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and Present-Day Entrepreneurship in
Central and Eastern Europe**

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ABSTRACT

Former Communist Party Membership and Present-Day Entrepreneurship in Central and Eastern Europe*

After the collapse of Communism in Central and Eastern Europe, former party members were particularly likely to start businesses and become entrepreneurs. However, it remains unclear whether this entrepreneurial activity was driven by the resources, information and opportunities provided by former party membership or because people with specific individual attributes were more likely to become party members (self-selection). This study is the first to separate the causal effect of former Communist party membership from self-selection. Using individual-level Life in Transition–III survey and instrumental variables analysis, we find that, in Central and Eastern European countries, membership of former Communist party has facilitated business set-up but not business longevity. Our results also suggest evidence of negative self-selection, meaning that people who joined the former ruling party tended have fewer of the traits associated with entrepreneurship such as motivation, risk tolerance, and entrepreneurial spirit. We show that former Communist party membership still matters for business practices, business ethics, and the nature of doing business in transition economies.

JEL Classification: L26, P20, P31

Keywords: communism, communist party, elite networks, entrepreneurship, post-socialist countries

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1. Introduction

The Communist regimes of Central and Eastern Europe (CEE) typically strictly forbade private enterprise as it was incompatible with the principles of top-down command economies.¹ Because they did not allow owning private property and market exchange, and considered state reliance and conformity more ethical and moral than individualism and self-initiative, former Communist states created both institutional and cultural obstacles to entrepreneurship (Estrin & Mickiewicz, 2011; Neimanis, 1997).

While vibrant entrepreneurial activity is one of the key indicators of the success of the marketization and democratization processes in CEE, the negative legacy of Communism is still evident in the low entrepreneurship levels in the CEE compared to other parts of the world (Aidis et al., 2008). The literature identifies the main barriers to entrepreneurship in CEE as being both institutional and historical (Aidis & Adachi, 2007; Estrin et al., 2006; Estrin & Mickiewicz, 2011; McMillan & Woodruff, 2002). Given that entrepreneurship improves human welfare through contributing to economic growth, innovation, job creation, and even well-being and health (Kritikos, 2014; Nikolova, 2019; van Praag & Versloot, 2007), studying the causes of entrepreneurial activity is instrumental to promoting social welfare in CEE.

Despite extensive anecdotal evidence that people with links to the former Communist party were particularly likely to become entrepreneurs when the regime changed (Karpov, 2017; Kotz and

¹ Nevertheless, the Communist regimes allowed private agriculture in Poland, Yugoslavia, Bulgaria, and Hungary (Milanovic, 1998). In addition, informal sector private work, craft enterprises in Poland and business work partnerships in Hungary whereby workers could rent equipment from the state-owned enterprises to produce their own products can also be seen as a form of private enterprise (Smallbone & Welter, 2001).

Weir, 2007, p.113; Shapiro, 1991), the academic literature on whether and how past experiences with Communism and Communist party membership matter for present-day entrepreneurship in CEE and the FSU regions is sparse. While a handful of empirical studies find that former party links matter for entrepreneurship (Aidis et al., 2008; Djankov et al., 2005; Nikolova & Simroth 2015), they remain silent on what drives the association between former party links and present-day entrepreneurship: access to resources, information and opportunities provided by the party networks that have persisted over time, or the possibility that people with different unobservable traits such as motivation, ability, or entrepreneurial aptitude were more likely to become party members and subsequently entrepreneurs (self-selection). The objective of our study is to shed light on the mechanisms through which association with the former ruling elite matters for entrepreneurship today. We do so by separating the causal effect of former Communist party membership from that of self-selection. Specifically, using a large household-level survey data from the Life in Transition-III, we conduct an instrumental variable analysis that allows us to distinguish between the role of former party membership and self-selection for entrepreneurial outcomes in Central and Eastern Europe, 25 years after the fall of Communism.

We contribute to and substantively extend two main strands of literature in economics and business. First, and most importantly, we add to the scarce empirical literature on the determinants of entrepreneurship in Central and Eastern Europe (Aidis et al., 2008; Djankov et al., 2005; Nikolova & Simroth, 2015) by focusing on the role of political connections as proxied by former Communist party membership. Specifically, we are the first to offer a *causal* estimate of the relationship using a nationally representative sample of transition economies rather than Russia as

in seminal papers by Aidis et al. (2008) and Djankov et al. (2005).² In addition, the availability of the entrepreneurship module in the 2016 Life in Transition (LiTS) survey allows us to distinguish between entrepreneurship trial, failure, and success, which is a unique feature of our research. We find that membership of former Communist party has facilitated business set-up but not business longevity. Our results also suggest that people with unobservable traits linked to entrepreneurship such as motivation, risk tolerance, and entrepreneurial ability were less likely to join the former ruling party.

Second, and more broadly, we add to the growing literature on the medium and long-term consequences of socialism and the Communist party on socio-economic outcomes, such as education, corruption, and trust (Alesina & Fuchs-Schündeln, 2007; Ivlevs & Hinks, 2018; Lipmann & Senik, 2018; Nikolova et al., 2019; Rainer & Siedler, 2009). Specifically, we show that, 25 years after the fall of socialist regimes, personal and family links to the former Communist party still matter to entrepreneurship.

The remainder of the paper is organised as follows. Section 2 reviews the literature and outlines theoretical background underpinning our empirical analyses. Section 3 presents our data, variables and estimation strategy. Section 4 reports and discusses the results, followed by a conclusion in Section 5.

² The following countries are included into our instrumental variable analysis analysis: 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. In the first part of the paper, we show results using all transition economies, including the former USSR. Turkmenistan is not polled by the LITS-III.

2. Conceptual Background and Related Literature

We outline four channels through which former Communist party links may still influence entrepreneurial outcomes today.

First, the business environment in some CEE countries tends to be bureaucratic, highly corrupt, and dysfunctional, which creates multiple hurdles to doing business such as raising the administrative costs of setting up and operating a business. Unsurprisingly, perceptions of administrative complexities hinder entrepreneurship in CEE (van der Zwan et al., 2011). Also, given weak law enforcement, people in post-communist economies demonstrate less stringent ethical attitudes than their counterparts in market economies. For instance, people exposed to Communism tolerate copyright violations and tax evasion (Vynoslavskaya et al. 2005). As the Communist regime thwarted private enterprise and the culture of entrepreneurship (Aidis et al., 2008; Estrin et al., 2006; Neimanis, 1997), people exposed to Communism were generally less likely to develop entrepreneurial skills, which would limit their ability to start and successfully run businesses after the regime change. From this perspective, people with the former Communist party links would be less likely to be present-day entrepreneurs.

Second, former Communist party membership may matter through guarding against weak or dysfunctional institutions, which are still eminent in some transition economies. Given the environment of weak institutions and weak enforcement of property rights, business networks creating informal institutions based on trust could act as a substitute to the formal rule of law (Smallbone & Welter, 2001). For instance, the system of elite exchange of mutual favors to tackle shortages and circumvent formal procedures during Communism – *blat* – was fundamental for

entrepreneurial activities in transition (Aidis et al., 2008; Ledeneva, 1998; Smallbone & Welter, 2001). Furthermore, Aidis and Adachi (2007) document that “friendly ties” with the local authorities are important complements or substitutes to bribing to ensure business success in Russia. Beyond providing access to capital and finance in the set-up phase, these former networks and connections may also create barriers to entry for outsiders thus assisting regime insiders secure their status quo. Therefore, those without connections may be at a disadvantage when starting and maintaining a business because they may be vulnerable to economic and political insecurity and extortion from public officials or the criminal world (Aidis et al., 2008).

Third, after the fall of Communism, party connections assisted former elites in securing capital and resources to start their own businesses (Aidis et al., 2008). For example, shortly after the regime change, managers of former state-owned enterprises and those close to politics typically privatized these businesses by purchasing them at a very small cost (Estrin et al., 2009; Hamm et al., 2012; Shelley, 1992). As such, those with connections to the Communist party typically got a head start and became “nomenclatura entrepreneurs” (Estrin et al., 2006; Filatotchev, Starkey, & Wright, 1994; Smallbone & Welter, 2001). From this perspective, the former Communist party members are more likely to start their own businesses. However, business managers with the former Communist party membership background are less aggressive competitors than those without party associations, meaning that the former Communists are less likely to be engaged in consumer fraud or predatory pricing (Brouthers, Lascu, & Werner, 2008; Neimanis, 1997). This can be explained by their higher risk aversion developed under the Communist ideology and desire to maintain status quo and own benefits (Neimanis, 1997). This suggests that despite being successful in the set-up phase, the former Communist party members

may be less successful in maintaining their business in a long-run as compared to those without the former party affiliation.

Finally, in some former communist countries, such as Latvia, people closely linked to the former ruling regime (for example, the former Communist party members and secret regime informants) were barred from performing certain jobs, such as running for political office (Euractiv, 2002). Facing no career prospects for the high-level political jobs, a scarcity of jobs in the private sector and possible stigma attached to being affiliated with the former ruling regime, former Communist party members may have had little choice but to become entrepreneurs. From this perspective, former Communist party members would be more likely to become entrepreneurs after the regime change.

