Online appendix for the paper

"The Long-Term Effects of Communism in Eastern Europe"

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Time-Series Evidence on Support for Market Economy, Democracy, Redistribution, and Gender Equality

Panel A of Figure A.1 shows time-series evidence on average support for redistribution, and Panel B on average support for democracy, both measured as defined in the main text, in the EU East, non-EU East, and West, based on LITS data 2006, 2010, and 2016. While the EU East and non-EU East country groups cover all countries, except for Kosovo, in all available years, LITS 2006 does not cover any West countries, LITS 2010 only France, Italy, Sweden, and the UK, and LITS 2016 only Greece and Italy. Thus, the sample of countries in the West changes over time. To indicate this, we do not connect the dots in the graph.

Panel A shows that support for the market economy in the East first drops and then increases. Notably, the drop in both the EU East and the non-EU East between 2006 and 2010 coincides with the onset of the financial crisis. Comparing East and West, we see rather stable differences in support for the market economy between the EU East and the available West countries over the time period 2010 and 2016, when West data are available. At the same time, average preferences line up almost perfectly between the non-EU East and the West in these two years.

Panel B shows a fairly large gap in support for democracy between East and West across both years in which data are available for both East and West. Support for democracy increases in both the EU East and the non-EU East between 2010 and 2016, but decreases in the West.

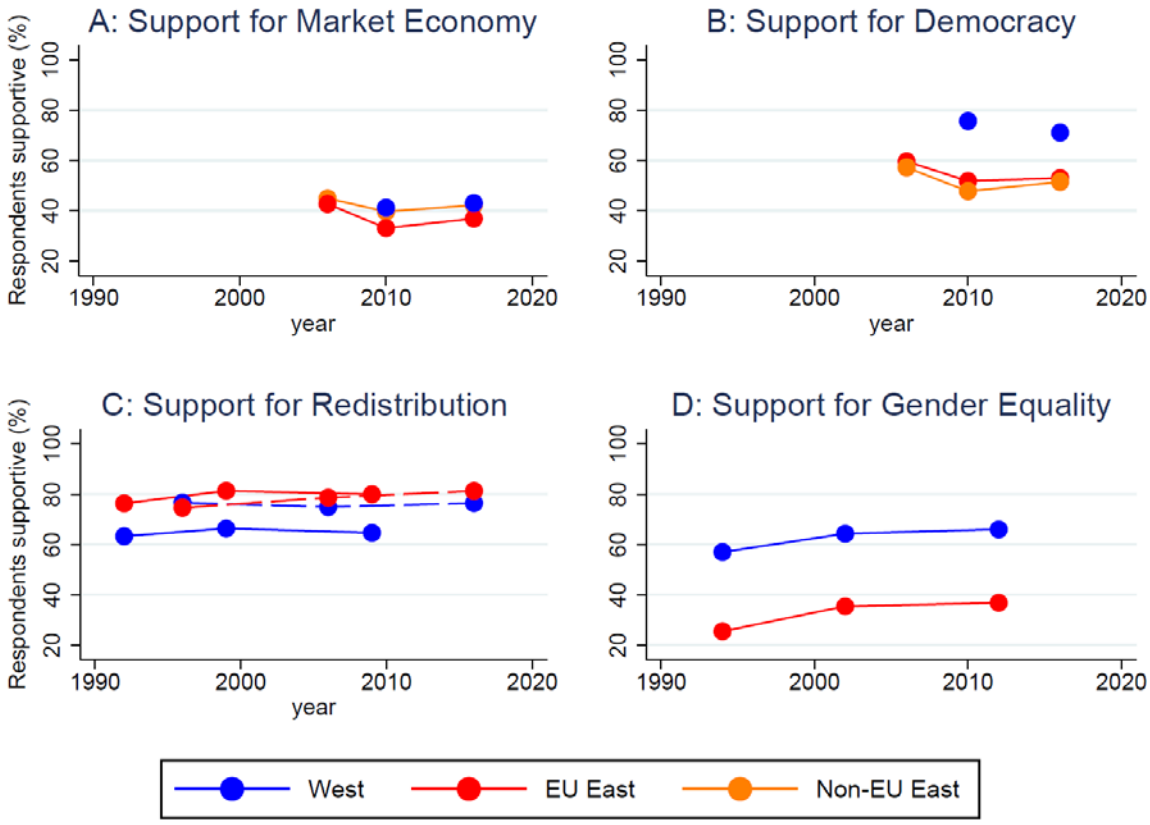
Panel C shows time series evidence on support for redistribution, again measured as described in the main text. The solid lines refer to evidence from the social inequality modules 1992, 1999, and 2009, and the dashed lines to the role of government modules 1996, 2006, and 2016. The figure covers fewer countries than in the main text, since here we use a consistent set of countries for all country groups over time. The social inequality modules consistently cover Bulgaria, the Czech Republic, Hungary, Poland, and Slovenia in the EU East, and Austria, Sweden, and the UK in the West. The role of government modules consistently cover the Czech Republic, Hungary, Latvia, and Slovenia in the EU East, and France, Spain, Sweden, and the UK in the West.

