* variables in the 1st stage are: *Family member killed/injured in WWII* and *Family member moved as a result of WWII.* *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level. Heteroscedasticity-robust standard errors in parentheses. Omitted groups in all specifications are: male, secondary education, living in rural area. Countries included in the analysis: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Former Yugoslav Republic of Macedonia, Hungary, Kosovo, Latvia, Lithuania, Moldova, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia.

4.4. Additional robustness checks

Given some heterogeneity of the type communism, political regime etc. across countries included in the sample, we checked if our results could be driven by a specific country. To do

this, we re-estimated our main instrumental-variable model (Column 2 in Table 4) by removing one country at a time. The estimate of the Communist party variable always remained positive and significant at the 95% level (Figure 1), meaning that no single country was driving the positive effect of former party membership on bribe payments. Having said this, we notice that the estimated coefficient of the Communist party membership increases substantially when Bosnia and Herzegovina is excluded, meaning that this country is mitigating the effect of party membership in the full sample of countries.

Figure 1. The effect of Communist party membership on bribe payments: excluding one country at a time



Note: The vertical axis shows the estimated coefficient and the 95% confidence interval of the Communist party variable in an instrumental variable regression when one country is excluded at a time (horizontal axis). The benchmark estimate is based on a specification that includes all countries (Column 2 of Table 4).

Next, we consider a potential threat to the exogeneity of our instruments related to the contention that people affected by WWII lived in urban areas and especially big cities –

because this is where bombing would occur.[15] If urban dwellers have more frequent contact with public officials and are more predisposed to bribery, and if such predisposition to bribery is transmitted across generations, instrument validity may be compromised. The inclusion of control for living in a capital and an urban area other than capital should, to some extent, address these concerns. In addition, we have estimated our models on a sample of respondents living in rural areas and the results, available in Table A4 of the Supplementary Information document, confirmed a positive and statistically significant relationship between the party membership and bribery, in line with the full-sample estimations.

5. DISCUSSION AND CONCLUSION

Across the former socialist world, a defining feature of the ruling Communist party elite was its engagement in corrupt deals and practices. While it has often been argued that the history of communist rule has contributed to the high levels of corruption observed in the post-socialist countries today, little was known about the exact mechanisms through which the former political regime may have been affecting present day corruption. This article aimed to shed light on this question by studying corruption behaviour and the attitudes of people with personal and family connections to the former Communist party, more than two decades after the breakdown of the Socialist bloc. We hypothesized that former Communist party membership leads to a higher likelihood of bribing public officials and more assertive bribing behaviour. We then tested these hypotheses using the instrumental variable technique and data from a large representative survey conducted in post-socialist countries in 2015/16.

[15] We thank the anonymous reviewer for highlighting that urbanisation may pose a threat for our instrument exogeneity.

Our key finding is that links to the former Communist party result in a higher likelihood of bribing public officials – on average by 13 percentage points. This finding supports our first hypothesis that people with a connection to the party are more likely to bribe public officials. As such, it substantiates a broader claim that former communist rule has contributed to present day corruption and, unsurprisingly, identifies people with party links as a main channel through which corruption has been 'transferred' across time and political regimes.

We also find that both former party membership and family links to a party member (being a child or relative) increase the likelihood of bribing public officials. This finding supports the conjecture that the corruption-inducing networks created by the former ruling elite were transmitted through family.

We also examined the motivations for bribery. Our hypothesis was that people with party links would engage in more assertive bribing behaviour: for example, they would *offer* bribes to public officials rather than be solicited for them. The results supported this hypothesis: among bribe payers, links to the former Communist party result in a higher likelihood of offering bribes to get things done quicker and better. We also found that connections to the former ruling party makes people bribe because they think bribes are expected. This suggests that the Communist party fostered the development of corruption norms among its members, and these norms were transmitted across time and family.

Our analysis has revealed that the *association* between the links to the former ruling party and the likelihood of bribery is lower than the *effect* of the party links on present-day bribery. For example, estimations that do not account for endogeneity suggest the former party members and the their relatives (other than children) are as likely to pay bribes as people without party connections, while the instrumental variable results show that former party membership and being a relative of a former party member increase the likelihood of paying

bribes. A possible explanation for this is a self-selection of people with particular characteristics into party membership. Specifically, it is possible that many people who joined the party during communist times strongly believed in communist ideals and, as such, had low tolerance towards bribery and other unlawful behaviours.[16] However, focusing on people who joined the Communist party for a reason that, we argue, is not related to one's inclination to pay bribes (because they fought or were otherwise affected by WWII) suggests a positive effect: in other words, former ruling party membership per se increases the likelihood of paying bribes long after the regime change.