Our paper most closely relates to, yet fundamentally differs from, the contribution by Aidis et al. (2008) who examine how the institutional environment and current business ownership matter for entrepreneurial development in Russia. The authors find that knowing entrepreneurs and being a current business owner increase the likelihood of starting a new business in Russia, which points to the embeddedness of entrepreneurial networks. While we build on the insights in Aidis et al. (2008), we differ in that we do not focus on Russia but rather on the CEE region. Furthermore, we use a different proxy for entrepreneurial networks (former Communist party membership) and most importantly, we provide causal estimates rather than conditional correlations.

We also acknowledge two related papers. First, Djankov et al. (2005) show that parental Communist party is not robustly associated with being an entrepreneur or with the number of years of being an entrepreneur in Russia. At the same time, parental education and having entrepreneur friends and family is positively associated with being an entrepreneur. Second, in a contribution

examining the role of religious diversity and entrepreneurship in CEE and Central Asia, Nikolova and Simroth (2015) use former Communist party membership as a control variable and find that former Communist party ties are positively associated with entrepreneurial trial but not with successfully having set up a business.

3. Data, variables, and estimation strategy

3.1. Data

We use cross-sectional nationally representative survey data from the Life in Transition-III (LiTS-III),³ collected by the European Bank of Reconstruction and Development and the World Bank in 2015/16. The survey covered 29 post-socialist countries of Central and Eastern Europe and Central Asia (including Mongolia), as well as Turkey, Greece, Cyprus and Germany and Italy. Our analysis sample comprises post-socialist countries as information on Communist party membership was only elicited there. The survey excluded Turkmenistan.

In each country, the LiTS-III conducted 1,500 face-to-face interviews. Households were selected according to a two-stage clustered stratified sampling 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

³ The two previous waves of this (repeated cross-sectional) survey were conducted in 2006 (Life in Transition-I) and 2010 (Life in Transition-II). 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. Also, a set of detailed questions on entrepreneurial activity as well as the geolocation of respondents were only available in the third wave of the survey.

sampling units. Further information about the survey design and implementation are available in the LiTS Annex (EBRD, 2016).

3.2. Variables

Our main objective is to estimate the effect of former Communist party membership (main explanatory variable) on present-day individual entrepreneurship activity (main outcome). This section details the measurement of the outcome, explanatory and control variables included in the econometric analysis.

Outcome variables: entrepreneurial activity

A unique feature of our the LiTS-III is that it contains detailed information on respondents' past and present entrepreneurial activities. Our key dependent variable (*started business*) is based on responses to the question "Have you ever tried to set up a business?", with possible answers "Yes, I have set up my current business", "Yes I set up a business in the past but I am no longer involved in it or it is no longer operational", "Yes I tried to set up a business and did not succeed (in setting it up)" and "No."

Main explanatory variable: former Communist party membership

Our key independent variable captures connections with the former Communist party based on whether respondents themselves, their parents or other family members were party members prior to 1989/1991.⁴ First, the variable *any personal or family link to the Communist party* takes value

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

1 when the respondent has a personal or family connection with the Communist party and 0 otherwise. Next, we created three separate dichotomous variables measuring: i) individuals who themselves were party members; ii) the children of former party members; and iii) the relatives (other than children) of former party members. These categories can overlap because the respondent can be a former party member and at the same time have parents or relatives who were party members. About 21 percent of respondents in our analysis sample report links to the former Communist party, ranging from 39 percent in Montenegro to 12 percent in Hungary.

Control variables

Our regressions include standard control variables used in the entrepreneurship literature (e.g., Aidis et al., 2008; Block et al., Demirgüç-Kunt et al., 2007; Djankov et al., 2005; Estrin et al., 2013; Nikolova & Simroth, 2015). Specifically, we add to our regressions three sets of control variables. First, the set of individual- and household-level controls consists of respondent's gender, age and its square, ethnic minority status, religious affiliation, retirement and disability status, respondent's height, respondent's education, a wealth index based on the information about household assets, employment status, marital status, household size, number of children under 18, subjective health assessment, risk attitudes, and current membership of any political party, parental education, and the number of books at home during the respondent's childhood. Second, the set of geography-related controls consists of the urbanity status (capital, urban-not-capital, rural), latitude, longitude and elevation of the respondent's place of residence. Finally, to account for all

possible country-level influences and capture within-country relationships between former Communist party membership and entrepreneurship, we include country fixed effects.⁵

To avoid bias from dropping observations with missing information, we create an additional category for missing information where the share of missing observations for a particular categorical variable is greater than 1%. The only continuous variable with the share of missing observations higher than 1% is the respondent's height (11% missing observations); here we create within-country height tertiles, and treat the variable as categorical with missing observations being the fourth category. The missing category for these variables has no particular interpretation but only serves to preserve the number of observations.

3.3. Estimation strategy

We model the entrepreneurship outcome *started business* of each individual i living in country j is as follows:

$$\text{Started business}_{i,j} = \beta_0 + \beta_1 \text{Communist party}_{i,j} + \mathbf{X}_{i,j}'\boldsymbol{\gamma} + \varepsilon_{i,j} \quad (1)$$

where *Communist party* denotes the variable capturing personal and family ties to the former Communist party, and \mathbf{X} is a vector of control variables as described above and ε is the stochastic error term that captures residual factors not included into Equation (1).

⁵ For brevity, we only report the tables with the full set of controls but alternative specifications are available upon request.

Given the categorical and unordered nature of the dependent variable, we estimate the model using a multinomial logit. The parameter β_l captures the *association* between the former Communist party membership and entrepreneurial activity. The Communist party variable is potentially endogenous, meaning that β_l may not reflect the true causal effect of party membership on entrepreneurship but rather the self-selection into entrepreneurship across households. For example, individuals living in households with certain family environments or observed or unobserved characteristics related to motivation or ability may be more likely to both have a former party member and start a business.⁶

To mitigate endogeneity issues and identify causal effects, we employ an instrumental variable technique. This approach necessitates one or more variables – instruments – that are highly correlated with the endogenous regressor (former Communist party membership) and affect the outcome (entrepreneurship) only through the endogenous regressor. Following Ivlevs and Hinks (2018), we instrument personal and family links to the Communist party with information about the involvement of respondents' family members in the Second World War (WWII). Ivlevs and Hinks (2018) summarise evidence showing that, across the former socialist world, 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. 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).

⁶ While we include a set of control variables that mitigate the endogeneity related to self-selection, we lack important control variables related to parental occupation, which could also result in endogeneity due to omitted variables bias.

The assumption about instrument exogeneity, i.e., that being affected by WWII (or being the descendant of such people) is uncorrelated with the error term necessitates further discussion. While this assumption is fundamentally untestable, we provide historical arguments about its plausibility. It is unlikely that, when WWII started, people would join the army because they thought it would make it easier to join the ruling party during or after the war which, *in turn*, would help establish businesses after a regime change. However, some people might have wished to go to war in anticipation of joining the party and benefiting from the advantages that party membership brings (for example, be in power/managerial positions and exploit advantageous networks). If the personal characteristics of such individuals are linked with traits that determine the likelihood and success of entrepreneurial activities, the instruments may not be exogenous. To ensure that these considerations pose no threat to our instruments' validity, following Ivlevs and Hinks (2018), we concentrate on the Central and Eastern Europe (CEE) countries that did not have Communist regimes before WWII. This allows us to rule out the possibility that people in these countries joined the war effort in order to become members of the Communist party during or after the war. 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 Our analysis sample therefore only includes this set of countries.

⁷ We include the three Baltic States and Moldova 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

We measure respondents', their parents' and grandparents' involvement in WWII using information from two survey questions: i) "Were you, your parents and any of your grandparents physically injured or were your parents or any of your grandparents killed during WWII?" and ii) "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*,⁸ 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.

Instrumental variable analyses with categorical dependent variables are challenging. Terza et al. (2008) show that in a non-linear model, such as multinomial logit that we use in our study, the standard two-stage least squares estimation will not produce consistent results; instead, they recommend using a two-stage-residual-inclusion (2RSI) procedure. The idea behind the 2SRI technique is to conduct a standard first-stage auxiliary regression, whereby a potentially endogenous regressor (i.e., former Communist party membership) is explained by the instruments and all the control variables, and to include the predicted first-stage residuals, alongside the endogenous regressor, into the second stage equation. The estimated coefficient of the endogenous regressor in the second stage represents the unbiased effect of the Communist party on

from other USSR republics, predominantly Russia, Belarus and Ukraine (Ivlevs and King, 2012; Laitin, 1998), we exclude from the analysis respondents of Russian, Belorussian and Ukrainian ethnic origin.

⁸ Importantly, 15% of the respondents provided no answers to these questions and are excluded from the analysis.

entrepreneurial activity, while the coefficient estimate on the predicted residuals captures the endogeneity bias. Formally, the 2SRI procedure can be expressed as follows:

$$\text{First stage: } Communist\ party_{ij} = \gamma_0 + \gamma_1 Instruments_{ij} + \mathbf{X}_{ij}' \pi + u_{ij} \quad (2)$$

$$\text{Second stage: } Started\ business_{ij} = \tilde{\beta}_0 + \tilde{\beta}_1 Communist\ party_{ij} + \alpha u_{ij}^{est} + \mathbf{X}_{ij}' \tilde{\gamma} + \varepsilon_{ij} \quad (3)$$

where, for each individual i in a country j , \mathbf{X} is a vector of all control variables (including country fixed effects), u is the error term of the first-stage regression, u^{est} is the predicted residual from the first-stage equation, and ε is the error term in the second-stage regression.