The data based on the social inequality modules (solid lines) show constant East-West differences in preferences for redistribution over time. Note that here we focus on sets of countries that appear in the data in all years. Therefore, there are differences between the averages shown here and those in Figure 7 in the main text, even for the last available year, to which Figure 7 refers. Overall, independent of the ISSP module used, there is relatively little movement in preferences for redistribution over time. In the data from the role of government module, the limited set of countries with consistently available data over time exhibit similar

East and West preferences for redistribution in 1996, with an East-West difference only arising in 2006.

Panel D shows time-series evidence on support for gender equality, again measured as in the main text, from the ISSP family and changing gender roles modules 1994, 2002, and 2012. Again, in contrast to the main text, we use a limited set of countries such that the country groups are consistent over time. The EU East is composed of Bulgaria, the Czech Republic, Hungary, Poland, and Slovenia. The West includes Austria, Ireland, the Netherlands, Spain, Sweden, and the UK. Panel D shows a stable West-East difference in support for gender equality over time.

Figure A.1: Time-Series Evidence on Support for Market Economy, Democracy, Redistribution, and Gender Equality



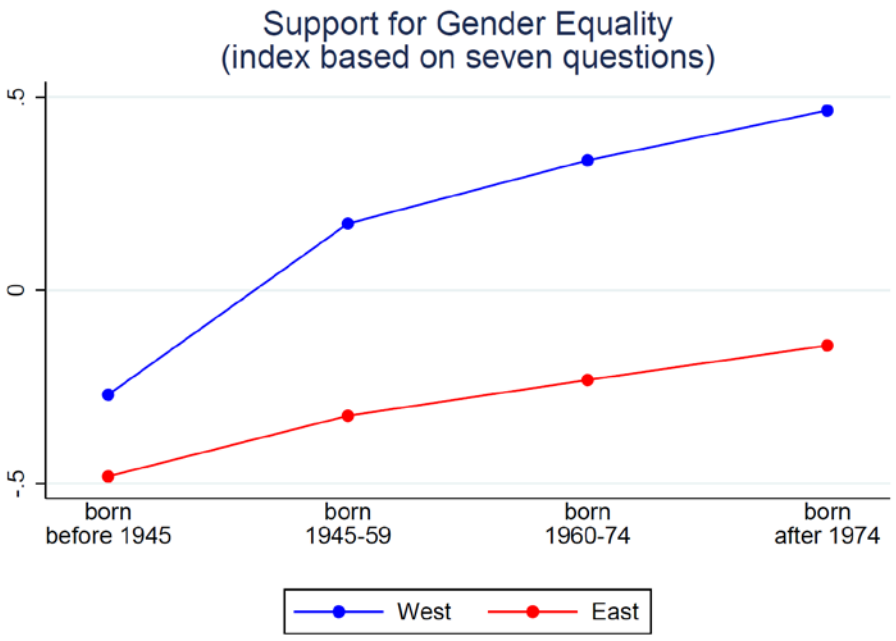
Note: Author's calculations, based on the following data sources: Panels A and B: Life in Transition Surveys 2006, 2010, and 2016; Panel C: International Social Survey Programme, Social Inequality Modules 1992, 1999, and 2009 (solid line) and Role of Government Modules 1996, 2006, and 2016 (dashed line); Panel D: International Social Survey Programme, Family and Changing Gender Roles Modules 1994, 2002, and 2012. The countries covered in each of the panels are mentioned in the text.