The implications of our findings are twofold. First, our study reveals a group of people – former Communist party members and their children and relatives – who are susceptible to bribing public officials in the post-socialist space. Policymakers willing to reduce corruption could direct their efforts toward this group. Examples of actions include: monitoring interactions with public officials; given a greater likelihood of people with party links to offer bribes to public officials, a greater use of e-government to reduce face-to-face interactions with public officials as well as providing more opportunities for public officials to report bribe offerings in a safe and confidential way; and working with people linked to the party to change their attitudes towards bribery (see e.g. Weaver, 2015). Second, our findings suggest that corruption in the post-socialist countries is sustained over time and across generations, most likely through the persistence of informal networks[17] and/or cultural habits acquired in the recent past. This implies that regime change per se does not lead to the dismantling of networks or social norms and that the influence of these can resonate long into the

[16] It is, of course, possible that there was another group of people with more lenient attitudes towards corruption who wanted to join the party *because* they wanted to exploit its corruption-prone networks.

[17] Note that we have not been able to test for the persistence of networks directly and leave such exploration for future research.

future. These results align with the notion of institutional path dependency, whereby institutions, networks and norms are likely to persist even after a drastic political regime change (see e.g. Acemoglu and Robinson, 2010). From this perspective, our findings are relevant in the contexts of countries experiencing political transitions – both in the post-socialist world and beyond.

Conclusion

The article has explored the effects of former Communist party membership on paying bribes to public officials more than two decades after the fall of communist rule. Using data from a large representative survey conducted in post-socialist countries in 2015/16 and instrumental variable analysis, we found that links to the former Communist party increase the likelihood of bribing public officials – this applies to the former party members as well as their children and other relatives. Considering motivations for bribe payments, we found that the Communist party connections increase the likelihood of *offering* bribes to speed up or get a better public service, as well as the likelihood that a person considers that bribe payments are expected. Overall, our results suggest that the networks and social habits of the former Communist party members did not disappear with the regime change but were instead transmitted through family and thus sustained over time.

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SUPPLEMENTARY INFORMATION

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Table A1. Summary statistics of the variables included in the regressions (n=25,478; based on the sample of respondents included in the Heckman correction model, Table 1)

Variable	Observations	Mean	Std. Dev.	Min	Max
Contacted public official	25478	0.716	0.451	0	1
Paid a bribe (conditional on contact)	18235	0.170	0.375	0	1
Reasons so paying a bribe (conditional on bribe payment)					
I was asked to pay a bribe by public official	3095	0.163	0.370	0	1
I knew that an informal payment was expected	3095	0.325	0.468	0	1
Offered bribe to get things done quicker or better	3095	0.190	0.393	0	1
Paid a bribe to express gratitude	3095	0.336	0.472	0	1
Any (personal or family) link to the Communist party	25478	0.193	0.394	0	1
Former Communist party member	25478	0.051	0.221	0	1
Child of former Communist party member	25478	0.108	0.310	0	1
Relative of former Communist party member	25478	0.071	0.256	0	1
Woman	25478	0.550	0.498	0	1
Age (years)	25478	50.161	17.724	18	95
Primary education	25478	0.326	0.469	0	1
Secondary education	25478	0.461	0.498	0	1
Tertiary education	25478	0.213	0.410	0	1
Wealth index	25478	0.328	1.306	-9.584	0.885
Self-perceived position on 10-step income ladder	25478	4.614	1.649	1	10
Living in a capital city	25478	0.148	0.356	0	1
Living in urban area other than capital city	25478	0.406	0.491	0	1
Living in rural area	25478	0.446	0.497	0	1
Family member killed/injured in WWII	25478	0.180	0.384	0	1
Family member moved a result of WWII	25478	0.116	0.320	0	1

Table A2. Share of respondents whose relatives were affected by WWII, by country

	Family member killed/injured in WWII	Family member moved a result of WWII
Albania	4.48%	4.01%
Bosnia and Herzegovina	21.65%	15.92%
Bulgaria	13.16%	4.55%
Croatia	18.54%	9.58%
Czech Republic	8.30%	8.37%
Estonia	27.81%	35.41%
FYR Macedonia	13.56%	7.62%
Hungary	13.54%	6.70%
Kosovo	16.66%	12.34%
Latvia	31.52%	32.48%
Lithuania	15.86%	13.83%
Moldova	26.08%	5.57%
Montenegro	20.51%	5.99%
Poland	34.08%	23.69%
Romania	13.74%	4.20%
Serbia	23.23%	11.86%
Slovakia	9.46%	3.84%
Slovenia	18.75%	14.96%