The main advantage of the 2RSI estimation is that the coefficient estimate of the predicted residuals α represents a direct test for the exogeneity of the regressor of interest (Bollen et al. 1995). If it is not statistically different from 0, one fails to reject the null hypothesis that the regressor is exogenous and the model should be estimated by a non-linear regression (in our case, multinomial logit).

Finally, given the likely interdependence of respondent outcomes at the local level, we always cluster the standard errors at the primary sampling unit (PSU) level.

4. Results

4.1. Summary Statistics

Figure 1 and Table 1 below demonstrate that overall, about 5.5 percent of respondents are current business owners, 3.6 percent started a business, which subsequently closed down, 2.6 percent failed at starting a business, and about 88 percent were never involved in a start-up. These statistics are similar across the group of post-socialist countries and also comparable to the figures for the

non-transition countries in the LiTS-III (Cyprus, Greece, Germany, Italy, Turkey, N=7,504) (Table 1).

Table 1. Distribution of respondents who have set up a business, tried to set up a business, failed to set up a business, and never tried to set up a business in country groups in the LiTS

	Business still active		Business closed down		Failed at setting up a business		Never tried	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
All post-socialist countries, N=42,548	0.055	0.229	0.035	0.185	0.032	0.176	0.877	0.328
Former Soviet Union, N=22,104	0.055	0.228	0.040	0.196	0.040	0.197	0.864	0.342
Balkans, N=14,453	0.055	0.229	0.027	0.162	0.024	0.153	0.894	0.308
Visegrad, N=4,463	0.055	0.229	0.027	0.162	0.024	0.153	0.894	0.308
Baltics, N=4,464	0.057	0.233	0.062	0.241	0.026	0.158	0.855	0.352
Analysis sample in Table 3, N=20,922	0.055	0.228	0.036	0.187	0.024	0.152	0.885	0.319
Cyprus, Greece, Germany, Italy, Turkey, N=7,504	0.055	0.228	0.036	0.187	0.024	0.152	0.885	0.319

Source: Authors' calculations based on data from the LiTS-III

Notes: The table summarizes the mean of the proportion of responses to the question "Have you ever tried to set up a business?", with possible answers "Yes, I have set up my current business", "Yes I set up a business in the past but I am no longer involved in it or it is no longer operational", "Yes I tried to set up a business and did not succeed (in setting it up)" and "No." The Balkans sample includes Croatia, Bosnia and Herzegovina, Slovenia, Serbia, Montenegro, Kosovo, Macedonia, Romania, Bulgaria, and Albania. The Visegrad countries are Poland, Slovakia, Czech Republic, and Hungary. The Baltics are Estonia, Latvia, and Lithuania. The former Soviet Union countries are: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Mongolia, Russia, Tajikistan, Ukraine, and Uzbekistan. Turkmenistan is not included in the LiTS-III. The analysis sample in Table 3 group includes 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.

Table 2 further demonstrates differences in the characteristics of respondents with and without links to the former Communist party. Specifically, those with former ruling party ties tend to be older, are more likely to be male, more educated, and to have grown up in a home with more than

200 books. We expect that these differences matter for the selection of households into entrepreneurship based on former political connections.

Table 2: Selected summary statistics, analysis sample

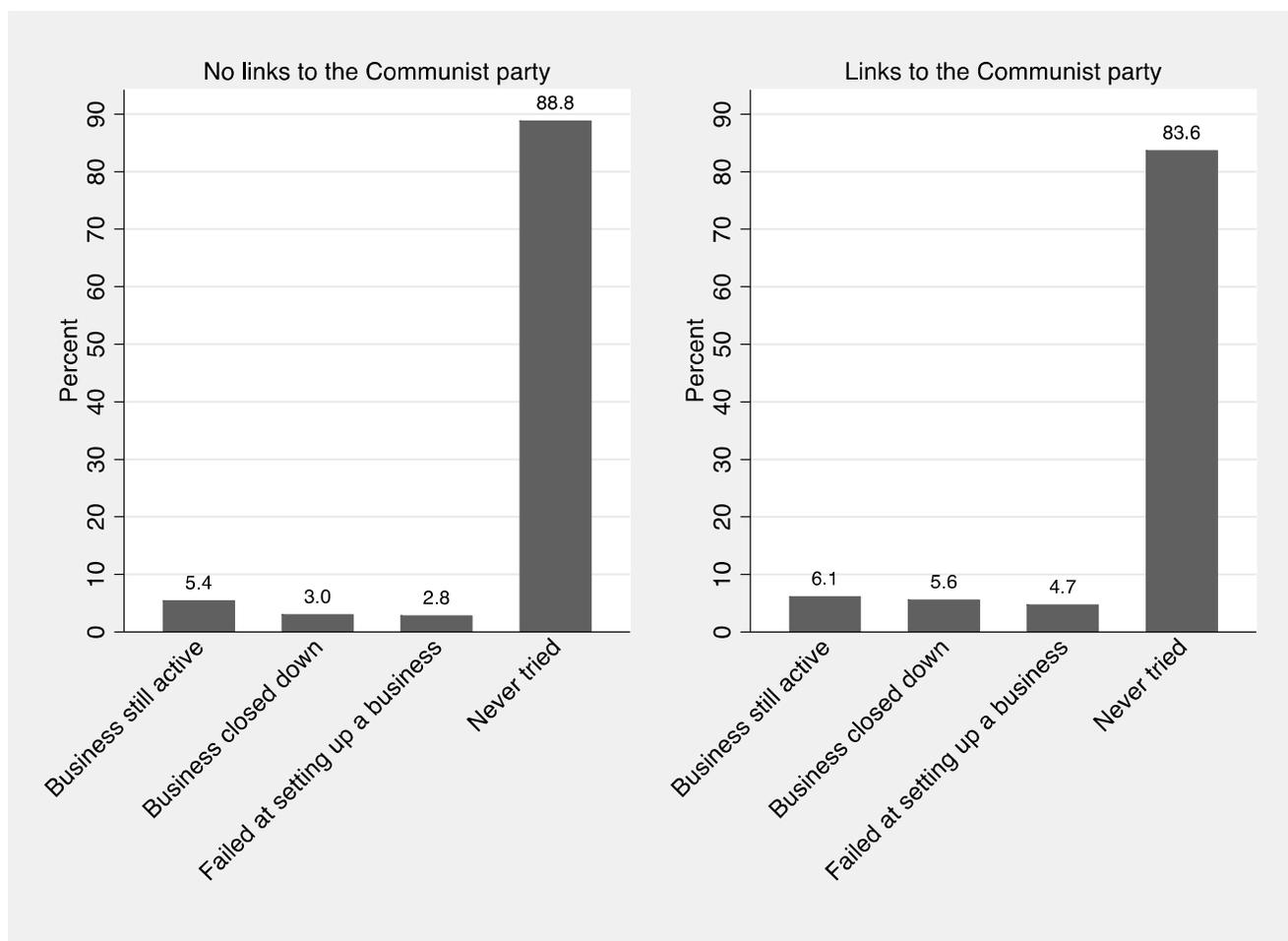
	No links to the Communist party, N=16,594		Links to the Communist party, N=4,328	
	Mean	Std.Dev.	Mean	Std.Dev.
Age*	50.284	17.772	55.665	16.449
Male*	0.441	0.497	0.465	0.499
Tertiary education*	0.203	0.402	0.262	0.440
Wealth index (Scale 1-8)	5.455	1.699	5.461	1.670
Had more than 200 books in childhood*	0.072	0.259	0.111	0.314

Source: Authors' calculations based on data from the LiTS-III

Note: * designates statistically significant difference in means between those with and those without Communist party membership links at the 1 percent or lower.

Figure 1 offers the first glimpse into differences in entrepreneurship outcomes according to Communist party membership. Evidently, those connected to the former ruling elites are more likely to have tried and succeeded in setting up a business than individuals without such connections. Nevertheless, in subsequent analyses, we test whether these raw differences withstand robust econometric analyses.

Figure 1: Distribution of respondents who have set up a business, tried to set up a business, failed to set up a business, and never tried to set up a business, by former Communist party links



Source: Authors' calculations based on data from the LiTS-III

Notes: The figure summarizes the mean of the proportion of responses to the question “Have you ever tried to set up a business?”, with possible answers “Yes, I have set up my current business”, “Yes I set up a business in the past but I am no longer involved in it or it is no longer operational”, “Yes I tried to set up a business and did not succeed (in setting it up)” and “No.”

4.2. Main results

Table 3 reports the results of the multinomial logit model without accounting for the endogeneity of the Communist party variable. To save space, we only report the marginal effects of the focal

regressors; complete econometric output, including the raw multinomial logit coefficients, is available in the Appendix.

The results in Column (1) suggest that having personal or family links to the former Communist party is a statistically insignificant predictor of having set up and running a business at the time of the interview. Meanwhile, people with the Communist party links are 1.2 percentage points more likely to report that they set up a business in the past but were no longer involved in it or the business was no longer operational, 0.7 percentage points more likely to report that they tried to set up a business in the past but did not succeed in doing so, and 2.1 percentage points less likely to report that they never tried to set up a business.