Cohort Evidence on Support for Gender Equality in the Labor Market: Index

The ISSP family and changing gender roles module asks about the level of agreement of respondents with seven statements relating to gender equality in the labor market, such as "A man's job is to earn money; a woman's job is to look after the home and family" (the question we use in the main text), "A working mother can establish just as warm and secure a relationship with her children as a mother who does not work" or "Both the man and woman should contribute to the household income."[1] Here, we combine the responses to all seven questions in one index. To each statement, the answer categories offer five different levels of agreement, which we code from 1 to 5. We code each answer such that it has higher values for responses that we associate with preferences for more gender balance in the labor market. To calculate the index, we calculate the mean over all seven values and standardize this variable.

Figure A.2 shows the cohort preferences based on this index in 2012, analogous to Panel D of Figure 7 in the main text. The two figures are very similar. They show a substantially higher support for gender equality in the West than in the East, but a steeper cohort gradient in the West than in the East, indicating a long-term effect of communism.

Figure A.2: Cohort Evidence on Support for Gender Equality (Index)



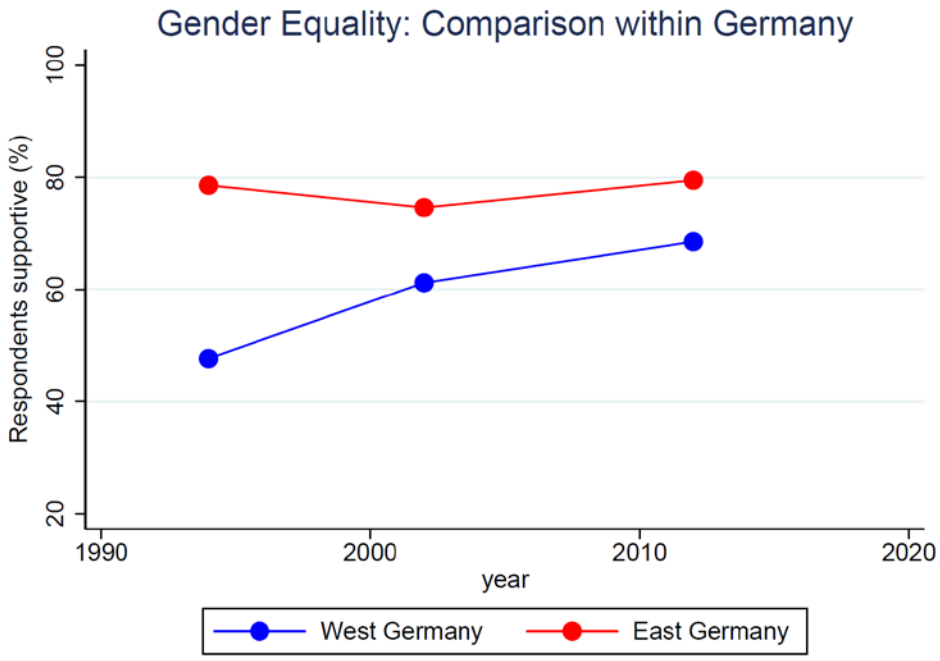
Note: Author's calculations, based on International Social Survey Programme, Family and Changing Gender Roles Module 2012. The index is built as described in the text.

[1] More specifically, in the 2012 ISSP round, we use the questions number R1 (a)-(e) and R2 (a) and (b).

Time-Series Evidence on Support for Gender Equality in the Labor Market in East and West Germany

Figure A.3 shows time-series evidence on support for gender equality in East vs. West Germany from the ISSP family and changing gender roles modules 1994, 2002, and 2012. Here, we recur to the same measure as in the main text and in Figure A.1. While support for gender equality is higher in the West than in the EU East within Europe, as Panel D of Figure A.1 shows, support for gender equality is lower in the West than in the East within Germany. Also, Figure A.3 shows convergence between East and West preferences over time.

Figure A.3: Time-Series Evidence on Support for Gender Equality in East and West Germany



Note: Author's calculations, based on the International Social Survey Programme, Family and Changing Gender Roles Modules 1994, 2002, and 2012.

Regression Results on Preferences

In the main text, we present some simple comparisons of preferences across different cohorts in East and West European countries. Here, we support the findings in a more rigorous form with a regression analysis.