Table A3. Communist party links and bribery, probit average marginal effects

		Reasons for paying bribe					Reasons for paying a bribe			
	Paid a bribe	I was asked to pay	I knew that an informal payment was expected	I offered to pay to get things done quicker or better	I wanted to express my gratitude	Paid a bribe	I was asked to pay	I knew that an informal payment was expected	I offered to pay to get things done quicker or better	I wanted to express my gratitude
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Any link to the Communist party	0.036***	-0.009	0.024	0.041**	-0.005	-	-	-	-	-
	(0.007)	(0.015)	(0.019)	(0.016)	(0.019)					
Former Communist party member	-	-	-	-	-	0.001	-0.013	-0.029	0.032	-0.043
						(0.013)	(0.030)	(0.037)	(0.031)	(0.036)
Child of former Communist party member	-	-	-	-	-	0.037***	0.013	0.041*	0.005	0.033
						(0.008)	(0.018)	(0.023)	(0.020)	(0.023)
Relative of former Communist party member	-	-	-	-	-	0.004	-0.074***	-0.018	0.080***	0.007
						(0.010)	(0.026)	(0.031)	(0.024)	(0.030)
Women	-0.003	-0.032**	-0.029*	-0.008	0.037**	-0.004	-0.030**	-0.029*	-0.010	0.036**
	(0.005)	(0.013)	(0.017)	(0.014)	(0.016)	(0.005)	(0.013)	(0.017)	(0.014)	(0.016)
Age	0.001	0.002	0.002	0.002	-0.001	0.001	0.002	0.002	0.002	-0.001
	(0.001)	(0.002)	(0.003)	(0.002)	(0.003)	(0.001)	(0.002)	(0.003)	(0.002)	(0.003)
Age squared	-0.000	-0.000	-0.000	-0.000	0.000	-0.000	-0.000	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Primary education	0.011	0.019	0.019	0.015	-0.029	0.010	0.017	0.016	0.017	-0.028
	(0.007)	(0.016)	(0.021)	(0.018)	(0.021)	(0.007)	(0.016)	(0.021)	(0.018)	(0.021)
Tertiary education	0.007	-0.016	-0.004	-0.008	0.017	0.008	-0.015	-0.003	-0.006	0.016
	(0.007)	(0.017)	(0.021)	(0.017)	(0.021)	(0.007)	(0.017)	(0.021)	(0.017)	(0.021)
Wealth index	0.004*	-0.012**	0.003	0.023***	0.005	0.004*	-0.012**	0.003	0.023***	0.005
	(0.002)	(0.005)	(0.007)	(0.007)	(0.007)	(0.002)	(0.005)	(0.007)	(0.007)	(0.007)
Perceived position on 10-step income ladder	0.011***	0.005	-0.004	0.002	0.005	0.011***	0.004	-0.005	0.002	0.005
	(0.002)	(0.004)	(0.005)	(0.005)	(0.005)	(0.002)	(0.004)	(0.005)	(0.005)	(0.005)
Capital city	0.012	0.040**	0.003	0.063***	-0.024	0.012	0.039**	0.002	0.063***	-0.026
	(0.008)	(0.020)	(0.025)	(0.020)	(0.025)	(0.008)	(0.020)	(0.025)	(0.020)	(0.025)
Urban area other than capital city	-0.006	0.018	0.027	0.005	0.006	-0.006	0.019	0.027	0.004	0.006
	(0.006)	(0.015)	(0.019)	(0.016)	(0.018)	(0.006)	(0.015)	(0.019)	(0.016)	(0.018)
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Observations	18,235	3,095	3,095	3,095	3,095	18,235	3,095	3,095	3,095	3,095
Prob > Chi^2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pseudo R^2	0.0848	0.0959	0.0426	0.0431	0.0831	0.0844	0.0992	0.0431	0.0451	0.0839

Notes: The dependent variable in Columns 1 and 6 is a dichotomous variable *paid a bribe*; the model is estimated on the subsample of respondents who had a contact with public officials. The dependent variables in Columns 2-5 and 7-10 are dichotomous variables capturing a specific reason for paying a bribe; these models are estimated on a subsample of respondents who paid a bribe to at least one type of public official. All models are estimated with binary probit and average marginal effects are reported. *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level. Heteroscedasticity-robust standard errors in parentheses. Omitted groups in all specifications are: men, secondary education, living in rural area. Countries included in the analysis: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Former Yugoslav Republic of Macedonia, Hungary, Kosovo, Latvia, Lithuania, Moldova, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia.