Table 3. Links to the former Communist party and present-day entrepreneurial activity, multinomial logit marginal effects

	I have set up my current business	I set up a business in the past but I am no longer involved in it or it is no longer operational	I tried to set up a business and did not succeed	I never tried to set up a business
	(1)	(2)	(3)	(4)
Any link to the Communist party	0.002 (0.004)	0.012*** (0.003)	0.007*** (0.003)	-0.021*** (0.005)
Individual/household-level controls	Yes	Yes	Yes	Yes
Geography controls	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes
Observations	20,922			
Wald Chi ²	2,838.290			
Prob > Chi ²	0.000			
Pseudo R ²	0.144			

Source: Authors' calculations based on data from the LiTS-III

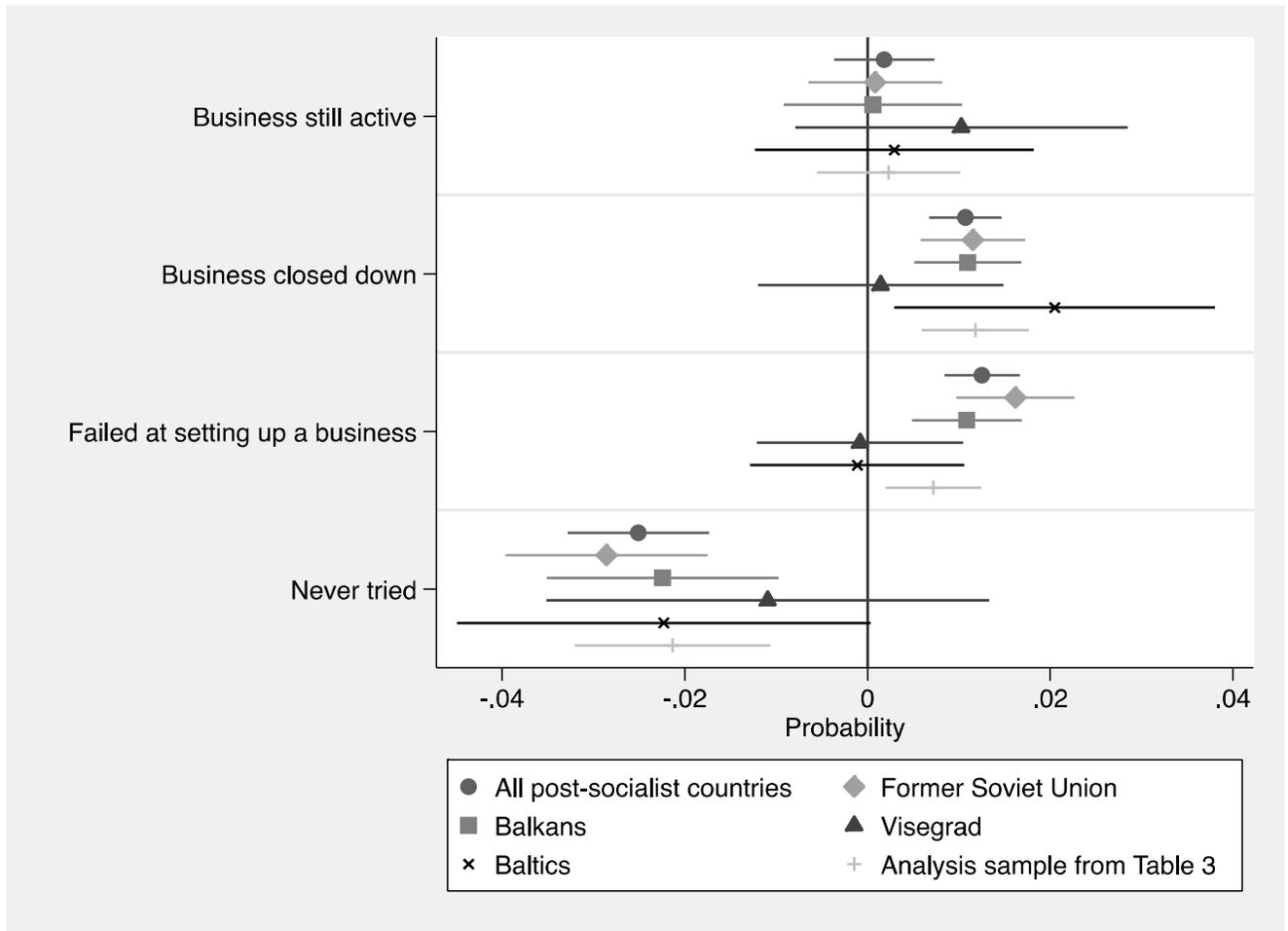
Notes: Standard errors, clustered at the primary sampling unit level, in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Individual/household-level controls include gender, age and its square, ethnic minority status, religious affiliation, being retired, being disabled, height, education level, wealth index, employment status, marital status, household size,

number of children under 18, subjective health assessment, risk attitudes, membership of (any) political party, parental education, and the number of books at home during the respondent's childhood. Geography controls include the urbanity status (capital, urban-not-capital, rural), latitude, longitude and elevation of the respondent's place of residence. See Supplementary Information for complete econometric output.

The results presented in Table 3 hold across all post-socialist country contexts. Specifically, we replicated the analyses in Table 3 for the full sample of post-socialist countries in the LiTS-III, as well for the Balkans, Baltics, Visegrad, and former Soviet Union countries. Figure 2 below summarizes the results from these additional country contexts and demonstrates that the relationship between former Communist party membership and entrepreneurship are nearly universal in the transition region. Interestingly, however, former Communist party membership in the Visegrad countries (Poland, Czech Republic, Slovakia, and Hungary) is unassociated with entrepreneurship trial and success. Given that entrepreneurship existed in these countries even before the fall of the Communist regimes, Visegrad entrepreneurs likely did not have to rely on political connections and informal networks but rather on their past experiences to succeed.

Figure 2: Links to the former Communist party and present-day entrepreneurial activity, multinomial logit marginal effects



Source: Authors' calculations based on data from the LiTS-III

Notes: The figure shows the effect of former Communist party membership on the predicted probability of each value of the outcome variable. The reported coefficient estimates are reported as marginal effects based on multinomial logistic regressions with standard errors clustered at the primary sampling unit level. Individual/household-level controls include gender, age and its square, ethnic minority status, religious affiliation, being retired, being disabled, height, education level, wealth index, employment status, marital status, household size, number of children under 18, subjective health assessment, risk attitudes, membership of (any) political party, parental education, and the number of books at home during the respondent's childhood. Geography controls include the urbanity status (capital, urban-not-capital, rural), latitude, longitude and elevation of the respondent's place of residence. The regressions for Visegrad and Baltics include own education and parental education as binary indicators for tertiary education. The Balkans sample includes Croatia, Bosnia and Herzegovina, Slovenia, Serbia, Montenegro, Kosovo, Macedonia, Romania, Bulgaria, and Albania. The Visegrad countries are Poland, Slovakia, Czech Republic, and Hungary. The Baltics are Estonia, Latvia, and Lithuania. The former Soviet Union countries are: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Mongolia, Russia, Tajikistan, Ukraine, and Uzbekistan. Turkmenistan is not included in the LiTS-III. Complete econometric output, on which the graph is based, available on request.

Overall, our results imply that people with links to the former Communist party are more likely to report having tried - successfully or unsuccessfully - to set up a business in the past, although not necessarily being involved in the business at the time of the interview. This finding holds across the transition region and is not particular to the CEE. Nevertheless, these results represent *associations* between links to the former Communist party and present-day entrepreneurial activities and reflect, among other things, the causal effect of former party membership on present-day entrepreneurship as well as the self-selection into the party of people with specific characteristics that also affect the likelihood of undertaking entrepreneurial activities. To disentangle the causal effect of party links from self-selection, we now turn to the instrumental variable analysis.

Table 4 reports the results from the instrumental variables regressions. 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), strongly predict links to the former Communist party. Instrument relevance is further confirmed by the F-test of excluded instruments, the value of which (151.89) exceeds the commonly accepted threshold value of 10.

The second-stage results (Columns 2-5 of Table 2) reveal statistically significant coefficients of the 1st stage residuals for all outcomes of the *started business* variable except having set up a current business, indicating that the Communist party variable is indeed endogenous. When we account for endogeneity, Communist party ties increase the likelihood of having set up a business in the past but being no longer involved in it (or business being non-operational) by 4.1 percentage

points, having unsuccessfully tried to set up a business by 4.1 percentage points, and decrease the likelihood of having never tried to set up a business by 12.2 percentage points.

Concerning having set up and being involved in a current business (Column 2 of Table 4), a statistically insignificant estimate of the 1st stage predicted residuals implies no endogeneity for this outcome and that the correlational result of Column 1 of Table 3 should be used. We thus conclude that former Communist party membership has no effect on having set up and currently running a business. Taken together, the results suggest Communist party ties were indeed instrumental in facilitating business set-ups. However, these political ties did not make sure that in the long term (25 years after the regime change) these businesses were on average more successful or that people who set them up would still be running them.

At the same time, the negative and statistically significant estimate of the first-stage residuals variable suggests that it is people with traits that make them less entrepreneurial who tended to self-select into the Communist party. Put differently, had Communist party and the Communist regime not existed, we would observe that these people, conditional on other control variables, were less – not more – likely to be start businesses.

Table 4. Links to the former Communist party and present-day entrepreneurial activity, instrumental variable results

	1 st stage		2 nd stage Dependent variable – started business		
	Any link to the Communist party	I have set up my current business	I set up a business in the past but I am no longer involved in it or it is no longer operational	I tried to set up a business and did not succeed	I never tried to set up a business
	(1)	(2)	(3)	(4)	(5)
Any link to the Communist party	-	0.039* (0.023)	0.041*** (0.015)	0.041*** (0.012)	-0.122*** (0.031)
1 st stage predicted residuals	-	-0.038 (0.023)	-0.030* (0.016)	-0.035*** (0.013)	0.103*** (0.031)
Individual/household-level controls	Yes	Yes	Yes	Yes	Yes
Geography-related controls	Yes	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes	Yes
Family member killed/injured in WWII	0.353*** (0.039)	-	-	-	-
Family member moved as a result of WWII	0.217*** (0.041)	-	-	-	-
<i>F test of excluded instruments</i>	151.89***				
<i>Observations</i>	20,922		20,922		
<i>Wald Chi²</i>	-		2,840.300		
<i>Prob > Chi²</i>	-		0.000		
<i>Pseudo R²</i>	-		0.145		

Source; Authors' calculations based on data from the LiTS-III

Notes: Standard errors, clustered at the primary sampling unit level, in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The 1st stage of the instrumental variable model is estimated with the Generalized Linear Model (GLM) technique, the 2nd stage is estimated with multinomial logit. Individual/household-level controls include gender, age and its square, ethnic minority status, religious affiliation, being retired, being disabled, height, education level, wealth index, employment status, marital status, household size, number of children under 18, subjective health assessment, risk attitudes, membership of (any) political party, parental education, and the number of books at home during the respondent's childhood. Geography controls include the urbanity status (capital, urban-not-capital, rural), latitude, longitude and elevation of the respondent's place of residence. Complete econometric output available on request.

4.3. Additional analyses

This section provides additional insights into the relationship between links to the former Communist party and present-day entrepreneurship. First, we split 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 the correlational model, reported in Table 5, show that it is the former party members and their children who are driving the results: they are more likely (by 1.4 and 0.9 percentage points, respectively) to report that they set up a business in the past but are no longer involved in it and less likely (by 3.1 and 1.2 percentage points, respectively) to report that they have never tried to set up a business.

Table 5. Personal and family links to the former Communist party and present-day entrepreneurial activity, multinomial logit marginal effects

	I have set up my current business	I set up a business in the past but I am no longer involved in it or it is no longer operational	I tried to set up a business and did not succeed	I never tried to set up a business
	(1)	(2)	(3)	(4)
Former Communist party member	0.012 (0.008)	0.014*** (0.005)	0.005 (0.005)	-0.031*** (0.010)
Child of Communist party member	-0.001 (0.005)	0.009*** (0.003)	0.004 (0.003)	-0.012* (0.006)
Relative of Communist party member	-0.006 (0.006)	0.004 (0.005)	0.006 (0.004)	-0.004 (0.009)
Individual/household-level controls	Yes	Yes	Yes	Yes
Geography-related controls	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes
Observations	20,922			
Wald Chi ²	2868.490			
Prob > Chi ²	0.000			
Pseudo R ²	0.144			

Source; Authors' calculations based on data from the LiTS-III

Notes: Standard errors, clustered at the primary sampling unit level, in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Individual/household-level controls include gender, age and its square, ethnic minority status, religious affiliation, being retired, being disabled, height, education level, wealth index, employment status, marital status, household size, number of children under 18, subjective health assessment, risk attitudes, membership of (any) political party, parental education, and the number of books at home during the respondent's childhood. Geography controls include the urbanity status (capital, urban-not-capital, rural), latitude, longitude and elevation of the respondent's place of residence. Complete econometric output available on request.

Next, we expect that the links to the former ruling party are less important for younger people. To test for this possibility, we interact the links to the Communist party variable with age, keeping the Communist party, age and age squared variables in the model. The party-age interaction term was statistically insignificant for all categories of the dependent variable, meaning - alarmingly - that

the links to the former Communist party are equally important for entrepreneurial activity for both younger and older people.

Next, to determine if particular individual value orientations drive the relationship between the former Communist party ties and present-day entrepreneurship, we make use of the a LiTS-III question asking respondents about the most important factor to succeed in life, with possible answers including: effort and hard work; intelligence and skills; by political connections; and by breaking the law. First, people with the former Communist party links are less likely to say that effort and skills are important and more likely to say that political connections and breaking the law matter for success (Table 6).⁹

Table 6. Factors important to succeed in life among people with and without ties to the former Communist party, sample means and their difference

In your opinion, what is the most important factor to succeed in life in your country?	No links to Communist party N=16,594	Links to the Communist Party N=4,328
Effort and hard work *	0.377 (0.485)	0.335 (0.472)
Intelligence and skills *	0.228 (0.419)	0.231 (0.421)
By political connections *	0.254 (0.435)	0.289 (0.453)
By breaking the law *	0.074 (0.262)	0.088 (0.284)

Source; Authors' calculations based on data from the LiTS-III

Notes: Standard deviations in parentheses.* designates statistically significant difference in means between those with and those without Communist party membership links at the 1 percent or lower. The sample of respondents is the same as in Table 3.

⁹ This finding is also confirmed if we regress the value orientation variable on the Communist party variable and the same set of control variables as in Table 1, in a multinomial logit.

Second, we include the factors that respondents identified as the most important to succeed in life as additional controls in the correlational model (Equation 1). The results, reported in Table 7, show that the Communist party variable marginal effects are very similar to those reported in Table 3. This implies that specific value orientations do not drive the relationship between the former party links and present-day entrepreneurship. It is interesting however that, controlling for the former Communist party links and relative to people who think that effort and hard work are the most important factor for succeed in life, those who have named intelligence and skills, political connections, and breaking the law are all significantly less likely to have a current business and significantly more likely to say they have never tried to set up a business.

Table 7. Former Communist party ties, factors most important to succeed in life, and present-day entrepreneurial activity, multinomial logit marginal effects

	I have set up my current business	I set up a business in the past but I am no longer involved in it or it is no longer operational	I tried to set up a business and did not succeed	I never tried to set up a business
	(1)	(2)	(3)	(4)
Former Communist party member	0.003 (0.004)	0.012*** (0.003)	0.007*** (0.003)	-0.022*** (0.006)
The most important factor to succeed in life:				
<i>Effort and hard work</i>	Ref.	Ref.	Ref.	Ref.
<i>Intelligence and skills</i>	-0.010** (0.004)	0.002 (0.004)	-0.005 (0.003)	0.013*** (0.006)
<i>By political connections</i>	-0.014*** (0.004)	-0.000 (0.004)	0.002 (0.003)	0.012** (0.006)
<i>By breaking the law</i>	-0.020*** (0.006)	-0.008* (0.005)	0.000 (0.004)	0.028*** (0.009)

Individual/household-level controls	Yes	Yes	Yes	Yes
Geography-related controls	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes
<hr/>				
Observations	20,922			
Wald Chi ²	3011.930			
Prob > Chi ²	0.000			
Pseudo R ²	0.146			

Source; Authors' calculations based on data from the LiTS-III

Notes: Standard errors, clustered at the primary sampling unit level, in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Individual/household-level controls include gender, age and its square, ethnic minority status, religious affiliation, being retired, being disabled, height, education level, wealth index, employment status, marital status, household size, number of children under 18, subjective health assessment, risk attitudes, membership of (any) political party, parental education, and the number of books at home during the respondent's childhood. Geography controls include the urbanity status (capital, urban-not-capital, rural), latitude, longitude and elevation of the respondent's place of residence. Complete econometric output available on request.

5. Conclusion

This paper is the first causal exploration of the long-term consequences of the former Communist party ties for entrepreneurship in the post-socialist region. Our results demonstrate that ties to the former ruling elites are instrumental for entrepreneurial start-up but not for entrepreneurial success. We also show that those with less favorable traits such as lower risk aversion, lower ability, or lower entrepreneurial aptitude, were in fact more likely to join the party. In subsequent analyses, we also show that people with the former Communist party links believe that success depends on political connections and breaking the law rather than effort and skills. These findings raise questions about the moral dimensions of business practice in the region and about whether the playing field has been leveled 25 years after the fall of the communist regimes.

From a business ethics perspective, our findings can be interpreted in one of two ways depending on whether former Communists and their children were pushed or pulled into entrepreneurship.

On the one hand, the fact that the Communist party allowed for the head start in entrepreneurship entry may entail that the party had laid the foundations of inequality of opportunity in terms of entrepreneurship. On the other hand, our findings could be indicative of the fact that the last capable Communist party members (or their children) became entrepreneurs and then subsequently closed down their business due to a lack of formal alternatives in the labor market. In other words, these individuals may have been “necessity entrepreneurs” rather than “nomenclatura entrepreneurs.” In both cases, the fact that the former elites were negatively selected on traits such as ability and entrepreneurial aptitude combined with the current low levels of entrepreneurship in the transition region suggests that the negative consequences of Communism for entrepreneurship were two-fold. First, Communism had a long-lasting damaging effect on entrepreneurship by encouraging a culture state-reliance rather than self-imitative, which is inimical to free enterprise. Second, despite its focus on equality and egalitarianism, paradoxically, Communism laid the foundations of unequal access to entrepreneurship by excluding those with resources and connections from starting a business, at least in the initial stages of democracy. From a social viewpoint, the fact that the least capable people attempted to start a business and subsequently failed while also crowding out people without elite connections may suggest a social welfare loss.

Our study also offers opportune avenues for future research, such as distinguishing the rank of the party member (i.e., a party member vs. party official) and unpacking the particular traits that made individuals or household more likely to become party members but at the same time made them less entrepreneurial.

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Supplementary Information

This document contains the summary statistics of the variables included in the analysis (Table S1, p.2) and complete econometric output for Table 3 of the article (Table S2, p.6).

Table A1. Summary statistics of variables included in the analysis (based on a sample of 20,922 respondents included in the main model, Table 3 of the article)

	Mean	Std. Dev.	Min	Max
Entrepreneurship experience				
<i>I have set up my current business</i>	0.055	0.228	0	1
<i>I set up a business in the past but I am no longer involved in it or it is no longer operational</i>	0.036	0.187	0	1
<i>I tried to set up a business and did not succeed</i>	0.024	0.152	0	1
<i>I never tried to set up a business</i>	0.885	0.319	0	1
Any link to the Communist party	0.207	0.405	0	1
Former Communist party	0.058	0.233	0	1
Child of Communist party member	0.115	0.320	0	1
Relative of Communist party member	0.075	0.263	0	1
What is the most important factor to succeed in life?				
<i>Effort and hard work</i>	0.368	0.482	0	1
<i>Intelligence and skills</i>	0.228	0.420	0	1
<i>By political connections</i>	0.261	0.439	0	1
<i>By breaking the law</i>	0.077	0.267	0	1
<i>Other</i>	0.030	0.172	0	1
<i>Don't know</i>	0.035	0.183	0	1
Male	0.446	0.497	0	1
Age	51.397	17.641	18	95
Married	0.544	0.498	0	1
Household size	2.537	1.471	1	10
Number of children	0.435	0.838	0	8
Education level				
<i>No education</i>	0.018	0.132	0	1
<i>Primary</i>	0.137	0.344	0	1
<i>Lower secondary</i>	0.173	0.378	0	1
<i>Upper secondary</i>	0.358	0.479	0	1
<i>Post-secondary non-tertiary</i>	0.099	0.299	0	1
<i>Tertiary (less than bachelor's degree)</i>	0.060	0.238	0	1
<i>Bachelor's degree</i>	0.100	0.300	0	1
<i>Master's or PhD</i>	0.055	0.228	0	1
Wealth index	5.456	1.693	0	8
House owner	0.855	0.352	0	1

Working status				
<i>Worked in the past 12 months</i>	0.490	0.500	0	1
<i>Not worked in the past 12 months but worked before</i>	0.328	0.469	0	1
<i>Never worked</i>	0.182	0.386	0	1
Looking for work	0.069	0.253	0	1
Disability	0.022	0.146	0	1
Retired	0.317	0.465	0	1
Linguistic minority	0.140	0.347	0	1
Religion				
<i>Atheistic</i>	0.117	0.321	0	1
<i>Orthodox</i>	0.313	0.464	0	1
<i>Catholic</i>	0.345	0.475	0	1
<i>Other Christian including Protestant.</i>	0.050	0.218	0	1
<i>Muslim</i>	0.144	0.352	0	1
<i>Other</i>	0.020	0.141	0	1
<i>Refusal</i>	0.010	0.098	0	1
Member of any political party	0.061	0.239	0	1
Health index (1 – very bad, ..., 5 – very good)	3.524	0.952	1	5
Willingness to take risks (1 – not at all willing, ..., 10 – very much willing)				
1	0.158	0.365	0	1
2	0.087	0.282	0	1
3	0.107	0.310	0	1
4	0.089	0.285	0	1
5	0.159	0.366	0	1
6	0.109	0.312	0	1
7	0.105	0.306	0	1
8	0.075	0.264	0	1
9	0.030	0.171	0	1
10	0.051	0.221	0	1
<i>No answer</i>	0.029	0.167	0	1
Height tertile				
1 st	0.343	0.475	0	1
2 nd	0.291	0.454	0	1
3 rd	0.288	0.453	0	1
<i>No answer</i>	0.079	0.269	0	1
Mother's education				

<i>No education</i>	0.127	0.333	0	1
<i>Primary</i>	0.358	0.480	0	1
<i>Lower secondary</i>	0.178	0.383	0	1
<i>Upper secondary</i>	0.202	0.402	0	1
<i>Post-secondary non-tertiary</i>	0.049	0.216	0	1
<i>Tertiary (less than bachelor's degree)</i>	0.024	0.153	0	1
<i>Bachelor's degree</i>	0.025	0.157	0	1
<i>Master's or PhD</i>	0.016	0.125	0	1
<i>Information missing</i>	0.021	0.142	0	1
Father's education				
<i>No education</i>	0.081	0.273	0	1
<i>Primary</i>	0.310	0.462	0	1
<i>Lower secondary</i>	0.219	0.414	0	1
<i>Upper secondary</i>	0.221	0.415	0	1
<i>Post-secondary non-tertiary</i>	0.053	0.224	0	1
<i>Tertiary (less than bachelor's degree)</i>	0.027	0.161	0	1
<i>Bachelor's degree</i>	0.033	0.179	0	1
<i>Master's or PhD</i>	0.021	0.144	0	1
<i>Information missing</i>	0.035	0.183	0	1
Number of books in childhood				
0-10	0.281	0.449	0	1
11-25	0.255	0.436	0	1
26-100	0.262	0.440	0	1
101-200	0.095	0.293	0	1
200+	0.080	0.272	0	1
<i>Books information missing</i>	0.028	0.166	0	1
Urbanity status				
<i>Capital</i>	0.146	0.353	0	1
<i>Urban (except capital)</i>	0.412	0.492	0	1
<i>Rural</i>	0.443	0.497	0	1
Elevation	243.270	217.403	-3	1501
Longitude	20.763	3.874	12.660	29.825
Latitude	47.196	5.097	13.726	59.499
Country				
<i>Albania</i>	0.056	0.231	0	1
<i>Bosnia and Herzegovina</i>	0.048	0.215	0	1

<i>Bulgaria</i>	0.053	0.223	0	1
<i>Croatia</i>	0.060	0.238	0	1
<i>Czech Republic</i>	0.066	0.248	0	1
<i>Estonia</i>	0.044	0.206	0	1
<i>North Macedonia</i>	0.055	0.229	0	1
<i>Hungary</i>	0.058	0.234	0	1
<i>Kosovo</i>	0.056	0.230	0	1
<i>Latvia</i>	0.044	0.206	0	1
<i>Lithuania</i>	0.058	0.234	0	1
<i>Moldova</i>	0.054	0.225	0	1
<i>Montenegro</i>	0.045	0.208	0	1
<i>Poland</i>	0.060	0.238	0	1
<i>Romania</i>	0.059	0.236	0	1
<i>Serbia</i>	0.056	0.230	0	1
<i>Slovak Republic</i>	0.062	0.241	0	1
<i>Slovenia</i>	0.064	0.245	0	1

Table S2. Complete econometric output for Table 3 of the article: multinomial logit coefficients (columns 1.1-1.3) and average marginal effects (columns 2.1-2.4)

	Coefficients (Base outcome: I never tried to set up a business)			Average marginal effects			
	I have set up my current business	I set up a business in the past but I am no longer involved in it or it is no longer operational	I tried to set up a business and did not succeed	I have set up my current business	I set up a business in the past but I am no longer involved in it or it is no longer operational	I tried to set up a business and did not succeed	I never tried to set up a business
	1.1	1.2	1.3	2.1	2.2	2.3	2.4
Any links to the Communist Party	0.0851 (0.0850)	0.375*** (0.0903)	0.350*** (0.119)	0.00231 (0.00401)	0.0118*** (0.00299)	0.00722*** (0.00267)	-0.0213*** (0.00546)
Male	0.466*** (0.0836)	0.476*** (0.105)	0.575*** (0.116)	0.0197*** (0.00388)	0.0141*** (0.00351)	0.0113*** (0.00255)	-0.0450*** (0.00567)
Age	0.0623*** (0.0166)	0.186*** (0.0207)	0.108*** (0.0226)	0.00223*** (0.000790)	0.00589*** (0.000703)	0.00207*** (0.000509)	-0.0102*** (0.00112)
Age squared	-0.0414** (0.0178)	-0.151*** (0.0198)	-0.111*** (0.0239)	-0.00133 (0.000847)	-0.00478*** (0.000665)	-0.00222*** (0.000541)	0.00833*** (0.00113)
Married	-0.189** (0.0769)	-0.206** (0.0968)	-0.00742 (0.122)	-0.00849** (0.00374)	-0.00638* (0.00328)	0.000461 (0.00270)	0.0144*** (0.00541)
Household size	-0.0371 (0.0401)	-0.0824 (0.0509)	0.000106 (0.0544)	-0.00154 (0.00189)	-0.00264 (0.00169)	0.000175 (0.00122)	0.00400 (0.00268)
Number of children	0.155*** (0.0556)	0.149** (0.0727)	-0.0525 (0.0783)	0.00706*** (0.00263)	0.00457* (0.00242)	-0.00166 (0.00175)	-0.00998*** (0.00379)
Education level (Ref: no education)							
<i>Primary</i>	0.118 (0.623)	0.267 (0.774)	0.702 (0.740)	0.00280 (0.0187)	0.00516 (0.0147)	0.00994 (0.00824)	-0.0179 (0.0238)
<i>Lower secondary</i>	0.603	0.714	0.884	0.0206	0.0167	0.0126	-0.0499**

	(0.639)	(0.780)	(0.721)	(0.0195)	(0.0150)	(0.00781)	(0.0240)
<i>Upper secondary</i>	0.700	0.735	0.883	0.0252	0.0172	0.0124	-0.0548**
	(0.634)	(0.780)	(0.718)	(0.0192)	(0.0149)	(0.00753)	(0.0236)
<i>Post-secondary non-tertiary</i>	0.669	0.884	1.169	0.0227	0.0222	0.0193**	-0.0642***
	(0.640)	(0.788)	(0.737)	(0.0197)	(0.0155)	(0.00862)	(0.0248)
<i>Tertiary (less than bachelor's degree)</i>	0.705	0.862	1.147	0.0245	0.0213	0.0187**	-0.0645**
	(0.646)	(0.794)	(0.739)	(0.0202)	(0.0158)	(0.00890)	(0.0251)
<i>Bachelor's degree</i>	0.545	0.478	0.889	0.0185	0.00966	0.0131	-0.0412*
	(0.640)	(0.789)	(0.732)	(0.0196)	(0.0152)	(0.00806)	(0.0242)
<i>Master's or PhD</i>	0.828	0.893	0.802	0.0316	0.0226	0.0102	-0.0644**
	(0.646)	(0.796)	(0.750)	(0.0203)	(0.0160)	(0.00858)	(0.0252)
Wealth index	0.343***	0.326***	0.0642	0.0153***	0.00981***	0.000373	-0.0254***
	(0.0350)	(0.0331)	(0.0447)	(0.00166)	(0.00114)	(0.000984)	(0.00211)
House owner	0.164	-0.489***	-0.316**	0.00952**	-0.0189***	-0.00734**	0.0167**
	(0.103)	(0.114)	(0.138)	(0.00438)	(0.00504)	(0.00372)	(0.00706)
Working status (Ref: Worked in the past 12 months)							
<i>Not worked in the past 12 months but worked before</i>	-1.344***	0.326*	-0.0276	-0.0502***	0.0150**	0.000739	0.0345***
	(0.191)	(0.177)	(0.192)	(0.00535)	(0.00678)	(0.00466)	(0.00885)
<i>Never worked</i>	-1.510***	-0.190	-0.452**	-0.0524***	-0.00233	-0.00717*	0.0619***
	(0.194)	(0.193)	(0.202)	(0.00471)	(0.00559)	(0.00377)	(0.00763)
Looking for work	-0.697***	0.449**	0.506***	-0.0277***	0.0188**	0.0144**	-0.00548
	(0.228)	(0.196)	(0.179)	(0.00617)	(0.00917)	(0.00588)	(0.0118)
Disability	-2.288**	0.327	-0.157	-0.0492***	0.0165	-0.00196	0.0346**
	(0.993)	(0.268)	(0.363)	(0.00631)	(0.0123)	(0.00754)	(0.0151)
Retired	-0.799***	-0.00729	-0.501**	-0.0295***	0.00214	-0.00891**	0.0363***
	(0.236)	(0.191)	(0.254)	(0.00696)	(0.00663)	(0.00448)	(0.00985)
Linguistic minority	-0.210*	0.201*	0.270*	-0.0105**	0.00734	0.00671*	-0.00356
	(0.118)	(0.122)	(0.141)	(0.00489)	(0.00458)	(0.00370)	(0.00729)
Religion (ref: atheist)							
<i>Orthodox</i>	-0.171	-0.0198	-0.145	-0.00823	-1.83e-05	-0.00265	0.0109
	(0.185)	(0.217)	(0.258)	(0.00920)	(0.00814)	(0.00533)	(0.0129)
<i>Catholic</i>	-0.288**	-0.349**	0.228	-0.0134**	-0.0109**	0.00666	0.0176*
	(0.132)	(0.145)	(0.186)	(0.00657)	(0.00494)	(0.00463)	(0.00908)
<i>Other Christian</i>	-0.177	-0.0181	0.319	-0.00945	-0.000565	0.00855	0.00146

	(0.192)	(0.168)	(0.251)	(0.00907)	(0.00626)	(0.00706)	(0.0124)
<i>Muslim</i>	-0.0946	-0.301	-0.111	-0.00377	-0.00968	-0.00182	0.0153
	(0.197)	(0.270)	(0.287)	(0.0101)	(0.00854)	(0.00599)	(0.0139)
<i>Other</i>	0.356*	0.138	0.382	0.0197	0.00341	0.00853	-0.0316*
	(0.213)	(0.221)	(0.336)	(0.0134)	(0.00876)	(0.00944)	(0.0177)
<i>Refusal</i>	-0.230	-0.518	1.069**	-0.0132	-0.0167	0.0407*	-0.0107
	(0.377)	(0.432)	(0.435)	(0.0166)	(0.0105)	(0.0234)	(0.0280)
Member of any political party	0.474***	0.420***	0.453***	0.0231***	0.0135**	0.00991**	-0.0465***
	(0.117)	(0.159)	(0.165)	(0.00704)	(0.00679)	(0.00491)	(0.0103)
Health status	0.0449	-0.0231	-0.169**	0.00253	-0.000690	-0.00384***	0.00200
	(0.0509)	(0.0561)	(0.0657)	(0.00239)	(0.00185)	(0.00147)	(0.00330)
Willingness to take risks (Ref: 1 – Not at all)							
2	-0.199	0.262	0.255	-0.00857	0.00734	0.00425	-0.00302
	(0.189)	(0.181)	(0.261)	(0.00737)	(0.00504)	(0.00437)	(0.00990)
3	-0.114	0.159	0.337	-0.00531	0.00411	0.00582	-0.00461
	(0.175)	(0.176)	(0.240)	(0.00714)	(0.00458)	(0.00414)	(0.00906)
4	-0.202	0.0954	0.277	-0.00841	0.00257	0.00479	0.00105
	(0.182)	(0.179)	(0.244)	(0.00722)	(0.00455)	(0.00406)	(0.00914)
5	0.185	0.442***	0.294	0.00706	0.0123***	0.00429	-0.0237***
	(0.156)	(0.158)	(0.230)	(0.00684)	(0.00446)	(0.00367)	(0.00882)
6	0.145	0.414**	0.551**	0.00482	0.0112**	0.00980**	-0.0258***
	(0.164)	(0.181)	(0.237)	(0.00717)	(0.00528)	(0.00436)	(0.00963)
7	0.255	0.667***	0.795***	0.00882	0.0200***	0.0155***	-0.0444***
	(0.161)	(0.176)	(0.228)	(0.00719)	(0.00576)	(0.00463)	(0.00994)
8	0.600***	0.874***	0.688***	0.0276***	0.0280***	0.0114**	-0.0670***
	(0.170)	(0.177)	(0.239)	(0.00855)	(0.00662)	(0.00470)	(0.0114)
9	0.674***	0.448*	0.881***	0.0336***	0.0102	0.0172**	-0.0611***
	(0.202)	(0.264)	(0.284)	(0.0115)	(0.00819)	(0.00704)	(0.0155)
10 (Very much willing to take risks)	0.723***	0.913***	1.162***	0.0338***	0.0282***	0.0256***	-0.0876***
	(0.186)	(0.213)	(0.236)	(0.0102)	(0.00840)	(0.00617)	(0.0140)
Risk information missing	-0.254	-0.113	0.576	-0.0103	-0.00263	0.0116	0.00136
	(0.319)	(0.380)	(0.353)	(0.0114)	(0.00849)	(0.00816)	(0.0151)
Height tertile (Ref: 1 st)							
2 nd	0.0547	-0.0325	0.0929	0.00244	-0.00130	0.00192	-0.00305
	(0.0950)	(0.108)	(0.139)	(0.00433)	(0.00351)	(0.00294)	(0.00585)

<i>3rd</i>	0.162 (0.104)	0.107 (0.130)	0.250 (0.156)	0.00693 (0.00486)	0.00290 (0.00443)	0.00525 (0.00349)	-0.0151** (0.00720)
<i>Height information missing</i>	-0.0333 (0.161)	-0.225 (0.213)	-0.269 (0.227)	-0.000573 (0.00718)	-0.00650 (0.00606)	-0.00465 (0.00387)	0.0117 (0.00965)
Mother's education level (Ref: no education)							
<i>Primary</i>	-0.0657 (0.170)	-0.0958 (0.190)	0.199 (0.257)	-0.00337 (0.00869)	-0.00339 (0.00692)	0.00416 (0.00471)	0.00260 (0.0111)
<i>Lower secondary</i>	-0.144 (0.201)	-0.298 (0.228)	0.484 (0.306)	-0.00721 (0.0101)	-0.00980 (0.00788)	0.0117* (0.00629)	0.00529 (0.0133)
<i>Upper secondary</i>	-0.209 (0.209)	-0.0471 (0.232)	0.128 (0.315)	-0.0101 (0.0104)	-0.00120 (0.00843)	0.00287 (0.00582)	0.00842 (0.0136)
<i>Post-secondary non-tertiary</i>	-0.193 (0.248)	-0.0707 (0.264)	0.353 (0.366)	-0.00973 (0.0120)	-0.00236 (0.00947)	0.00801 (0.00771)	0.00408 (0.0158)
<i>Tertiary (less than bachelor's degree)</i>	0.249 (0.260)	-0.153 (0.330)	-0.227 (0.482)	0.0150 (0.0148)	-0.00590 (0.0112)	-0.00393 (0.00749)	-0.00521 (0.0179)
<i>Bachelor's degree</i>	-0.144 (0.280)	0.128 (0.331)	-0.0567 (0.430)	-0.00738 (0.0135)	0.00552 (0.0130)	-0.000908 (0.00748)	0.00277 (0.0195)
<i>Master's or PhD</i>	0.0781 (0.292)	-0.323 (0.363)	0.448 (0.493)	0.00414 (0.0155)	-0.0110 (0.0110)	0.0102 (0.0120)	-0.00330 (0.0212)
<i>Mother's education missing</i>	-0.0768 (0.388)	-0.0367 (0.363)	0.332 (0.559)	-0.00437 (0.0190)	-0.00148 (0.0130)	0.00718 (0.0129)	-0.00134 (0.0244)
Father's education level (Ref: no education)							
<i>Primary</i>	-0.153 (0.216)	0.259 (0.250)	-0.173 (0.314)	-0.00767 (0.0110)	0.00716 (0.00583)	-0.00387 (0.00761)	0.00438 (0.0140)
<i>Lower secondary</i>	-0.157 (0.237)	0.449 (0.283)	0.0315 (0.346)	-0.00873 (0.0120)	0.0129* (0.00694)	0.000648 (0.00847)	-0.00484 (0.0159)
<i>Upper secondary</i>	-0.0798 (0.239)	0.400 (0.289)	-0.185 (0.354)	-0.00455 (0.0122)	0.0113 (0.00710)	-0.00441 (0.00847)	-0.00239 (0.0158)
<i>Post-secondary non-tertiary</i>	0.0686 (0.260)	0.949*** (0.310)	0.0725 (0.394)	0.000452 (0.0135)	0.0330*** (0.0102)	0.000347 (0.00968)	-0.0338* (0.0184)
<i>Tertiary (less than bachelor's degree)</i>	-0.244 (0.297)	0.503 (0.354)	-0.00498 (0.457)	-0.0126 (0.0142)	0.0151 (0.0103)	-0.000158 (0.0112)	-0.00229 (0.0198)
<i>Bachelor's degree</i>	0.0906	0.594	0.107	0.00295	0.0173	0.00181	-0.0220

	(0.279)	(0.364)	(0.422)	(0.0146)	(0.0111)	(0.0106)	(0.0200)
<i>Master's or PhD</i>	-0.103	0.636*	-0.816	-0.00553	0.0206*	-0.0144	-0.000633
	(0.318)	(0.377)	(0.521)	(0.0157)	(0.0122)	(0.00918)	(0.0215)
<i>Father's education missing</i>	-0.127	0.564*	-0.210	-0.00723	0.0173*	-0.00500	-0.00505
	(0.314)	(0.341)	(0.541)	(0.0153)	(0.0102)	(0.0118)	(0.0214)
Number of books in childhood (Ref: 0-10)							
11-25	-0.187*	0.0718	-0.158	-0.00829*	0.00299	-0.00306	0.00836
	(0.110)	(0.126)	(0.145)	(0.00502)	(0.00410)	(0.00309)	(0.00664)
26-100	-0.0520	-0.0163	-0.0432	-0.00233	-0.000336	-0.000831	0.00349
	(0.120)	(0.135)	(0.163)	(0.00565)	(0.00423)	(0.00356)	(0.00749)
101-200	0.0364	0.274*	0.155	0.000647	0.00937*	0.00324	-0.0133
	(0.143)	(0.161)	(0.204)	(0.00685)	(0.00569)	(0.00488)	(0.00962)
200+	0.418***	0.224	0.420*	0.0213***	0.00570	0.00965	-0.0367***
	(0.145)	(0.175)	(0.218)	(0.00815)	(0.00598)	(0.00604)	(0.0110)
Books information missing	0.135	-0.727	0.111	0.00808	-0.0172**	0.00294	0.00618
	(0.259)	(0.458)	(0.328)	(0.0137)	(0.00803)	(0.00807)	(0.0164)
Urbanity status (Ref: capital city)							
<i>Urban (excl. capital city)</i>	0.0880	-0.0928	-0.342**	0.00496	-0.00295	-0.00907**	0.00706
	(0.112)	(0.126)	(0.133)	(0.00489)	(0.00439)	(0.00374)	(0.00752)
<i>Rural</i>	0.171	-0.129	-0.499***	0.00938*	-0.00420	-0.0125***	0.00729
	(0.115)	(0.137)	(0.152)	(0.00515)	(0.00470)	(0.00396)	(0.00796)
Elevation	0.000242	0.000387	0.000355	9.73e-06	1.18e-05	7.02e-06	-2.85e-05*
	(0.000223)	(0.000272)	(0.000283)	(1.04e-05)	(8.94e-06)	(6.30e-06)	(1.50e-05)
Longitude	0.00636	-0.0378	0.00942	0.000390	-0.00129	0.000244	0.000654
	(0.0304)	(0.0314)	(0.0423)	(0.00143)	(0.00103)	(0.000936)	(0.00203)
Latitude	-0.0552***	0.00930	-0.0113	-0.00263***	0.000477	-0.000157	0.00231
	(0.0157)	(0.0264)	(0.0765)	(0.000742)	(0.000889)	(0.00174)	(0.00161)
Country (Ref: Albania)							
<i>Bosnia and Herzegovina</i>	-0.787***	-0.314	-0.332	-0.0424***	-0.00625	-0.00621	0.0548***
	(0.241)	(0.380)	(0.414)	(0.0138)	(0.0110)	(0.0122)	(0.0192)
<i>Bulgaria</i>	-1.149***	0.00575	0.236	-0.0571***	0.00285	0.0113	0.0429*
	(0.325)	(0.396)	(0.424)	(0.0155)	(0.0124)	(0.0140)	(0.0237)
<i>Croatia</i>	-0.965***	0.0962	-0.849*	-0.0496***	0.00721	-0.0159	0.0583**
	(0.300)	(0.403)	(0.489)	(0.0153)	(0.0132)	(0.0144)	(0.0226)
<i>Czech Republic</i>	-0.386	0.0774	0.299	-0.0257	0.00330	0.0114	0.0109

	(0.308)	(0.458)	(0.733)	(0.0192)	(0.0146)	(0.0239)	(0.0286)
<i>Estonia</i>	-0.180	0.511	-0.446	-0.0132	0.0215	-0.0109	0.00257
	(0.424)	(0.610)	(1.465)	(0.0277)	(0.0246)	(0.0338)	(0.0414)
<i>North Macedonia</i>	-1.002***	-0.129	0.223	-0.0521***	-0.00159	0.0108	0.0429**
	(0.256)	(0.342)	(0.328)	(0.0139)	(0.0102)	(0.0112)	(0.0203)
<i>Hungary</i>	-0.890***	0.0779	-1.055*	-0.0465***	0.00652	-0.0187	0.0587**
	(0.290)	(0.418)	(0.623)	(0.0159)	(0.0136)	(0.0166)	(0.0230)
<i>Kosovo</i>	-0.967***	-1.039**	0.131	-0.0495***	-0.0198**	0.00841	0.0609***
	(0.260)	(0.419)	(0.326)	(0.0137)	(0.00992)	(0.0102)	(0.0194)
<i>Latvia</i>	0.0486	0.637	-0.296	0.00119	0.0262	-0.00857	-0.0188
	(0.378)	(0.563)	(1.297)	(0.0270)	(0.0231)	(0.0322)	(0.0394)
<i>Lithuania</i>	-0.356	0.285	-0.726	-0.0222	0.0125	-0.0150	0.0247
	(0.336)	(0.551)	(1.188)	(0.0212)	(0.0198)	(0.0258)	(0.0319)
<i>Moldova</i>	-0.657*	-0.0885	-0.144	-0.0375*	-0.000492	-0.00199	0.0400
	(0.389)	(0.482)	(0.717)	(0.0207)	(0.0146)	(0.0205)	(0.0294)
<i>Montenegro</i>	-1.145***	-0.803**	-0.709*	-0.0545***	-0.0156	-0.0130	0.0831***
	(0.274)	(0.393)	(0.382)	(0.0142)	(0.0102)	(0.0117)	(0.0192)
<i>Poland</i>	-0.365	-0.376	-0.709	-0.0207	-0.00834	-0.0142	0.0432
	(0.291)	(0.481)	(0.878)	(0.0189)	(0.0135)	(0.0212)	(0.0266)
<i>Romania</i>	-0.876***	-0.113	-0.682	-0.0459***	-0.000170	-0.0133	0.0593**
	(0.324)	(0.399)	(0.570)	(0.0170)	(0.0122)	(0.0157)	(0.0237)
<i>Serbia</i>	-0.795***	-0.358	-0.235	-0.0428***	-0.00742	-0.00379	0.0540***
	(0.251)	(0.372)	(0.402)	(0.0146)	(0.0108)	(0.0120)	(0.0195)
<i>Slovak Republic</i>	-0.281	0.239	-1.127*	-0.0171	0.0107	-0.0202	0.0265
	(0.261)	(0.425)	(0.684)	(0.0175)	(0.0143)	(0.0173)	(0.0242)
<i>Slovenia</i>	-0.624**	0.209	-1.280**	-0.0353**	0.0109	-0.0213	0.0457**
	(0.274)	(0.398)	(0.566)	(0.0159)	(0.0134)	(0.0155)	(0.0227)

Note: Standard errors, clustered at the primary sampling unit level, in parentheses. *** p<0.01, ** p<0.05, * p<0.1. For each regressor, the marginal effects across all outcomes of the dependent variable sum up to 0.