Specifically, we regress attitudes on country-year fixed effects, the birth year of the respondent, and the birth year interacted with an East dummy that is one if the resident comes from an Eastern European country. Holding fixed country and cohort (birth year) effects, we focus on the difference-in-differences estimate, the interaction term between birth year and the East dummy. We then test the following hypotheses: 1) Is the difference in the cohort gradients between East and West positive in the areas that are in line with the capitalist doctrine, namely

support for markets and democracy? (I.e., is the difference between younger and older cohorts in support for markets and for democracy larger in the East than in the West?). 2) Is the difference in the cohort gradients between East and West negative in the areas that are in line with the communist doctrine, namely in the areas of redistribution and gender equality? (I.e., is the difference between younger and older cohorts in support for redistribution and for gender equality smaller in the East than in the West?). Both of the above would be evidence in line with the hypothesis that communism affected preferences. Since we are using data from (up to) 26 years after the end of communism, we argue that those effects are long-lasting.

This regression approach has the following two advantages. First, this specification allows for a more complete comparison of East and West countries, since inclusion of country-year fixed effects allows us to include all countries and all available years of data, and work with an unbalanced sample, while controlling for fixed country-specific year differences. By contrast, Figure 7 in the main text only refers to the last available year in each survey (and the last two years in case of LITS) and the countries participating in that year's survey. The second advantage of the specification is that it allows us to control for country fixed effects that may explain differences between East and West countries even in the absence of communism, while we can still identify a legacy of communism through the interaction term of birth year and residing in the East. Country fixed effects may include deeper differences in norms or culture. Inclusion of country-year fixed effects (that is, one fixed effect for each country-year pair) allows us to additionally rule out that unobserved country-year specific shocks that shift preferences and are common to individuals across all cohorts within a country-year, explain the findings. These include the current economic or political situation of a country (for example, the state of the labor market or which party is in power). Of course, adding country fixed effects (or country-year fixed effects) prevents us from estimating a separate effect of living in a former communist country. To be able to make statements regarding the legacy of communism, we therefore exploit solely the variation across cohorts, and our key variable of interest is the interaction between birth year and the East dummy.[2]

The identifying assumption of our approach is that the cohort-specific experience with communism is the only cohort-specific aspect that matters for preferences and there are no other unobserved shocks at the cohort-country level that affect preferences. A primary concern is that there might be cohort-specific unemployment shocks. Older cohorts might be more affected by the transition from a planned to a market economy than younger cohorts. This could affect their preferences towards economic issues, though this is less of a concern when analyzing preferences for democracy. Therefore, we include an unemployment dummy as a control in all regressions. Results are robust to omitting this dummy variable.[3] We also include an indicator variable that is one if the respondent is male.

[2] This approach is similar to the one used in Fuchs-Schündeln and Schündeln (2015) using comparable cross-country data. In that paper, we construct a variable that captures the accumulated experience with democracy (which we call "democratic capital stock"). Others have used similar strategies within a country to establish the effect of particular experiences on preferences (for example, Malmendier and Nagel, 2011, for the effect of recessions on investment behavior in the United States).

[3] The Transition Report of the European Bank for Reconstruction and Development (2016) provides evidence for cohort-specific shocks for the cohorts being born in the first years of the transition process, pointing to early deprivation (see also footnote 6 on the fall in GDP in the first transition years). However, few individuals in our sample fall into these cohorts.

Since we have no non-EU East countries in the ISSP data, we do not distinguish between EU East and non-EU East and just include a common East dummy. To reduce the number of digits that we need to show in the table, we divide year of birth by 10. Thus, the point estimates related to birth year and the interaction between East and year of birth show the effect of a change in the birth year by one decade. Standard errors are clustered at the country level.

Table A.1: Regression Results

	LITS data		ISSP data		
	(1) Support for Market Economy (%)	(2) Support for Democracy (%)	(3) Support for Redistribution (social ineq. module)	(4) Support for Redistribution (role of gov. module)	(5) Support for Gender Equality (index)
East×BirthYear^{-10}	0.027***	0.028***	-0.054***	-0.005	-0.073***
	(0.005)	(0.006)	(0.010)	(0.013)	(0.016)
BirthYear^{-10}	0.006	0.001	-0.023***	-0.059***	0.172***
	(0.004)	(0.005)	(0.007)	(0.010)	(0.009)
Male	0.039***	0.025***	-0.136***	-0.137***	-0.173***
	(0.006)	(0.004)	(0.023)	(0.024)	(0.019)
Unemployed	-0.061***	-0.050***	0.171***	0.233***	-0.114***
	(0.012)	(0.011)	(0.030)	(0.026)	(0.023)
Country×Year FEs	✓	✓	✓	✓	✓
R^2	0.05	0.06	0.09	0.09	0.21
N	60743	62771	48517	50372	56785
Mean dep. var.	0.40	0.56	-0.00	-0.00	-0.00

Note: * p < 0.10, ** p < 0.05, *** p < 0.01. The standard errors in parentheses are based on cluster-robust standard errors, allowing for clustering of the model error at the country level. The dependent variables in columns 1 and 2 are dummy variables that are based on the respective LITS questions described in the main text. The dependent variables in columns 3 to 5 are indices, standardized to have mean 0 and standard deviation 1, built as described in the online appendix text.

Results are shown in Table A.1. In column 1 we use support for the market economy, and in column 2 support for democracy as dependent variables, both defined as in the main text. In columns 3 and 4, we employ the two different ISSP modules measuring support for redistribution. In contrast to the main text, we build an index here that further exploits the variation in the answer categories.[4] We code the data on preferences for redistribution such that higher values indicate higher preferences for redistribution and, for comparability of magnitudes between modules, standardize the two variables. Column 5 has the index of support for gender equality described above as dependent variable.

Indeed, we find that birth cohort effects strongly differ between former communist and Western countries: for all outcome variables, the sign of the coefficient on the interaction term is in line with the hypothesis that communism affects preferences, and the coefficients are highly statistically significant in 4 out of 5 reported regressions. Only in Column 4, measuring

[4] We analyze the same two statements as in the main text: From the social inequality module, we use the question "To what extent do you agree or disagree with the statement: It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes" with answer categories "strongly agree", "agree", "neither agree nor disagree", "disagree", and "strongly disagree". From the role of government module, we use the question "On the whole, do you think it should or should not be the government's responsibility to reduce income differences between the rich and the poor" with answer categories "definitely should be", "probably should be", "probably should not be", and "definitely should not be".

preferences for redistribution based on the role of government module, is the coefficient small in absolute terms and not significant.

The results shown in Table A.1 combine data from various stages in the transition. Only LITS data (results relating to support for a market economy and for democracy) are exclusively from more recent years. To investigate whether effects of communism on preferences still exist today in the areas of preferences for redistribution and preferences for gender equality in the labor market, Table A.2 repeats the regression analyses of the last three columns of Table A.1 in those areas, splitting the sample in the year 2000. For preferences for redistribution, measured based on either the social inequality module or the role of government module, the East-West difference in cohort gradients is in absolute terms larger in the 1990s than after 2000. This indicates convergence of preferences over time. For the role of government module, East-West cohort gradients are in fact statistically significantly different at the 10 percent significance level prior to 2000, but not after 2000. For support for gender equality, the interaction term is also larger before 2000 than after 2000 in absolute terms, indicating some convergence of preferences.

Table A.2: Regression Results Splitting the Sample in 2000

	(1) Support for Redistribution (social ineq. module) before 2000	(2) Support for Redistribution (social ineq. module) after 2000	(3) Support for Redistribution (role of gov. module) before 2000	(4) Support for Redistribution (role of gov. module) after 2000	(5) Support for Gender Equality (index) before 2000	(6) Support for Gender Equality (index) after 2000
East×BirthYear^{-10}	-0.068***	-0.039***	-0.029*	0.005	-0.087***	-0.067***
	(0.013)	(0.013)	(0.016)	(0.014)	(0.020)	(0.018)
BirthYear^{-10}	-0.025**	-0.022**	-0.061***	-0.058***	0.201***	0.162***
	(0.010)	(0.009)	(0.012)	(0.010)	(0.018)	(0.011)
Male	-0.162***	-0.107***	-0.180***	-0.120***	-0.147***	-0.182***
	(0.026)	(0.024)	(0.035)	(0.027)	(0.027)	(0.021)
Unemployed	0.212***	0.138***	0.246***	0.230***	-0.055	-0.145***
	(0.025)	(0.040)	(0.038)	(0.030)	(0.042)	(0.027)
Country×Year FEs	✓	✓	✓	✓	✓	✓
R^2	0.08	0.10	0.06	0.10	0.20	0.19
N	25511	23006	14617	35755	14078	42707
Mean dep. var.	-0.04	0.04	-0.04	0.02	-0.25	0.08

Note: * p < 0.10, ** p < 0.05, *** p < 0.01. The standard errors in parentheses are based on cluster-robust standard errors, allowing for clustering of the model error at the country level. The dependent variables are indices, standardized to have mean 0 and standard deviation 1, built as described in the online appendix text.