Table A4. Communist party links and bribery, instrumental variable probit results and the rural areas subsample

VARIABLES	Paid a bribe	Reasons for bribery				Paid a bribe	Paid a bribe	Paid a bribe	Respondents from rural areas	
		I was asked to pay	I knew that an informal payment was expected	I offered to pay to get things done quicker or better	I wanted to express my gratitude				Paid a bribe	Paid a bribe
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Any link to the Communist party	0.123***	0.072	0.269**	0.250**	-0.042	-	-	-	0.179**	0.192**
	(0.045)	(0.128)	(0.118)	(0.105)	(0.146)				(0.076)	(0.076)
Former Communist party member	-	-	-	-	-	0.449***	-	-	-	-
						(0.157)				
Child of former Communist party member	-	-	-	-	-	-	0.185***	-	-	-
							(0.066)			
Relative of former Communist party member	-	-	-	-	-	-	-	0.237***	-	-
								(0.082)		
Women	-0.001	-0.031**	-0.025	-0.006	0.037**	0.024**	-0.002	-0.007	0.002	0.004
	(0.005)	(0.013)	(0.016)	(0.014)	(0.016)	(0.010)	(0.005)	(0.005)	(0.008)	(0.008)
Age	0.000	0.001	0.000	-0.000	-0.001	-0.009**	-0.001	0.002*	0.001	0.001
	(0.001)	(0.002)	(0.003)	(0.002)	(0.003)	(0.004)	(0.001)	(0.001)	(0.001)	(0.001)
Age squared	-0.000	-0.000	-0.000	-0.000	0.000	0.000*	0.000	-0.000**	-0.000	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Primary education	0.016**	0.026	0.037*	0.031	-0.032	0.022**	0.014*	0.014**	0.003	0.007
	(0.007)	(0.019)	(0.022)	(0.019)	(0.024)	(0.010)	(0.007)	(0.007)	(0.011)	(0.011)
Tertiary education	0.001	-0.021	-0.020	-0.022	0.019	-0.019	0.002	0.007	-0.005	-0.005
	(0.008)	(0.019)	(0.021)	(0.018)	(0.023)	(0.013)	(0.008)	(0.007)	(0.013)	(0.013)
Wealth index	0.004	-0.012**	0.003	0.022***	0.005	0.002	0.004	0.004	0.006*	0.004
	(0.002)	(0.005)	(0.007)	(0.007)	(0.007)	(0.003)	(0.002)	(0.002)	(0.003)	(0.003)
Perceived position on 10-step income ladder	0.011***	0.005	-0.002	0.003	0.005	0.013***	0.011***	0.012***	0.016***	0.017***
	(0.002)	(0.004)	(0.005)	(0.005)	(0.005)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
Capital city	0.009	0.036*	-0.010	0.049**	-0.022	0.030***	0.005	0.009	-	-
	(0.008)	(0.021)	(0.025)	(0.022)	(0.026)	(0.011)	(0.009)	(0.008)		
Urban area other than capital city	-0.008	0.016	0.018	-0.001	0.007	-0.005	-0.007	-0.009	-	-
	(0.006)	(0.015)	(0.019)	(0.016)	(0.019)	(0.007)	(0.006)	(0.006)		

Country-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	18,235	3,095	3,095	3,095	3,095	11,217	18,235	18,235	7,904	7,904

Notes: The table reports the results of the 2nd stage instrumental variable estimations, where the instruments for the Communist party variables are: *Family member killed/injured in WWII* and *Family member moved as a result of WWII*. The dependent variable in Columns 1 and 6-10 is a dichotomous variable *paid a bribe*; the model is estimated on the subsample of respondents who had a contact with public officials, estimation in Column 6 also excludes respondents younger than 44, and estimations in Columns 9 and 10 include only rural respondents. The dependent variables in Columns 2-5 are dichotomous variables capturing a specific reason for paying a bribe; these models are estimated on a subsample of respondents who paid a bribe to at least one type of public official. Models 1-8 and 10 are estimated with instrumental variable probit, average marginal effects are reported. Model 9 estimated with 2SLS. *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level. Heteroscedasticity-robust standard errors in parentheses. Omitted groups in all specifications are: male, secondary education, living in rural area (except Models 9 and 10). Countries included in the analysis: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Former Yugoslav Republic of Macedonia, Hungary, Kosovo, Latvia, Lithuania, Moldova, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia.