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USSR, Education, Work History, Fertility Choices, and Later-Life Outcomes*

Telmo Pérez-Izquierdo[†] Elizaveta Pronkina[†]

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Abstract

This paper investigates how living under the USSR affected the life decisions of East European individuals. We use the retrospective SHARELIFE data to analyze respondents' choices from 1950 to 1990. In particular, we compare the reported choices of individuals in Lithuania (former-USSR) and Poland (former-Soviet Bloc), exploiting the common history of both countries until the end of the Second World War. We find that Lithuanian women increased educational attainments and accumulated 2 plus years of working experience by age 50 relative to Polish women. Moreover, we describe the indirect effect that improved working opportunities have on female education. We can identify this effect by looking at differential outcomes for men and women in the two countries. Similar findings hold once we compare all Baltic countries (former-USSR) to all Soviet Bloc countries and East to West Germany. Finally, we also observe a higher number of marriages during life and selective abortion based on the future child's gender under the USSR. These findings suggest that policies implemented in Socialist countries varied, and regimes affected individuals differently.

JEL codes: I2, N34, J13, J16, J21, J24, P36.

Keywords: USSR, Socialism, Central and Eastern Europe, Education, Female Employment.

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1 Introduction

The Communist specter that has haunted Europe for more than a century appeared in several forms. One of the most salient and long-lasting examples of Communist regimes was the USSR. Soviets ruled Russia, and other European and Middle-Asian countries from 1950 to 1990, having a significant impact on the lives of millions. In recent years, economists have tried to evaluate the impact of Socialist and Communist regimes on individuals' decisions (among others, [Alesina and Fuchs-Schündeln, 2007](#)). Nevertheless, their analyses do not aim at capturing how various forms of Socialisms affected life decisions differently: they compare individuals from East European countries belonging to the Soviet Bloc (East Germany) with individuals from West European countries (West Germany).

In this work, we take a closer look at different Communist regimes by studying how being part of the USSR affected individuals' decisions. In particular, we focus on individual early life events from 1950 to 1990 to measure USSR's impact on women's schooling decisions, labor participation, fertility choices, and later-life satisfaction.

Individual decisions are endogenous to social institutions and regimes governing countries. That is why it becomes tricky to quantify the impact of a regime on individual choices. To overcome this challenge, we restrict our analysis to Lithuania and the part of Poland that belonged to the Russian Empire from 1795 to 1918. These two territories show similar history and patterns before the start of the Second World War. Yet, since the Molotov–Ribbentrop Pact (1939) and its followed up agreement, Lithuania became one of the USSR republics and got exposed to the same central government and Ideology as the rest of the USSR. Differently, after World War II, the Polish national government continued to exist under the influence of the Soviets and formed the Polish People's Republic (1947–1989). We exploit this divergence as a quasi-natural experiment that can inform our understanding of the impact of different Socialist regimes.

This study is based on the Survey of Health, Ageing and Retirement in Europe (SHARE) (2017), retrospective SHARELIFE data (2017) and derived from it the SHARE Job Episode Panel.¹ For the first time, this survey covers the life history of respondents in all European countries. The SHARELIFE data allow us to track the education, work, marriage, fertility,

¹This paper uses data from SHARE Waves 1, 2, 3, 4, 5, 6 and 7 (DOIs: 10.6103/SHARE.w1.710, 10.6103/SHARE.w2.710, 10.6103/SHARE.w3.710, 10.6103/SHARE.w4.710, 10.6103/SHARE.w5.710, 10.6103/SHARE.w6.710, 10.6103/SHARE.w7.710), see Börsch-Supan et al. (2013) for methodological details.(1) The SHARE data collection has been funded by the European Commission through FP5 (QLK6-CT-2001-00360), FP6 (SHARE-I3: RII-CT-2006-062193, COMPARE: CIT5-CT-2005-028857, SHARELIFE: CIT4-CT-2006-028812), FP7 (SHARE-PREP: GA N°211909, SHARE-LEAP: GA N°227822, SHARE M4: GA N°261982) and Horizon 2020 (SHARE-DEV3: GA N°676536, SERISS: GA N°654221) and by DG Employment, Social Affairs & Inclusion. Additional funding from the German Ministry of Education and Research, the Max Planck Society for the Advancement of Science, the U.S. National Institute on Aging (U01_AG09740-13S2, P01_AG005842, P01_AG08291, P30_AG12815, R21_AG025169, Y1-AG-4553-01, IAG_BSR06-11, OGH04-064, HHSN271201300071C) and from various national funding sources is gratefully acknowledged(see www.share-project.org).

and residential history over life. Additionally, the SHARE main survey provides contemporaneous information about respondents. So, we can link early-life events with later-life variables. The other definite advantage of the SHARE is that it is a harmonized data that allow a cross-country analysis and use for a Lithuania-Poland comparison. We focus on respondents born from 1935 to 1950 and consider their choices from 1950 to 1990.

To estimate the causal impact of being part of the USSR, we assume that Lithuania became the part of the USSR and not of the Soviet Bloc due to exogenous factors that are unrelated to the outcome variables relevant to this study. The main threats to our identification can be the potential differences between Lithuania and Poland in a pre-communist era. Accordingly, we address it in several ways. First, the target sample covers Lithuania and the part of Poland that belonged to the Russian Empire from 1795 to 1918. Using the SHARELIFE data, we can identify the region of residence at any moment of life. In the preferred specification, we do not consider Poland as a whole due to the shown long-lasting impact of the division of Poland between three Empires in the 19th century on the contemporary political and educational outcomes (see [Grosfeld and Zhuravskaya \(2015\)](#) and [Bukowski \(2019\)](#)).

Next, we document the historical statistics before the Soviet regime to argue the plausibility of our identification. First, according to the Russian Imperial Census in 1897 (see [Markevich and Zhuravskaya \(2018\)](#), [Grosfeld et al. \(2013\)](#)), the former-territories of the Russian Empire that currently belong to Lithuania and Poland were considerably similar along with the religious composition, the share of women in the society or the type of job occupation among men and women. Second, we study the Imperial Russian Factory Database by [Gregg \(2020\)](#) that systematize the Imperial Russian censuses of manufacturers of 1894, 1900, and 1908. The density of factories in the Polish part was higher but primarily due to one province that specialized in textile production. Overall, there is no evidence of the difference in industrial development, as machine power per worker, on average, was similar in Lithuania and Poland.

Our findings show that being part of the USSR increased the educational attainment for all residents, being the total impact on women three times larger than for men. Moreover, cumulative working experience by age 50 increased almost by 2 years among women under the strongly enforced regime, independently of schooling, and did not change at all among men. We refer to working status only before the fall of the regime in 1990, not to include the transition period. The impact of the USSR gets larger when we consider low-educated women. Accordingly, it is essential to account for heterogeneity when estimating the impact on the experience. In terms of the extensive margin of the USSR's impact on labor participation, we find that early birth cohorts (1935-1940 and 1941-1946) are more affected.

To explain the stronger impact of the USSR on women's education and work experience relative to men, we propose a simple educational choice model. According to the model,

the policies implemented in the USSR to favor women’s employment could have caused an additional positive effect regarding education. Since women living under the USSR had to work and could not become housewives, their incentives to go to school were higher compared to other Soviet Bloc countries where the implementation of such policies could have been weaker.

We already showed that the USSR gave women higher incentives to study; however, the direct impact on marriage and fertility history is also of interest as it often happens simultaneously with labor choices. For consistency of representation, we do not analyze any particular policy, but rather focus on the USSR’s overall impact. The number of marriages during life increased by 0.10. Accordingly, we cannot establish the causal effect between work and marriage history, but we see a correlation between labor participation and a higher probability of remarrying.

In terms of fertility outcomes, we document evidence for selective abortion. Living under the USSR resulted in a statistically significant decrease by 0.18 in the number of children, and this fall is driven only by daughters. In our study, we restrict to children who were born before 1990 to abstract from the transition period after the end of the regime. We find similar evidence on selective abortion using East and West Germany comparison for cohorts from 1935 to 1950. This targeted sample is older than other studies on the total fertility in East and West Germany; that is why it is difficult to compare it with existing evidence. However, [Goldstein and Kreyenfeld \(2011\)](#) point out that total fertility from 1980 to 1990 in East Germany was noticeably higher than in West Germany. Right after the fall of the Berlin Wall, fertility dropped in East Germany and started to grow back only after 1995. The primary reason for such a drop is delayed childbearing during the first year after the reunification.

Our paper relates to several strands of literature. First of all, we contribute to the literature about the direct impact of the Socialist regimes on its residents. Up to our knowledge, this paper is the first to measure the impact of living under the USSR. So far, most studies about the causal impact of Socialism, influenced by [Alesina and Fuchs-Schündeln \(2007\)](#), focus on East-West Germany separation and reunification. The studies on gender roles include [Klüsener and Goldstein \(2014\)](#) (non-marital birth), [Beblo and Görge \(2018\)](#) (preferences for work), [Lippmann and Senik \(2018\)](#) (gender gap in mathematics), [Campa and Serafinelli \(2019\)](#) (career success), and [Lippmann et al. \(2020\)](#) (the male bread-winner norm and marriage stability).² We add to this literature by looking, up to our knowledge, for the first time at a new environment and a different regime in Europe. It can be of particular interest in light of the recent paper by [Becker et al. \(2020\)](#) that stress the potential bias in East and West Germany comparison due to pre-separation differences along the newly assigned country

²By any means this list is not exhaustive. For detailed literature on East-West Germany see [Becker et al. \(2020\)](#).

borders after World War II. Furthermore, apart from bringing a new setting, our estimates are based on comparing two countries with very similar institutions, but different Socialist regimes. Consequently, the results are not driven by the divergence of Capitalist and Socialist regimes, and they are not affected by how much the one-bread winner family structure discouraged women from working. It is not the case if we consider East-West Germany, as, during separation, there were two very distinct leading regimes: Socialism (East Germany) versus Capitalism (West Germany). In addition to our main study, we repeat our specification in the East and West Germany context, and we document the even higher impact of Socialism on women's experience. In particular, East German women worked 5 years more by age 50 than West Germans, which is twice larger than in Lithuania-Poland comparison. It confirms the divergence of the regimes during the separation. The third contribution to this literature is an analysis of individual choices under the USSR regime. Instead of focusing on the persistence of the impact of the regime, we isolate any confounders during the transition from planned to market economy, and we study the factors that shaped the choices across birth cohorts from 1935 to 1950.

The second strand of articles we contribute to is gender literature about educational and work choices. We clarify the underlying women-specific channel that increased women's participation through higher educational incentives, as can be referred to as a cascade, or indirect, impact of the schooling availability and work opportunities on women's labor participation (i.e., [Wyrwich \(2019\)](#), [Duflo \(2012\)](#)).

Finally, we contribute to the literature on life satisfaction by documenting the gap within two transition economies. Individuals who lived under the USSR report statistically significant lower life satisfaction and life quality in 2017 than individuals from the Soviet Bloc, and this drop gets larger for men. Our findings are derived from older cohorts, who were above 50 years old in 2017. The strand of literature about "happiness in the transition" agrees upon the lower life satisfaction in the countries that undergo the economic and political changes from planned to market economy after 1990 (see [Guriev and Zhuravskaya \(2009\)](#)). Authors focus primarily on West and East comparison. In a recent paper, [Guriev and Melnikov \(2018\)](#) show that this gap is almost closed, but mainly due to younger generations. In contrast to any other outcome variable in our study, we cannot eliminate the hypothesis that our results are driven by the economic divergence between Lithuania and Poland right after 1990. In the future, we are going to revisit this finding.

Up to our knowledge, this is the first paper to acknowledge differences in the impact of Socialist regimes over individual choices. In the current literature, the notable differences between the USSR and Soviet bloc regimes are ignored. In particular, all Eastern European countries are pooled together for what regards the Communism inheritance. The broad comparison between a Communism and a non-Communism past can be an excellent first approximation to the study of Soviet Ideology's overall effect (see [Fuchs-Schündeln and](#)

[Schündeln \(2020\)](#)). However, this comparison can be extended further to distinguish the differences in the regimes. We argue that contemporaneous policies should be tailored to the historical context and not ignore the different Socialist regimes implemented in these countries.

The paper proceeds as follows. Section 2 provides historical background about Lithuania and Poland; and describes the differences in the Socialist regimes in these two countries in the 20th century. We describe the dataset and the descriptive findings in Section 3, and we discuss the identification strategy in Section 4. Section 5 provides the main empirical findings, the model about the education choice, and the heterogeneity analysis of the treatment effect. Robustness checks are in Sections 6. The further analysis of East and West Germany is in Section 7. Section 8 concludes. Additional tables and figures are in the Appendix.

2 History of Poland and Lithuania and the USSR

In this Section, first, we briefly describe the history of Poland and Lithuania in Sections [2.A-2.B](#). Next, we explain the characteristics of Soviet Ideology (in Section [2.C](#)) and the difference in its implementation in the USSR (Lithuania) and the Soviet Bloc (Poland) (in Section [2.D](#)). A reader who is aware of the past of both countries and the Soviet influence in the region can freely skip the Sections [2.A-2.D](#) and continue with the summary of this Section in Section [2.E](#).

2.A The Brief History of Poland and Lithuania

From 1569 to 1918. Nowadays, two modern countries, Poland and Lithuania, have a land border. However, starting from 1569, the Crown of the Kingdom of Poland and the Grand Duchy of Lithuania formed one state, the Polish–Lithuanian Commonwealth, that existed over 200 years. A single elected monarch governed in both territories over 200 years. The state was gradually falling and reducing the size during the First and Second Partition of Poland (1772 and 1793) and entirely lost its independence after the Third Partition in 1795. The Congress of Vienna (1815) brought the last changes in the country borders. The Russian Empire got Lithuania and a large part of the central areas of current Poland. [Fig. 1](#) shows the modern country borders between Poland and Lithuania, and the highlighted area in the territories of the Russian Empire until 1918.

From the first years, the Tsars of the Russian Empire took an active role in getting power in the newly annexed territories and suppressed any subsequent rebellion. The repressions against the participants of uprisings took place during the 19th century. The extensive Russification policies were universal; i.e, Lithuanian and Polish languages were severely discriminated against from public use. Shortly after the Russian Empire acquired new areas, the new governorates got established: Congress Poland (from 1867 Vistula Land) and Vilna

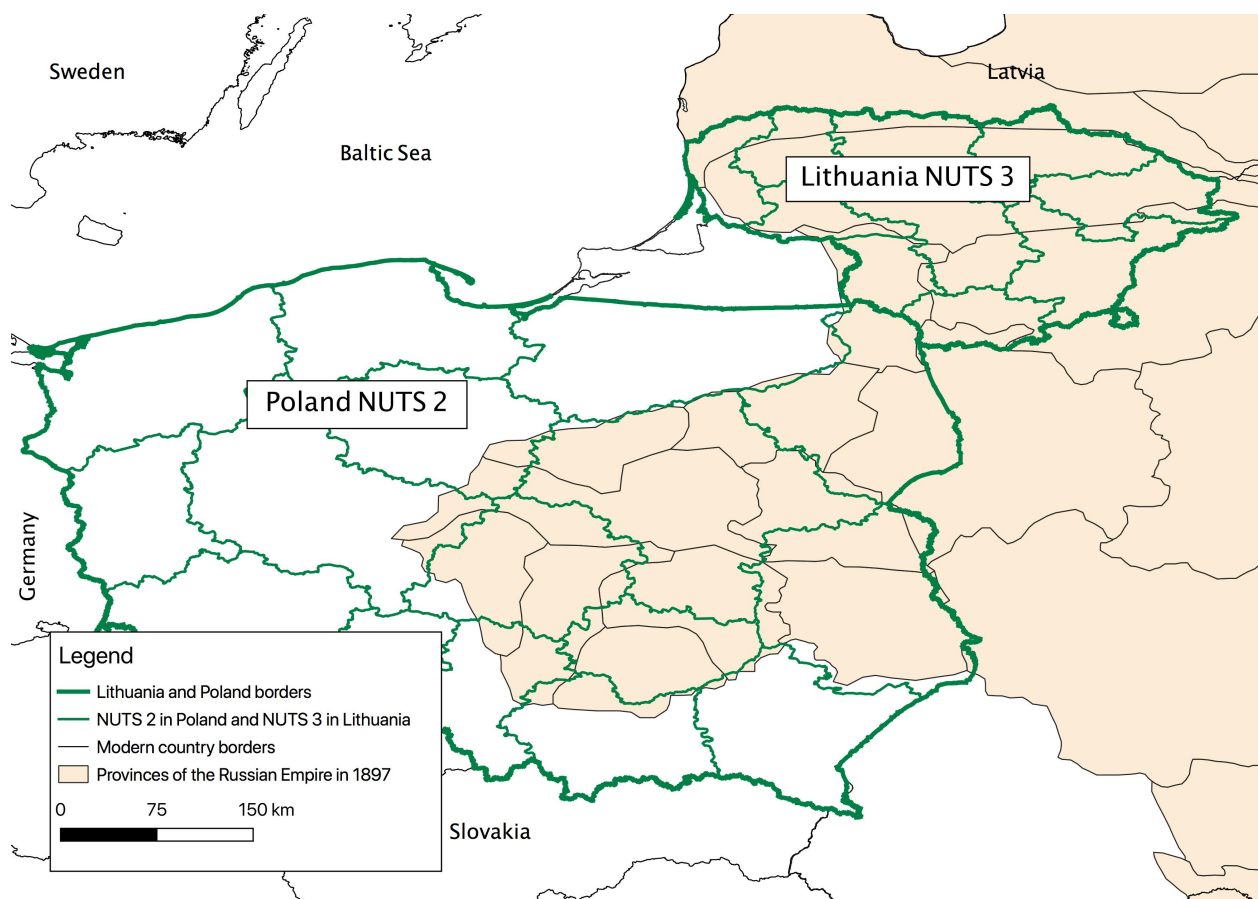


Fig. 1. Modern Poland and Lithuania Borders and the Provinces of the Russian Empire
Source: GIS map of country borders in 2016 comes from Eurostat, GISCO. GIS map of the Russian Empire by province comes from [Sablina et al. \(2015\)](#).

Governor. An excellent overview of the Russian Empire's impact on education, economic, and political variables can be found in [Grosfeld and Zhuravskaya \(2015\)](#). The Russian Empire compressed its power in Lithuania and Poland after World War I. And, after two years of German dominance, the interwar borders between the two countries were set according to the Treaty of Versailles in June 1919.

After 1939/1947. The Forced Soviet Regime. World War II brought further changes in country borders. In August 1939, Nazi Germany and the USSR signed a non-aggression agreement called the Molotov–Ribbentrop Pact, which defined the two spheres of influence between countries. According to its modified version in October 1939, Lithuania became territory of the USSR. During the war, the land was interchangeably annexed by Nazi and Soviet troops.

At the end of the war, Lithuania forcefully joined the USSR and became one of the republics. Accordingly, the centralized government could rapidly expose citizens to similar policies as in the rest of the country until the dissolution of the Soviet Union in 1991. On the other hand, Poland also suffered constant combats on its territory during World War II, but it was able to regain independence afterwards. Still, from 1947, the Polish national government formed the Polish People's Republic and got heavily influenced by the USSR

under the Soviet Bloc agreement until 1989 ([European Commission, 2014](#)). We argue that this episode creates the quasi-natural experiment because it was unexpected that the USSR’s power would differ across two previously independent countries.

After 1991. After the two countries regained independence, they entered the transition period from planned to market economy. Later, on May 1, 2004, Poland and Lithuania joined the European Union.

Identifying assumption. Lithuania became a part of the USSR and not the Soviet Bloc due to exogenous factors that are unrelated to the outcome variables relevant for this study. Our identification relies on the similarity between the Former territories of the Russian Empire in Lithuania and Poland. Next, we show formal statistics before the enforcement of the regime to support our argument.

2.B Evidence on Similarity between Lithuania and Poland

During the Russian Empire. The territory of the Russian Empire was divided into governorates, those in provinces, and, finally, each province included several districts. After the Congress of Vienna, there were only minor changes in the province and district borders. In 1897, Vistula Land, the successor of the Congress of Poland, included Varshavskaia, Kalishskaia, Keletskaia, Liublinskaia, Lomzhinskaia, Petrokovskaia, Plotskaia, Radomskaia, Sedletskaia, and Suvalskaia provinces. The Vistula Land covers the modern territories of Poland and Lithuania. [Fig. 2](#) shows its territorial division. The Vistula Land had a direct border on the East with Vilna Govenatore-General that included Grodnenskaia, Kovenskaia, and Vilenskaia provinces. The Vilna Govenatore-General lies mainly in Lithuania, the North-West part of Belarus and Poland.

The territories of almost all provinces of Vistula Land and Vilna Govenatore-General lie within the modern country borders of Lithuania and Poland. However, a significant part of Grodnenskaia province is allocated in Belarus, and Suvalskaia province is divided into two parts between Lithuania and Poland. Accordingly, to compare the characteristics of residents from these two provinces, whenever data allow, we look at the district level. [Fig. A.1](#), in [Appendix A](#), numbers, the relevant districts in Grodnenskaia and Suvalskaia provinces used in the descriptive analysis.

First, we exploit the Russian Imperial Census in 1897. [Table 1](#) shows demographic and labor characteristics. The former-territories of the Russian Empire that currently belong to Poland were, on average, higher populated than Lithuanian territories. Importantly for our analysis, the share of women’s in a country was about 50 in both places; the illiteracy rate was slightly lower among Lithuanian women (68 percent) than among Polish ones (76 percent). The religious composition that influences women’s role along other variables was strikingly similar: 72 and 76 percent believers in the Roman Catholic church. In particular, it is important in light of a recent paper by [Becker et al. \(2020\)](#), that stress the potential

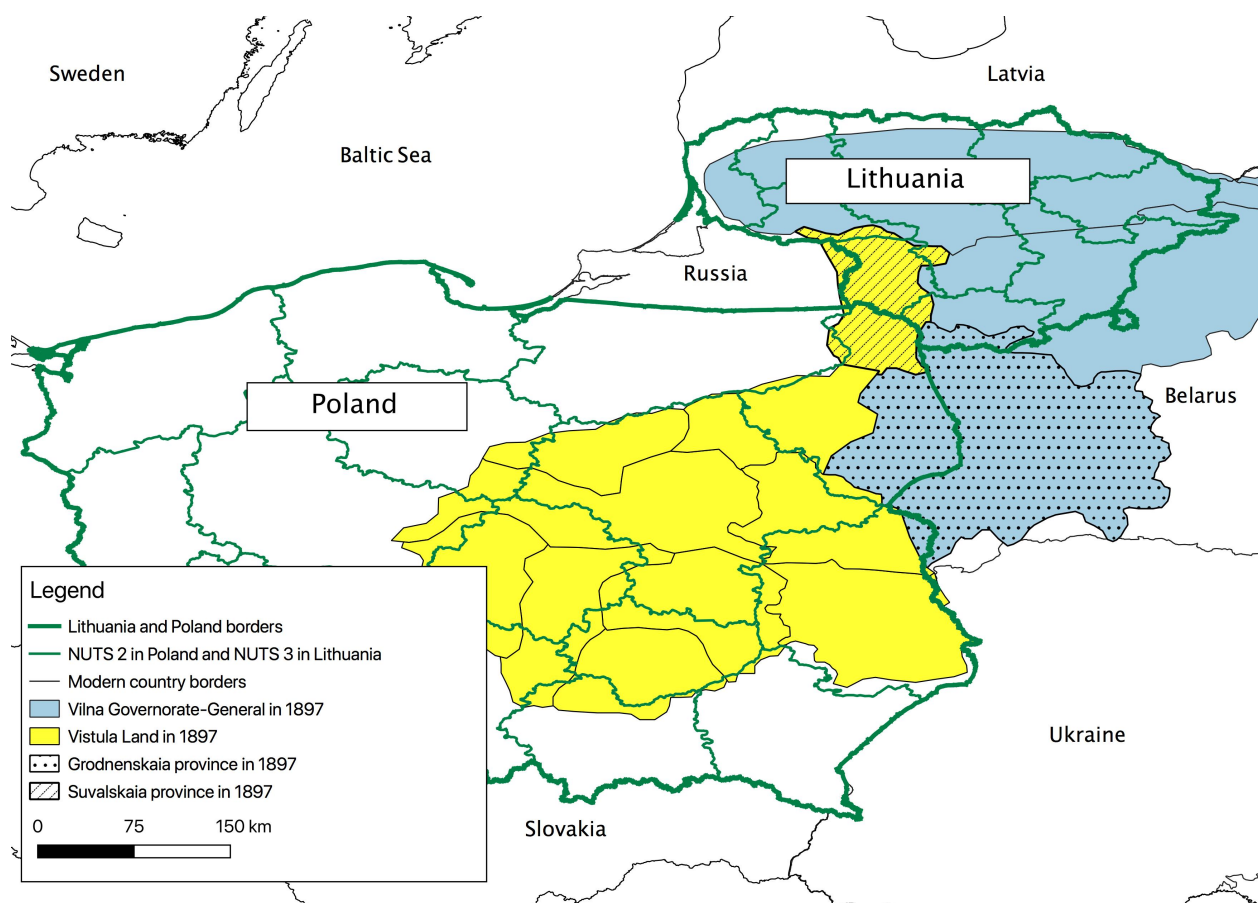


Fig. 2. Modern Poland and Lithuania Borders and Selected Provinces of the Russian Empire
Source: GIS map of country borders in 2016 comes from Eurostat, GISCO. GIS map of the Russian Empire by province comes from [Sablin et al. \(2015\)](#).

bias in East and West Germany comparison due to the unequal share of Roman Catholics and Lutherans along the newly assigned country border after World War II.

Furthermore, the share of employed residents is roughly 46 percent in both countries. This rate increases to 72 percent for men in Lithuania and Poland, but the data for women slightly differ and are equal to 23 percent and 19 percent in Lithuania and Poland, respectively. This prior difference in the women’s labor attachment can lead to upper-biased estimates. However, the magnitude of the difference is less than 25 percent of the actual employment rate. We believe that such a minor deviation is unlikely to disturb our identification strategy.

In Appendix A, [Table A.1](#) shows the industry of work among the employed people. The prevalent job occupations for women and men look very similar among Lithuania and Poland. Agriculture is the dominant industry with the highest share of employed people in both countries, particularly about 40 percent of employed women and 55 percent of employed men working there. The second most popular occupation is services with about 25 percent of women and 16 percent of women in each country. The rest of the industries take a smaller share.

Table 1: Demographic and Labor Information in 1897

Province / District (Id)	Population	Square km ²	Density	Percent of ¹								Employed population Age 11–60		
				Women	Age 11-60	Urban	Illiterate	Women Illiterate	Catholics	Jews	Orthodox	All	Women	Men
Panel I: Lithuania in 2016														
Vilna Governorate-General:														
Kovenskaia	1,544,564.0	40,191.2	38.4	51.3	65.6	9.3	58.1	58.9	76.4	13.8	3.0	49.6	26.5	74.8
Vilenskaia	1,591,207.0	41,909.5	38.0	50.3	65.2	12.4	71.2	77.0	58.8	12.9	26.1	39.8	16.0	64.4
Vistula Land:														
<i>Suvalskaia:</i>	83,994.0	1,760.5	47.8	50.6					81.0	9.0	3.2	51.6	26.9	77.3
Kalvarskiy (2)	70,425.0	1,329.1	53.0	50.4					82.4	9.3	3.7	51.8	26.6	77.2
Mariampolskiy (3)	114,262.0	2,178.1	52.5	50.0					79.6	10.3	4.5	51.9	26.0	77.7
Vladislavovskiy (6)	67,295.0	1,774.1	37.9	51.5					80.8	7.4	1.3	51.2	28.0	76.8
Volkovyskshkiy (7)	76,883.0	1,269.7	60.6	51.6					72.3	8.6	2.8	54.1	28.5	82.1
Lithuania*	1,073,255.0	27,953.7	41.4	50.7	65.4	10.9	64.6	68.0	72.1	11.9	10.8	47.0	23.1	72.1
Panel II: Poland in 2016														
Vistula Land:														
Varshavskaia	1,931,867.0	11,336.6	170.4	49.4	66.3	43.8	60.9	64.6	71.5	18.2	5.4	56.2	28.2	83.0
Kalishskaia	840,597.0	11,336.6	74.1	50.7	62.6	13.8	72.1	73.6	82.9	8.5	1.1	48.1	21.8	75.7
Keletskaia	761,995.0	10,093.0	75.5	51.0	62.9	9.2	77.3	80.4	87.5	10.9	1.2	43.2	18.1	69.9
Liublinskaia	1,160,662.0	16,831.3	69.0	49.2	65.2	13.9	76.2	81.8	62.6	13.5	21.4	44.0	16.8	70.2
Lomzhinskaia	579,592.0	10,545.2	55.0	48.2	65.0	12.9	70.4	76.3	77.1	15.8	5.5	47.1	16.4	75.0
Petrokovskaia	1,403,901.0	12,249.4	114.6	50.3	64.4	36.4	69.1	72.9	72.9	15.9	1.6	51.5	23.7	79.8
Plotskaia	553,633.0	9,430.8	58.7	50.2	63.3	15.9	66.5	67.8	80.7	9.3	3.1	50.6	23.1	78.5
Radomskaia	814,947.0	12,352.5	66.0	50.1	63.2	12.3	77.7	80.3	83.6	13.8	1.5	44.0	16.6	71.7
Sedletskaia	772,146.0	14,317.7	53.9	49.7	64.9	15.2	69.1	73.8	66.9	15.7	15.6	41.8	13.7	69.7
<i>Suvalskaia:</i>	84,682.7	1,922.5	46.1	50.5					73.7	11.6	9.2	43.7	19.6	68.5
Avgustovskiy (1)	79,214.0	2,024.6	39.1	48.9					67.0	11.6	19.0	42.0	16.8	65.9
Seinskiy (4)	92,910.0	1,472.7	63.1	49.6					72.6	10.4	1.4	40.6	19.8	65.8
Suvalskiy (5)	81,924.0	2,270.3	36.1	52.8					81.4	12.8	7.3	48.3	22.1	73.9
Vilna Governorate-General:														
<i>Grodzenskaia:</i>	160,533.7	3,024.4	53.2	49.2					51.0	18.6	28.8	41.7	14.8	67.8
Belostokskiy (8)	206,615.0	2,904.1	71.1	47.2					47.2	28.8	20.1	52.3	22.8	77.7
Belskiy (9)	164,441.0	3,562.2	46.2	50.5					36.5	14.9	48.3	36.9	11.4	63.8
Sokolskiy (15)	110,545.0	2,606.8	42.4	49.9					69.3	12.2	18.1	35.9	10.0	61.9
Poland*	774,683.9	11,008.8	68.1	50.0	63.9	16.2	72.3	75.9	76.4	12.8	6.7	46.0	18.9	73.2

Sources: The original source of all information listed in the table is the Russian Imperial Census 1897. Most of data come from RISTAT: Electronic Repository of Russian Historical Statistics <https://ristat.org> See Kessler and Markevich (2019) for details. Data on population, square and density are taken directly from <http://www.demoscope.ru/weekly/ssp/census.php?cy=0> District Id in parentheses corresponds with Fig. A.1.

Data on confession at the district level are taken directly from Volume 6 (p. 9, 40, and 43) http://istmat.info/files/uploads/15771/perepis_1897_vypusk_6.pdf

Data on employment at the district level come from "Russian Empire Occupations in the Late 19th-Early 20th Centuries. First All-Russia 1897 Census" <http://hcod.asu.ru/en/>

¹ Percent relates to total population in the province (guberniya) or district (uezd) but information about women illiterate. The percent of "Women Illiterate" is computed with respect to only women.

* Information about Lithuania and Poland corresponds with averages across provinces in Lithuania and Poland, respectively.

Second, we study the Imperial Russian Factory Database, a new data source created by [Gregg \(2020\)](#) that systematize the Imperial Russian censuses of manufacturers of 1894, 1900, and 1908. [Table 2](#) shows that, on average, Polish provinces had a higher density of factories in 1908 and higher number of workers per factory. However, the average power per worker was the same in both Lithuania and Poland, consequently, there is no evidence about the difference in the level of industrial development. Further, in [Appendix 1.C](#), [Table A.2](#) we show that the industrial composition of two countries was very similar in 1908. About 80 percent of all factories were concentrated in five industries: foods (34 percent in Lithuania and 26 percent in Poland), wood (24 percent in Lithuania and 16 percent in Poland), animal (12 percent in Lithuania and in Poland, mineral products (12 percent in Lithuania and 11 percent in Poland) and machine (13 percent in Lithuania and 16 percent in Poland).

Table 2: Factories' Statistics in 1894 and 1908

Province/ District (Id)	Number of factories		Density of factories		Number of workers		Revenue		Power per worker	
	1894	1908	1894	1908	1894	1908	1894	1908	1894	1908
Panel I: Lithuania in 2016										
Vilna Governorate-General:										
Kovenskaia	717.0	678.0	17.8	16.9	16.1	33.2	39,484.2	75,521.6	2.4	1.6
Vilenskaia	340.0	299.0	8.1	7.1	29.2	49.6	52,814.2	81,483.5	0.9	0.8
Vistula Land:										
<i>Suvalskaia:</i>	7.0	5.7	4.2	3.7	10.4	15.3	17,036.3	9,940.5	1.0	2.4
Kalvarskiy (2)	1.0	6.0	0.9	5.1	6.0	15.8	2,880.0	10,540.0	0.2	3.9
Mariampolskiy (3)	10.0	8.0	5.2	4.2	14.1	22.5	19,438.5	16,081.4	2.7	1.1
Vladislavovskiy (6)	10.0	3.0	6.4	1.9	11.2	7.7	28,790.3	3,200.0	0.2	2.1
Volkovyshskiy (7)	44.0	11.0	39.4	9.9	13.1	21.5	15,657.1	22,370.0	1.6	2.3
Lithuania*	354.7	327.6	10.0	9.3	18.6	32.7	36,444.9	55,648.5	1.5	1.6
Panel II: Poland in 2016										
Vistula Land:										
Varshavskaia	684.0	711.0	60.3	62.7	74.8	74.0	125,286.9	166,400.8	0.7	0.7
Kalishskaia	408.0	326.0	36.0	28.8	36.9	48.3	50,452.9	86,854.6	1.5	1.5
Keletskaia	269.0	190.0	26.7	18.8	27.4	55.6	42,901.4	83,106.1	1.3	1.3
Liublinskaia	301.0	264.0	17.9	15.7	44.7	45.5	59,045.2	73,197.5	1.1	1.7
Lomzhinskaia	228.0	204.0	21.6	19.3	10.9	19.2	21,483.0	16,012.1	1.7	1.6
Petrokovskaia	864.0	1,087.0	70.5	88.7	126.1	148.2	216,513.0	433,449.0	0.8	0.9
Plotskaia	155.0	152.0	16.4	16.1	24.1	19.5	32,560.5	27,574.7	2.7	1.4
Radomskaia	459.0	311.0	37.2	25.2	30.0	56.5	46,526.9	86,997.1	1.2	1.3
Sedletskaia		147.0		10.3		33.9		35,034.3		1.4
<i>Suvalskaia:</i>	20.7	8.3	12.2	4.7	6.0	15.6	11,128.8	47,445.7	2.4	3.1
Avgustovskiy (1)	13.0	6.0	7.3	3.4	5.8	20.0	17,024.8	92,516.0	2.8	2.2
Seinskiy (4)	17.0	4.0	13.1	3.1	5.1	9.2	7,130.9	28,310.0	3.3	5.6
Suvalskiy (5)	32.0	15.0	16.0	7.5	6.9	17.5	9,230.7	21,511.1	1.0	1.5
Vilna Governorate-General:										
<i>Grodzenskaia:</i>	94.0	88.7	36.1	34.1	24.4	27.4	25,047.3	46,560.4	0.4	0.7
Belostokskiy (8)	221.0	212.0	86.6	83.1	38.0	37.0	38,608.8	88,884.0	0.2	0.6
Belskiy (9)	43.0	38.0	13.7	12.1	16.5	29.8	19,785.3	28,001.4	0.7	1.4
Sokolskiy (15)	18.0	16.0	7.9	7.0	18.9	15.2	16,747.7	22,795.8	0.2	0.3
Poland*	338.1	298.8	29.8	25.3	38.2	49.1	60,076.5	98,852.3	1.6	1.6

Sources: Data come from the Imperial Russian Factory Database developed by [Gregg \(2020\)](#). District Id corresponds with [Fig. A.1](#).

* Information about Lithuania and Poland correspond with averages across corresponding provinces.

Third, we analyze the geographic and climatic characteristics of the areas. In [Appendix 1.D](#), [Table A.3](#) confirms the similarity in the landscape and temperature in Lithuania and Poland.

2.C Soviet Ideology

In this Section, we describe how the economic, political, and social distinctions of the Soviet ideology impacted the lives of people. After the October Revolution in 1917, the Bolsheviks government started the process of taking power from the Emperor of Russia, Nicholas II Romanov, and at the end of the civil war in 1922, they formed the Union of Soviet Socialist Republics (USSR). Vladimir Lenin was the first leader of the new-born country. Importantly, it was a one-party system with a centralized planned economy that had control over all sectors.

According to the Communist Party Ideology, women have the same equal rights as men in economic, political, and family life [Atkinson et al. \(1977, p.115\)](#). From the first years, the party leaders launched country-wide campaigns to bring women to the labor force and encourage their educational attainment (see [Fig. 3](#)). Home production was considered a secondary activity, and the responsibility of each individual was to work in social production. To bring further women in the labor market, not working was considered as being dependent and unpatriotic [Atkinson et al. \(1977, p.170\)](#). Female participation was not restricted only to single women; independently of the marital status, the authorities facilitated entry to the labor market. From the beginning, the Soviet regime promoted public services like child-care or the production of consumer durables to ease home production. However, very soon, they faced significant under the provision. Chapter 5 in [Lapidus \(1978\)](#) gives a detailed overview of the evolution of female participation in the USSR and the general trends in society. Previous literature on East and West Germany's separation extensively documented policies in East Germany during the Soviet influence. An interested reader can check [Campa and Serafinelli \(2019\)](#) and [Lippmann et al. \(2020\)](#).

2.D Soviet Ideology in Lithuania and Poland

The Soviet Ideology was exported to Baltic and Eastern European countries. However, there was an essential difference among them: Lithuania was the part of the USSR; however, Poland could preserve the national government but got influenced by the Soviet view. This political freedom of the last could lead to lagged implementation of Soviet Ideology.

To document the difference between the USSR (Lithuania) and the Soviet Bloc (Poland), we focus on one of the relevant variables for this analysis: women's labor participation in the 20th century across European countries. *Panel I* in [Table 3](#) shows the total number of female workers and employees in the economy and its share to all workers and employees in the USSR and each Baltic republic separately. The number of women in the labor market skyrocketed during the first decades and kept increasing after 1950. The statistics for Estonia, Latvia, and Lithuania are available from when they joined the Soviet Union. The share of female workers there was lower than on average in the USSR until 1970, but it reached 50 percent and exceeded the average for the USSR until the last statistics in 1987.



Fig. 3. USSR's Propaganda Targeted Women

Note: Left one: - Woman, learn to read and write! - Oh, Mother! If you were literate, you could help me! A poster by Elizaveta Kruglikova advocating female literacy. 1923. Right one: Viktor Ivanov, Glory to the Soviet Working Women!, 1964

Data about the Soviet Bloc countries report the total number of economically active women and the relative share of economically active women in the total number of workers. It is a comparable measure to the one for the USSR. *Panel II* in [Table 3](#) shows the available statistics about Czechoslovakia, Hungary, and Poland. In these countries, the number of working in the labor market increased from 1950 to 1980. From 1960 onwards, on average, the share of women to men in the labor market was lower in the Soviet Bloc countries than in the Baltic countries. It supports the argument of difference between the USSR and the Soviet Bloc.

Meanwhile, after World War II, Western European countries had other political power in place. The dominant social ideas varied across countries; however, everywhere but the Scandinavian countries, women tended to restrict their activities to private household production. The number of women in the labor force and its share to men in the labor force across the selected countries are in *Panel III* in [Table 3](#). We see that more women were entering the labor market in Belgium, Denmark, Italy, and Spain during the last decades in the 20th century. However, their share was still small compared to the Baltic or the Soviet Bloc countries.

Table 3: Female Labor Participation across Europe and the USSR in the 20th Century

Country	Measure	Year								
		1922	1928	1940	1945	1950*	1960**	1970#	1980###	1987
Panel I: Overall USSR and Baltic countries										
USSR	Number of female workers	1,560	2,795	13,190	15,920	19,180	29,250	45,800	57,569	60,054
	Percent of total	25	24	39	56	47	47	51	51	51
Estonia	Number of female workers	-	-	62	76	138	228	326	378	387
	Percent of total	-	-	35	43	48	50	53	54	54
Latvia	Number of female workers	-	-	95	104	203	352	550	652	677
	Percent of total	-	-	36	40	45	49	53	54	55
Lithuania	Number of female workers	-	-	53	58	130	293	570	758	838
	Percent of total	-	-	30	30	38	43	49	52	52
Panel II: Soviet Bloc countries										
Czechoslovakia	Number of female workers	-	-	-	-	2,095	2,608	3,286	3,349	-
	Percent of total	-	-	-	-	38	43	47	45	-
Hungary	Number of female workers	-	-	-	-	1,181	1,717	2,079	2,254	-
	Percent of total	-	-	-	-	30	36	42	45	-
Poland	Number of female workers	-	-	-	-	5,546	6,154	7,671	7,888	-
	Percent of total	-	-	-	-	45	44	47	46	-
Panel III: Western European countries										
Belgium	Number of female workers	-	-	-	-	820	924	1078	1424	1506
	Percent of total	-	-	-	-	24	26	30	37	39
Denmark	Number of female workers	-	-	-	-	694	646	847	1188	1289
	Percent of total	-	-	-	-	33	31	37	44	46
Greece	Number of female workers	-	-	-	-	510	1193	905	1172	1389
	Percent of total	-	-	-	-	17	32	27	32	36
Italy	Number of female workers	-	-	-	-	5271	5027	6942	7472	8231
	Percent of total	-	-	-	-	25	24	32	33	35
Spain	Number of female workers	-	-	-	-	-	-	2283	3783	4692
	Percent of total	-	-	-	-	-	-	19	29	33

Sources: Data in *Panel I* come from *Trud v SSSR (Statisticheskii sbornik) 1988*, (Moscow, 1988) p.107, http://istmat.info/files/uploads/22110/trud_v_ussr_1988_sostav_trudovyh_resursov.pdf. Lapidus (1978) p.176 report similar statistics about USSR.

For each country, there are two measures about female participation: the total number of female workers in a thousand persons and the ratio of female workers to the total number of workers.

Data in *Panel II* come from Adam (1984) p.223. Women in maternity leave are not included except in Czechoslovakia up to 1970. For each country, there are two measures about female participation: the total number of female workers in a thousand persons and the ratio of economically active female workers to the total number of economically active workers.

* Data for Czechoslovakia and Hungary correspond with 1948 and 1949, respectively. Data for Belgium correspond with 1947. Data for both Greece and Italy correspond with 1951.

** Data for Greece and Italy correspond with 1961.

Data for Greece correspond with 1971. Data for Italy correspond with 1977.

Data for Hungary and Poland correspond with 1981. Data for Belgium correspond with 1983. Data for Denmark and Greece correspond with 1981.

Data in *Panel III* come from multiple sources of countries' surveys. Labor force by sex is available at https://www.ilo.org/shinyapps/bulkeplorer58/?lang=en&segment=indicator&id=EMP_TEMP_SEX_AGE_NB_A

2.E Summary of the Section

1. Lithuania and Poland formed the Polish–Lithuanian Commonwealth from 1569 to 1795.
2. The state lost full independence and the Russian Empire governed in Lithuania and the large part of the central areas of Poland until 1918.
3. Lithuania and Poland regained independence in 1919 after the Treaty of Versailles.

4. In 1939, the USSR took the territories of Lithuania as a part of the own state. After 1947, Poland preserved its national government but got heavily influenced by the Soviet Ideology as a part of the Soviet Bloc.
5. The Soviet Ideology brought structural changes to society, one of which is equal sex roles.
6. Being the part of the USSR or the Soviet Bloc led to different Socialist regimes.
7. The USSR fall in 1991. Around that moment, Lithuania and Poland regained back its full independence.

3 Data and Descriptive Findings

In this Section we discuss the Data used in the paper and the descriptive findings of work history across European countries.

3.A *SHARE and SHARELIFE Data*

This paper exploits the Survey of Health, Ageing and Retirement in Europe (SHARE), the SHARELIFE, and the SHARE Job Episodes Panel³. The eligible participant in the SHARE survey is above 50 years old. The main survey provides socio-demographic, health, and economic information about individuals. We consider only wave 7 (2017) because it allows studying Eastern European countries for the first time.

Next, the SHARELIFE survey aims to represent individuals' life history, and it is part of the SHARE project. It was conducted twice in wave 3 (2007) and wave 7 (2017). We use information about all respondents who participated in the main SHARE survey in 2017 and merge the available information from the retrospective studies in 2007 and 2017. Finally, we exploit the Job Episode Panel based on the SHARELIFE survey and are provided by organizers to ease the computation of the individual working history.

The quality of re-called information can be of concern, and previous studies based on wave 3 of SHARELIFE (Brunello et al. (2013), Kesternich et al. (2014), Crespo et al. (2014), Fort et al. (2016), and Havari and Mazzonna (2015)) run numerous tests and argue data trustworthiness.

We restrict our analysis to individuals who lived most of their working life under the Soviet regime, so we consider only those born between 1935 and 1958 to start the working career during the regime. Our targeted sample includes 70 percent of all SHARELIFE participants in 2017 (see Appendix B, Fig. B.1).

³This paper uses data from the generated Job Episodes Panel (DOI: 10.6103/SHARE.jep.710), see [Brugiavini et al. \(2019\)](#) for methodological details. The Job Episodes Panel release 7.1.0 is based on SHARE Waves 3 and 7 (DOIs: 10.6103/SHARE.w3.710, 10.6103/SHARE.w7.710).

Also, the main results of the paper are based on the data from all regions in Lithuania and the regions of Poland that previously were the part of the Russian Empire: Lublin Voivodeship, Łódź Voivodeship, Masovian Voivodeship, Podlaskie Voivodeship and Swietokrzyskie Voivodeship.⁴ In Appendix C, Fig. C.1 numbers the corresponding Polish regions.

Treatment variable. We define the USSR variable to capture the treatment. We classify a respondent in the USSR or the (Soviet) Bloc if he was born in Lithuania or one of those Polish regions under the analysis, respectively. By the survey construction, we can observe full individual residential history. In our sample, 50 percent of respondents never change the region of residence during their life (see Appendix E, Fig. E.1). Still, we show that findings are robust to other USSR definitions, like the region in which a person lived at age 18 (at the beginning of the working career) or lived the most of the life.

Outcome variables. First, we study the educational level of an individual; and we use seven ISCED-1997 categories provided by organizers. We also define pooled categories of education: low-, secondary- and high-education to overcome the limited size of some original categories.⁵ In Appendix D, Fig. D.1 shows empirical cumulative distributions for the two education variables across individuals from the USSR and Bloc: the left-hand-side Panel is the original ISCED-1997 level, and the right-hand-side Panel shows the aggregate variable. We see that individuals from the USSR acquired more education than those born in the Soviet Bloc.

Second, we look at the labor experience variables. Using the Job Episodes Panel, we construct the cumulative years of working experience at each age. We restrict to individuals who were born from 1935 to 1958, and we count only years of experience before the fall of the regime, 1990, not to confound with the transition period after the fall of the USSR. In our analysis, first, we use the cumulative years of experience by age 25, which allows us to verify the trends in the early-life career. Next, we study experience by age 50 as the cumulative experience during the whole life, abstracting from early retirements. Finally, we construct the labor experience between 25 and 50 years to eliminate the study-work trade-off early in life.

Then, we consider marital and fertility history during life: a dummy indicator to marry at least once, the number of marriages, the number of children, daughters, and sons. To abstract from the confounding factors during the transition period in Lithuania and Poland, we consider only children born before 1990.

Next, we consider life satisfaction (a categorical variable from 0 to 10), and life quality (a categorical variable from 12 to 48) measures.

Finally, we include self-perceived health status, that is a categorical variable that takes

⁴Information about the region of residents is at NUTS 3 level for Lithuania and NUTS 2 level for Poland. Accordingly, in total, we have 10 regions in Lithuania and 5 regions in Poland.

⁵The low education group includes no education at all, ISCED-1997-1 and ISCED-1997-2. Secondary education corresponds with ISCED-1997-3. The high-education group consists of ISCED-1997 above 3.

four values: 4, 3, 2, and 1 corresponding with being in very good, good, fair, and poor health, respectively. We also consider health-related variables: the number of chronic diseases, the number of limitations with daily activities (ADL) (a categorical variable from 0 to 6), the number of mobility limitations (a categorical variable from 0 to 10), the memory ability (a categorical variable from 0 to 10), and the body mass index (BMI).

Control variables. Similar to other authors who used the SHARELIFE (Brunello et al. (2013), Kesternich et al. (2014), Crespo et al. (2014), and Fort et al. (2016)) we include proxies for early life socioeconomic status (SES): four categories of health at age 10, a mental health problem dummy at age 10, to be a good student at math dummy; five places of birth dummies: a big city, the suburbs of a big city, a large town, a small town or rural area; the features of the individual’s dwelling at age 10: three dummies for the number of books by age 10, the number of services (i.e., hot running water supply, having a toilet inside the house and others), and the number of rooms. Further, we add year of birth fixed effects.

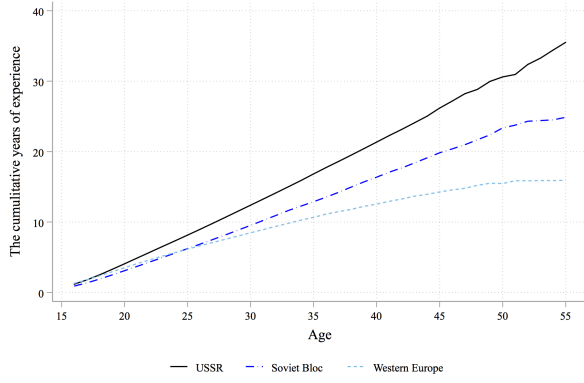
3.B Descriptive Findings about Work History

Based on the evidence in Section 2.D, we formulate and verify the hypothesis about the treatment intensity across European countries:

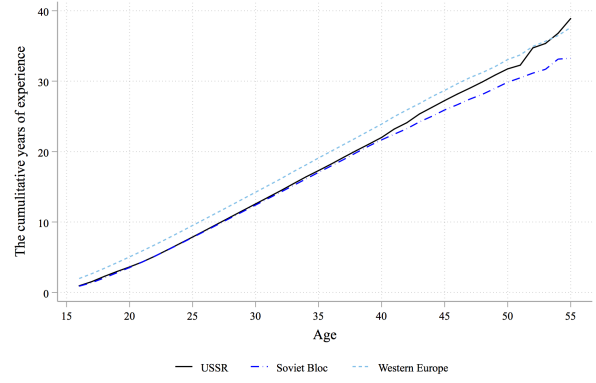
Hypothesis. *The Soviet regimes played an essential role in women’s labor decisions in the 20th century. In the USSR (includes Lithuania), women worked almost an entire working-age span. There is also a high women’s labor participation in the Soviet Bloc (includes Poland); it is still lower than in the USSR due to limited enforcement. Women from Western European countries show the lowest attachment to the labor market in the 20th century.*

To validate the hypothesis above, we divide all the respondents into three broad groups according to the place of birth: the USSR (Estonia, Latvia, and Lithuania), the Soviet Bloc countries (Bulgaria, Czech Republic, Hungary, Poland, Slovakia, and Romania), and Western European countries (Western countries consists of Austria, Belgium, Cyprus, Denmark, Greece, Finland, France, Luxembourg, Malta, Italy, Portugal, Spain, and Sweden). We exclude Croatia, Israel, Slovenia, and Switzerland from the principal analysis because of the political regime changes. We also exclude Germany as the country was divided into two parts after World War II.

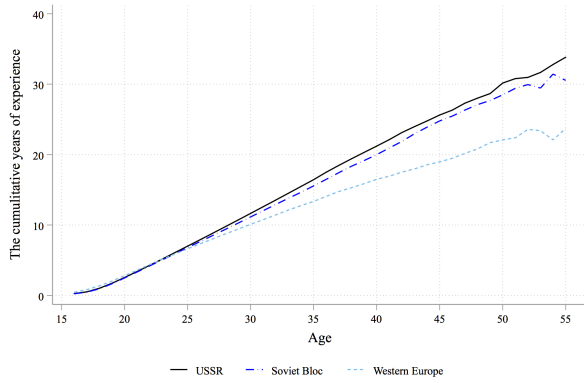
Fig. 4 shows the evolution of working life among men and women in each country group. To ease representation, we split the sample according to educational attainment in three groups: low, secondary, and high. Men’s profiles look very similar across countries and education levels, whereas the profile of women notably differs. Women in the USSR accumulate more years of working experience by age 50 regardless of their schooling. This difference is the sharpest among a low-educated group.



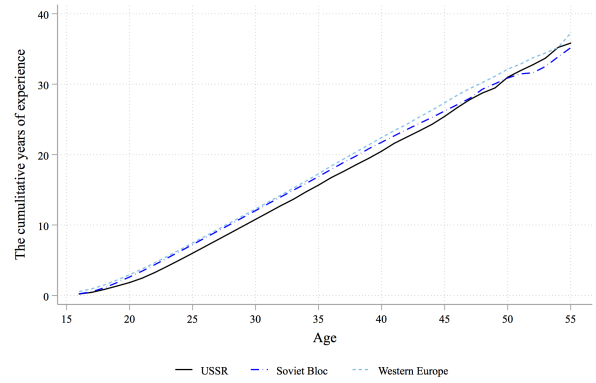
(a) Lower/Primary Education, Women



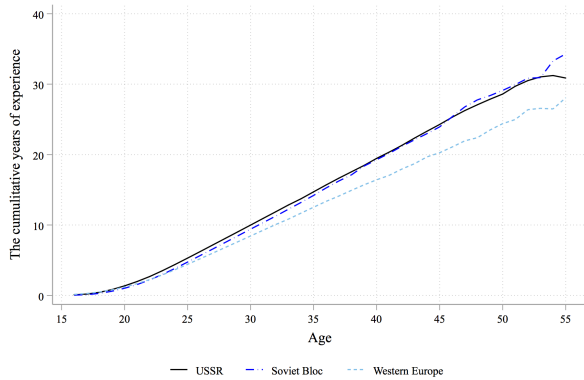
(b) Lower/Primary Education or Lower, Men



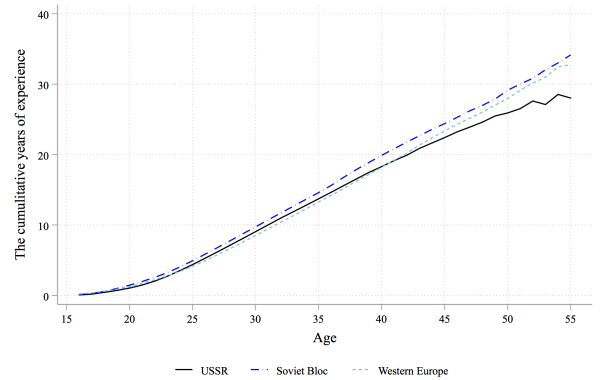
(c) Secondary Education, Women



(d) Secondary Education, Men



(e) Above Secondary Education, Women



(f) Above Secondary Education, Men

Fig. 4. Working Experience across Europe

4 Identification

In this Section, we describe our identification strategy to measure the impact of the USSR on education, working experience, fertility choice, and later-life outcomes. First, we describe the benchmark specification and review the identification assumption. Second, we introduce a series of extensions that allow us to study the USSR's heterogeneous impact and the extensive margin of the effect.

4.A Benchmark Specification

Our benchmark specification resembles a Differences-in-Differences setup. The benchmark regression is

$$Y_i = \gamma_0 + \gamma_1 G_i + \gamma_2 G_i \cdot Z_i + \gamma_3 Z_i + \beta' X_i + \varepsilon_i = m_1(G_i, Z_i, X_i) + \varepsilon_i \quad [4.1]$$

where Y_i is an outcome variable of individual i . G_i is a female dummy. Z_i indicates that the individual was born in the USSR.⁶ X_i is the set of controls: four categories of health at age 10, a mental health problem dummy at age 10, to be a good student at math dummy; five places of birth dummies: a big city, the suburbs of a big city, a large town, a small town or rural area; the features of the individual's dwelling at age 10: number of books, number of services, and number of rooms. Further, we add a year fixed effect. ε_i is an unobserved error.

When fitting [4.1], we use SHARELIFE weights provided by the SHARE to get the representative sample of individuals above 50. Finally, we allow for correlation in unobserved errors among people of the same age and from the same region, and use the cluster standard errors at the year and region of birth level.⁷

This paper aims to identify the impact of the USSR on a variety of outcomes (mainly education and working experience) and investigate a gender-specific channel. As argued in Section 2.B, we see that individuals who lived in the USSR were more exposed to the Soviet Ideology than their counterparts in the Soviet Bloc. The Soviet Union was able to enforce the leading Ideology in its territories strongly. Key to understanding the parameters in [4.1] as the impact of the USSR is the following assumption, introduced in Section 2.A:

Assumption. *Lithuania became the part of the USSR and not the Soviet Bloc due to exogenous factors that are unrelated to the outcome variables relevant to this study. Our identification relies on the similarity between the Former territories of the Russian Empire in Lithuania and Poland.*

As we argued in Section 2.B, we believe that the territories under consideration were similar before the adhesion of Lithuania to the USSR. Therefore, Z_i measures the impact of Soviet Ideology and policies and is not confounded by pretreatment differences.

Central to this work is the study of the Average Marginal Impact (AMI) of the USSR on women. This is defined as the impact of the regime on an average woman. It answers the following question: how much would have changed the outcome (i.e., working experience) of a woman, who is around the average in terms of socioeconomic status, if she had lived in the

⁶We do also perform our analysis with different definitions of the USSR, i.e., whether an individual lived most of her life in the USSR. The main results hold (see Section 6).

⁷We repeat the same analysis but using the robust standard errors or clustered standard errors at the year of birth and the region of work, and the results for all outcome variables hold.

USSR? According to [4.1], the AMI of the USSR on women is measured by:

$$\text{AMI}_1^f = \mathbb{E} \left[\frac{\partial m_1}{\partial z}(G_i, Z_i, X_i) \Big| G_i = 1 \right] = \gamma_2 + \gamma_3 \quad [4.2]$$

Since, in the specification in [4.1], $\partial m_1/\partial z$ does only depend on G_i , the AMI can also be read as the impact of soviet socialism on women, keeping all other covariates constant:

$$\text{AMI}_1^f = \mathbb{E}[Y_i | G_i = 1, Z_i = 1, X_i = x] - \mathbb{E}[Y_i | G_i = 1, Z_i = 0, X_i = x] \quad [4.3]$$

The later is a *ceteris paribus* effect, instead of an effect on an average woman. Once we extend the benchmark setup to account for the heterogeneous effects by education, we will lose this *ceteris paribus* interpretation of the AMI.

For men, the AMI of the USSR is given by $\text{AMI}_1^m = \gamma_3$. The parameter corresponding to the interaction term, γ_2 , is also of interest. This is the Differences-in-Differences parameter, which measures the differential impact of the Soviet Union on women when compared to men, i.e., $\gamma_2 = \text{AMI}_1^f - \text{AMI}_1^m$.

Our first extension to [4.1] is to allow for gender varying covariates. We estimate

$$Y_i = \gamma_0^g + \alpha^g Z_i + \beta^{g'} X_i + \nu_i = m_2(G_i, Z_i, X_i) + \nu_i \quad [4.4]$$

where $g \in \{f, m\}$, for separate samples of women and men. In the regression above, the effect of controls on the outcome variable, $\beta^{g'}$, is allowed to vary across gender. That is, this specification is more flexible than [4.1]. Even though estimating [4.4] for each gender leads to a considerable sample size drop, we want to confirm that the effects estimated by [4.1] do not rest on the imposition of a homogeneous impact of other covariates.⁸ Moreover, in extensions, we use [4.4] to allow for the heterogeneous impact of Soviet Ideology by education (see Section 4.B).

In the setup specified by [4.4], the USSR's impact on women is measured by $\text{AMI}_2^f = \alpha^f$; equivalently, $\text{AMI}_2^m = \alpha^m$. In this specification, we can also study the differential impact on women by estimating $\text{AMI}_2^f - \text{AMI}_2^m = \alpha^f - \alpha^m$. As mentioned above, in the absence of heterogeneous impact of covariates, we expect these coefficients to be close to the estimate γ_2 in [4.1].

4.B Heterogeneous Impact of the USSR

Now, we extend the specification to account for the impact of the Soviet Union by education groups. Education is itself an outcome of the USSR regime and policies. However, it is also an important predictor of working experience: in early life, there is a trade-off between

⁸This is, indeed, the case (see Table 4).

working and studying, whereas educated people face different working opportunities (see our model in Section 5.B). As we document in Descriptive Findings (see Fig. 4), the impact of the Soviet Union may be heterogeneous in education.

Therefore, we extend [4.4] to account for heterogeneity with education. This extension has two goals. First, as we show below, the AMI can be inconsistently estimated if heterogeneity is not accounted for. Second, it allows to a deeper analysis of the impact of the USSR. Thus, let's assume that the impact of the regime varies across education groups:

$$Y_i = \gamma_0^g + \alpha^g(E_i)Z_i + \beta^{g'}X_i + \vartheta_i = m_3(G_i, Z_i, E_i, X_i) + \vartheta_i \quad [4.5]$$

where E_i denotes educational attainment of individual i and it can take 3 values: 0, 1, and 2. So, without loss of generality:

$$\alpha^g(E_i) = \alpha_0^g + \alpha_1^g E_{1i} + \alpha_2^g E_{2i} \quad [4.6]$$

being E_{ji} a dummy variable indicating that individual i is in the j -th education group, for $j \in \{0, 1, 2\}$. For the specification in [4.5], the AMI of the Soviet Union on women is:

$$\begin{aligned} \text{AMI}_3^f &= \mathbb{E} \left[\frac{\partial m_3}{\partial z}(G_i, Z_i, E_i, X_i) \Big| G_i = 1 \right] = \mathbb{E}[\alpha^f(E_i) | G_i = 1] = \\ &= \alpha_0^f + \alpha_1^f \text{P}(E_i = 1 | G_i = 1) + \alpha_2^f \text{P}(E_i = 2 | G_i = 1) \end{aligned} \quad [4.7]$$

Here, we show that an estimator $\hat{\alpha}^f$ from [4.4] is not a consistent estimate of the AMI for women. First, define the deviation of the USSR's impact from its (conditional) mean:

$$v_i = \alpha^f(E_i) - \mathbb{E}[\alpha^f(E_i) | G_i = 1] = \alpha_1^f (E_{1i} - \mathbb{E}[E_{1i} | G_i = 1]) + \alpha_2^f (E_{2i} - \mathbb{E}[E_{2i} | G_i = 1]) \quad [4.8]$$

With this definition, we can rewrite [4.5] as

$$Y_i = \gamma_0^f + \mathbb{E}[\alpha^f(E_i) | G_i = 1]Z_i + \beta^{f'} + \underbrace{Z_i v_i + \vartheta_i}_{=\nu_i} \quad [4.9]$$

Therefore, an estimator based on [4.4] will be consistent for $\mathbb{E}[\alpha^f(E_i) | G_i = 1]$ if and only if

$$\mathbb{E}[Z_i v_i] = \alpha_1^f \mathbb{E}[Z_i (E_{1i} - \mathbb{E}[E_{1i} | G_i = 1])] + \alpha_2^f \mathbb{E}[Z_i (E_{2i} - \mathbb{E}[E_{2i} | G_i = 1])] = 0 \quad [4.10]$$

We believe that this is not the case, since being born in the USSR highly correlates with educational attainment, and we expect the impact of the Soviet Union to be heterogeneous in education (i.e. $\alpha_1^f \neq 0$ and $\alpha_2^f \neq 0$), as it is shown in Fig. 4. Therefore, we do also estimate

the following model, in which we also control for educational attainment:

$$Y_i = \gamma_0^g + \alpha_0^g Z_i + \alpha_1^g Z_i E_{1i} + \alpha_2^g Z_i E_{2i} + \lambda_1^g E_{1i} + \lambda_2^g E_{2i} + \beta^{g'} X_i + \tilde{\vartheta}_i \quad [4.11]$$

Then, we construct the AMI of the USSR following equation [4.7] (an its counterpart for men). Standard errors are computed using the δ -method.

Estimation of [4.11] leads to a profile of impact of the Soviet Union across education. Indeed, now, we are able to estimate the impact of the regime on women, conditional on a fixed education level:

$$\text{AMI}_3^f(e) = \mathbb{E} \left[\frac{\partial m_3}{\partial z}(G_i, Z_i, E_i, X_i) \Big| G_i = 1, E_i = e \right] = \begin{cases} \alpha_0^f & \text{if } e = 0, \\ \alpha_0^f + \alpha_1^f & \text{if } e = 1, \\ \alpha_0^f + \alpha_2^f & \text{if } e = 2 \end{cases} \quad [4.12]$$

We use the above equation, and its counterpart for men, to plot the profile of the the impact of the USSR across educational attainment.

4.C The Extensive Margin of the Impact of the USSR

In this Section, we adapt the methodological tools described in 4.B to study the extensive margin of the impact of the USSR. We exploit the difference across birth cohorts in our sample. The exposure of these cohorts to Soviet Union and its policies varies within our sample as the regime fell roughly in 1990. As we can see in Fig. 5, the maximum attainable years of working experience before the fall of the USSR is higher for older cohorts, as the regime spanned the whole working lives of these individuals. In contrast, younger cohorts were in the middle of their career when the regime fell. However, it is worth noting that these younger individuals did perform their educational choices under the regime, being uncertain about its eventual end.

We can exploit these variation to measure the extensive margin of the impact of the Soviet Union. Indeed, we claim that this is the heterogeneous impact of the USSR by birth cohort. Therefore, we adapt the specification in [4.5] to account for heterogeneity:

$$Y_i = \gamma_0^g + \alpha^g(C_i) Z_i + \beta^{g'} X_i + \vartheta_i = m_4(G_i, Z_i, C_i, X_i) + \vartheta_i \quad [4.13]$$

where C_i denotes the birth cohort of individual i . Assuming that there are \mathcal{C} cohorts:

$$\alpha^g(C_i) = \alpha_0^g + \sum_{j=1}^{\mathcal{C}-1} \alpha_j^g C_{ji} \quad [4.14]$$

being C_{ji} a dummy variable indicating that individual i belongs to the j -th cohort. Following the same reasoning as in 4.B, we can define the extensive margin of the impact on woman

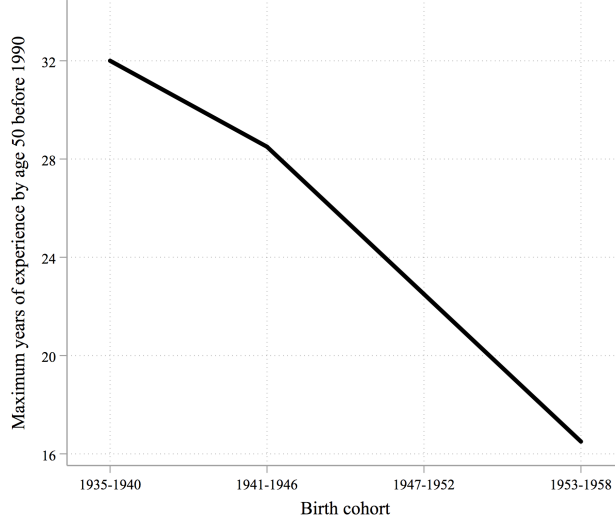


Fig. 5. Maximum Attainable Working Experience by age 50 before 1990

by computing:

$$\text{AMI}_4^f(c) = \mathbb{E} \left[\frac{\partial m_4}{\partial z} (G_i, Z_i, C_i, X_i) \Big| G_i = 1, C_i = c \right] = \begin{cases} \alpha_0^f & \text{if } c = 0, \\ \alpha_0^f + \alpha_c^f & \text{if } c \neq 0 \end{cases} \quad [4.15]$$

where the α 's are obtained from [4.13].

5 Results

First, this Section represents the findings on education and experience. Next, we introduce the model of educational choice that guides the mechanism of the USSR impact. Then, we study the heterogeneous impact across education and explore the extensive margin of the USSR impact. Finally, we report the findings on marriage history, fertility, and later-life well-being.

5.A USSR, Education and Work History

First, Column 1 in Table 4 shows the impact of the USSR on the education level measured by seven ISCED-1997 categories. Panel I reports the results for the pooled sample of men and women. The female coefficient, γ_1 , is negative as expected, that confirms the general trend in lower schooling among women. The USSR coefficient, γ_3 , shows evidence that, on average, people who were grown in the Soviet Union get more education. It reflects the availability of education in the country. The gender-specific impact, γ_2 , shows that the USSR affected more women than men; and looking at the Average Marginal Impact (AMI) for women, we see that

they accumulate 80 percent a level more of education than the ones from the Soviet Bloc.⁹ This finding relates to the magnitude of the USSR coefficient on the subsample of women and men, *Panel II* and *Panel III* respectively. We will discuss the origin of this differential impact on women after presenting the results of experience.

Next, we check the impact of Soviet Union on working experience by age 25, by age 50 and between 25 and 50 years old. We begin with the regime's total impact, not isolating the effect on schooling, in Columns 2 - 4. In *Panel I*, the coefficient on female is negative in all specifications, which is in line with the intuition about lower women's labor attachment, particularly during the 20th century. The USSR estimate in Column 2 is negative and significant, that reflects the lower labor attachment by age 25 that, indeed, is very likely in the presence of higher opportunities to study in the USSR. In Column 4, we abstract from the early-life trade-off between schooling and working and look at the experience from 25 to 50 years old to estimate the impact of work enforcement policies. Accordingly, the USSR coefficient is equal to 0.50 and statistically significant at 5 percent level (see Column 4), implying that, on average, individuals under the strong Soviet regime accumulate close to half a year more of working experience during those ages. Finally, the women-specific impact is larger than the one for men, and it is equal to 1.47 years more of experience. These findings hold when we look separately on men and women in *Panel II* and *III*. Moreover, the interaction term, γ_2 , is strongly significant for all outcome variables, indicating an strong differential effect of the USSR on women. Additionally, the AMI of the USSR on women increases over the life cycle, by age 50 women in the USSR accumulate almost 2 years of working experience more than women in the Soviet Bloc.

Despite education being an outcome of the regime, it is also an important predictor of labor participation. Next, we include it as a control variable. Columns 5 - 7 show the results. In this case, we include education as an independent variable in the work model, so the associated coefficient with education captures partially the impact of the USSR itself. Indeed, looking at the subsample of women and men (*Panel II and III*), the impact of the USSR on the employability (Column 7) gets smaller comparing with Column 4. Moreover, there is a different pattern across genders. Women with secondary and high education accumulate more than 1.9 and 2.1 years of experience from 25 to 50 compared with low educated; both coefficients are statistically significant at 1 percent level. It means that either women find easier a job once they acquired education; or women who decided to take more education, want to participate in the labor market. In our analysis, we cannot disentangle these two channels. However, there is no association between men's education and working experience between 25 to 50. It proves that work is not a choice for men, and they need to work regardless of schooling.

⁹Following the specification in [4.4], we can also compute the differential impact of the USSR on women as the difference in the USSR coefficients in the subsample of women (*Panel II*) and men (*Panel III*).

Table 4: USSR, Education and Working Experience

Variables	Cumulative working experience									
	Education	No control for education			Controls for three education levels			Heterogeneity with education		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	By 25	By 50	25-50	By 25	By 50	25-50	By 25	By 50	25-50	
<i>Panel I: Both men and women</i>										
Female	-0.332*** (0.0656)	-0.585*** (0.213)	-2.287*** (0.463)	-1.702*** (0.322)	-0.715*** (0.206)	-2.238*** (0.444)	-1.523*** (0.307)			
Female × USSR	0.554*** (0.107)	1.290*** (0.290)	2.344*** (0.571)	1.054*** (0.389)	1.598*** (0.275)	2.463*** (0.553)	0.866** (0.380)			
USSR	0.256*** (0.0823)	-0.734*** (0.204)	-0.319 (0.359)	0.415* (0.246)	-0.468** (0.204)	-0.0529 (0.367)	0.415* (0.247)			
<i>Education:</i>										
Secondary					-0.311 (0.227)	1.189** (0.575)	1.500*** (0.446)			
High					-2.051*** (0.329)	-0.527 (0.639)	1.524*** (0.431)			
AMI of the USSR on women	0.809***	0.556***	2.025***	1.468***	1.130***	2.410***	1.281***			
P-value: AMI=0	0.000	0.009	0.000	0.000	0.000	0.000	0.000			
R ²	0.328	0.0790	0.382	0.534	0.113	0.388	0.542			
N	2250	2250	2250	2250	2250	2250	2250			
<i>Panel II: Women</i>										
USSR	0.854*** (0.0741)	0.501** (0.219)	2.092*** (0.476)	1.591*** (0.354)	1.144*** (0.218)	2.442*** (0.511)	1.298*** (0.394)	2.036*** (0.506)	4.879*** (1.202)	2.842*** (0.871)
<i>Education:</i>										
Secondary					-0.196 (0.312)	1.783** (0.835)	1.979*** (0.655)	-0.105 (0.326)	2.009** (0.888)	2.114*** (0.700)
High					-2.147*** (0.366)	-0.0575 (0.787)	2.089*** (0.582)	-2.026*** (0.435)	0.406 (0.903)	2.431*** (0.652)
<i>Education × USSR:</i>										
Secondary × USSR								-1.332** (0.539)	-3.285*** (1.268)	-1.953** (0.936)
High × USSR								-1.062* (0.586)	-3.279*** (1.225)	-2.217*** (0.855)
AMI of the USSR	0.854***	0.501**	2.092***	1.591***	1.144***	2.442***	1.298***	1.269***	2.893***	1.624***
P-value: AMI=0	0.000	0.023	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000
R ²	0.393	0.0812	0.318	0.449	0.114	0.327	0.461	0.116	0.329	0.463
N	1310	1310	1310	1310	1310	1310	1310	1310	1310	1310
<i>Panel III: Men</i>										
USSR	0.244*** (0.0865)	-0.700*** (0.224)	-0.264 (0.326)	0.436** (0.195)	-0.477** (0.227)	-0.0655 (0.346)	0.412** (0.201)	0.609 (0.481)	1.907** (0.935)	1.298** (0.634)
<i>Education:</i>										
Secondary					-0.557 (0.344)	-0.0218 (0.771)	0.535 (0.542)	-0.458 (0.366)	0.145 (0.828)	0.604 (0.582)
High					-2.081*** (0.496)	-1.383 (0.918)	0.698 (0.578)	-1.959*** (0.555)	-1.107 (1.026)	0.851 (0.645)
<i>Education × USSR:</i>										
Secondary × USSR								-1.432** (0.566)	-2.402** (1.088)	-0.971 (0.719)
High × USSR								-1.363** (0.689)	-2.753** (1.239)	-1.390* (0.777)
AMI of the USSR	0.244***	-0.700***	-0.264	0.436**	-0.477**	-0.0655	0.412**	-0.383*	0.164	0.547**
P-value: AMI=0	0.005	0.002	0.419	0.026	0.037	0.850	0.042	0.077	0.630	0.013
R ²	0.275	0.142	0.543	0.708	0.179	0.546	0.709	0.182	0.548	0.710
N	940	940	940	940	940	940	940	940	940	940

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The cluster standard errors at the year and region of birth level are in parentheses. We restrict to individuals who were born from 1935 to 1958 in the former territories of Russian Empire in Lithuania and Poland. In *Panel (I)* we report the estimated coefficient γ_2 from Equation 4.1, and *AMI* from Equation 4.2. In *Panel (II)* and *Panel (III)*, we report the estimated coefficient α^f , α^m from Equation 4.4, and *AMI* from Equation 4.12. All regressions control for constant, a four categories of health at age 10, a mental health problem dummy at age 10, to be a good student at math dummy; five place of birth dummies: a big city, the suburbs of a big city, a large town, a small town or rural area; the features of the individual's dwelling at age 10: the number of books by age 10, the number of services, the number of rooms, and the year fixed effects.

Since the Soviet Union changed the acquired schooling, we account for the heterogeneity of the impact of the USSR on experience across educational attainment. Columns 8 - 10 show the results. In this case, the AMI increases even further for men and women comparing with the estimate in which we ignored the potential heterogeneity (Column 2 - 7). On average, women in the USSR accumulated almost 3 extra years of experience by age 50 compared

with women in the Soviet Bloc. The impact for men is significant only when we abstract from early-life trade-off.

Next, we repeat the same analysis as above but following the identification strategy similar to [Fuchs-Schündeln and Masella \(2016\)](#). Instead of controlling for the USSR dummy, we now include each region identifier to isolate any regional differences. [Table 5](#) reports the results for the full sample. As we see, the magnitudes of all coefficients are similar to *Panel I* in [Table 4](#). It confirms no systematic differences across regions, along with acquired education and work history. It is not a formal test, but since including region fixed effects do not change our conclusion about the coefficients; in the rest of this article, we only control for the USSR variable.

Table 5: USSR, Education and Working Experience Controlling for Region Fixed Effects

Variables	Cumulative working experience						
	Education	No control for education			Controls for three education levels		
	(1)	(2) By 25	(3) By 50	(4) 25-50	(5) By 25	(6) By 50	(7) 25-50
Female	-0.328*** (0.0652)	-0.589*** (0.214)	-2.284*** (0.466)	-1.695*** (0.325)	-0.715*** (0.207)	-2.232*** (0.448)	-1.517*** (0.310)
Female × USSR	0.539*** (0.106)	1.335*** (0.292)	2.381*** (0.576)	1.046*** (0.391)	1.634*** (0.277)	2.498*** (0.557)	0.864** (0.381)
Secondary					-0.261 (0.234)	1.278** (0.591)	1.539*** (0.457)
High					-2.028*** (0.333)	-0.476 (0.653)	1.552*** (0.442)
R^2	0.335	0.0821	0.385	0.537	0.116	0.391	0.545
N	2250	2250	2250	2250	2250	2250	2250

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The cluster standard errors at the year and region of birth level are in parentheses. We restrict to individuals who were born from 1935 to 1958 in the former territories of Russian Empire in Lithuania and Poland. We report the estimated coefficient γ_2 from [Equation 4.1](#). All regressions control for constant, a four categories of health at age 10, a mental health problem dummy at age 10, to be a good student at math dummy; five place of birth dummies: a big city, the suburbs of a big city, a large town, a small town or rural area; the features of the individual's dwelling at age 10: the number of books by age 10, the number of services, the number of rooms, and the year and region fixed effects.

5.B Model of Labor and Schooling Decision in the USSR

Why did the Soviet Union have a stronger impact on women's education and work experience? The first channel is related to the work enforcement: zero unemployment policies, work propaganda, and other macroeconomic factors specific to the USSR. The second channel is through education availability, in particular, making it free and universal. The results in [Table 4](#) suggest that these first two channels are less stronger for men. Lastly, the third gender-specific channel, the indirect impact of the USSR on women's experience through higher incentives to study in the presence of future rights and obligation to work. [Fig. 6](#) illustrates the proposed mechanism.

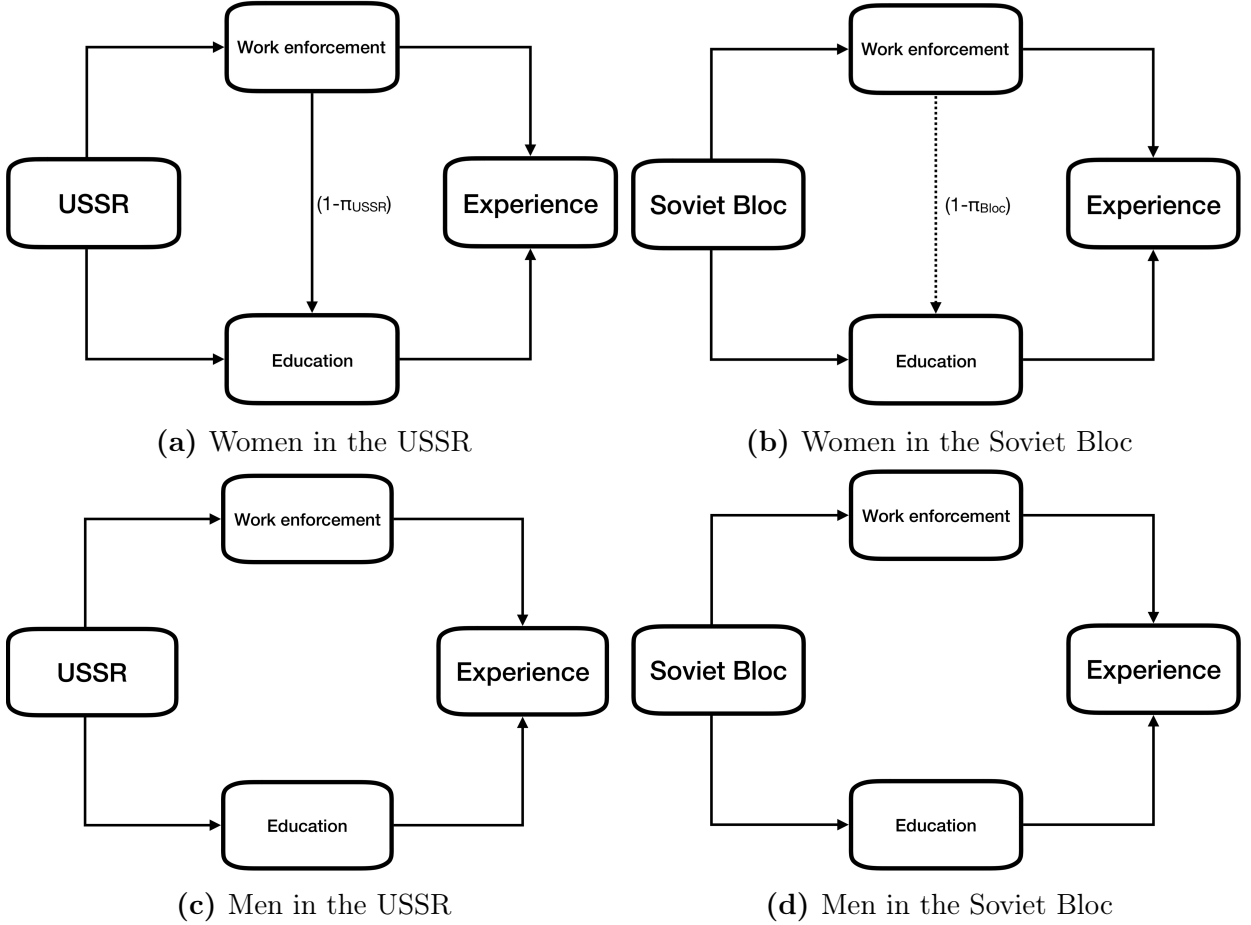


Fig. 6. USSR, Education and Working Experience

To see the third women-specific mechanism, we can build a model of educational choice. For simplicity, let us assume that at the moment when a woman makes a binary decision about schooling, $educ$, she also forms beliefs about her future possibility to be employed, π . Likely, women in the USSR had higher beliefs about the probability to find a job because of the stronger power of the state to enforce the announced policies, $\pi_{USSR} > \pi_{Bloc}$, or equivalently women in the Soviet Bloc could form higher beliefs about the possibility not to participate, i.e., to remain housewives, compared with women in the USSR. Moreover, assume that the chances to find a job differ between these two states due to macroeconomic factors. The zero unemployment policy and the planned mechanism of getting jobs were better enforced in the USSR than in the Soviet Bloc. Let us denote the future employment rate as ϕ , and $\phi_{USSR} > \phi_{Bloc}$. For simplicity, we can assume that this probability to find a job does not change with the education level. Then, her expected income becomes $\pi\phi \cdot w(educ) + \pi(1-\phi) \cdot u + (1-\pi) \cdot h$, where $w(educ)$ is the labor income, $w(1)$ or $w(0)$, u are unemployment benefits, and h is the income in case of remaining at home. Consider that the costs of education, $c(educ)$, are increasing in the level of education, $c(1) > c(0)$. Since the USSR government tried to achieve the free and universe education, it is reasonable to assume that this education cost is relatively smaller in the USSR than in the Soviet Bloc: $c_{USSR}(1) - c_{USSR}(0) < c_{Bloc}(1) - c_{Bloc}(0)$.

Then, a woman in the USSR decides to study if

$$\pi_{USSR}\phi_{USSR} \cdot (w(1) - w(0)) \geq c_{USSR}(1) - c_{USSR}(0).$$

On the other hand, a woman in the Bloc chooses schooling if

$$\pi_{Bloc}\phi_{Bloc} \cdot (w(1) - w(0)) \geq c_{Bloc}(1) - c_{Bloc}(0).$$

Here, we implicitly assume that the relative wage range is the same across the USSR and the Soviet Bloc, we do it because both countries use the wage scale. We get that the wage premium of education is the same in both countries, but what varies the beliefs about being employed is the probability to find a job and the cost of education. According to this model, if a woman forms high beliefs about her job opportunities, π , then she studies more. So, this simple model explains why schooling became more attractive for women in the USSR, once the employment was less a choice but an obligation later in life. For men, this indirect channel is not present because for them π is equal to 1 independently of education; so, the only two channels that matter for men are the direct channel of work enforcement, ϕ , and the direct educational channel measured by relative costs, $c(1) - c(0)$.

We are not the first who claim this positive impact of socialism on the education and women’s participation. However, up to our knowledge, we contribute to this literature by studying individual choices during the Soviet Union and showing directly three channels of the Soviet regime on education and experience. The closest article for that regard is [Campa and Serafinelli \(2019\)](#) in which they show that gender role attitudes and the importance of career success significantly differ among East and West German women. Regarding the impact of socialism on the education in East Germany, [Fuchs-Schündeln and Masella \(2016\)](#) point out that the Soviet governments promoted free education to all citizens, in part because schools were the perfect place to implement propaganda.

5.C *Heterogeneity with Education*

In this Section, we show the heterogeneity of the impact of the USSR on experience across education groups.

First, we report how the USSR’s impact on cumulative working experience by age 50 depends on education for men and women. [Fig. 7](#) shows the AMI of the USSR on experience by age 50 and the 95 percent confidence interval. [Fig. 7a](#) confirms that the USSR has a positive and significant impact on women’s participation, and this effect is larger for women with lower and secondary education. On average, women with low-education accumulate more than 4 years of experience at the end of their life comparing to those who were born in the Soviet Bloc. This group accounts for about one-fourth of all women in the USSR (see

Fig. D.1). The impact for low-educated men is also the largest (see Fig. 7b), which means that the USSR regime brought the least educated men to the labor market, i.e., by reducing their unemployment span. In Appendix F, we report the results for working experience from age 25 to 50, and we see that the USSR impacted the most the low and secondary education groups (see Fig. F.1). Additionally, we repeat the same estimate using seven education levels; Fig. F.2 confirms the results, even though looking at more refined groups makes estimates noisier.

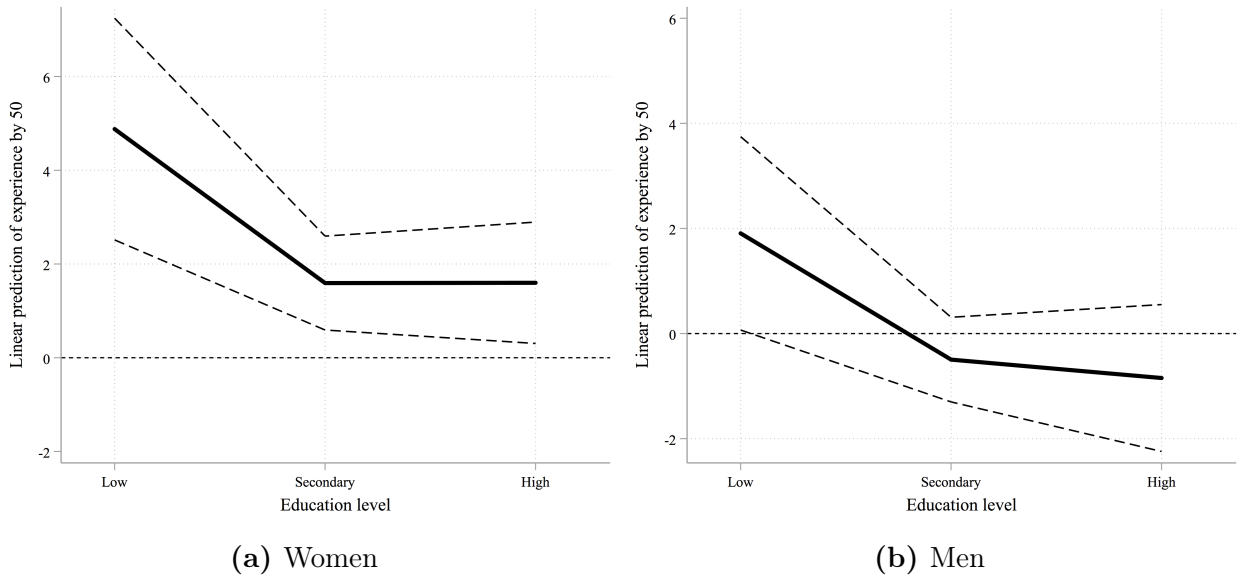


Fig. 7. AMI of the USSR on Experience by age 50 across Education by Gender

5.D Extensive Margin of the USSR Impact

So far, we studied the intensive margin of the treatment, whereas in this Section, we look at the extensive margin. How do the results vary across birth cohorts? In the main analysis, we only use the respondents born after 1935, but in this Section, only we add a cohort from 1930 to 1934 to verify pre-regime cofounders.

In terms of acquired education, the impact increases over the 20th century. Women who were born in the USSR from 1953 to 1958 accumulate, on average, one level more of education (see Fig. 8a); the impact is smaller for men than for women, but for the former it also gets larger among recent cohorts (see Fig. 8b).

Employability follows the opposite pattern across the birth cohorts. Our hypothesis about lagged enforcement of the Soviet Bloc regime compared with the USSR should lead to a stronger impact of the Soviet Union among individuals who were born early. Fig. 9a confirms it as a cohort from 1935 to 1940 work, on average, almost four additional years by age 50. For men, there is no significant impact on cumulative years of experience at 50, as shown in Fig. 9b. In Appendix, Fig. G.1a shows similar findings for experience from age 25 to 50 in the case of women. On the other hand, we see a slightly significant impact of the USSR on

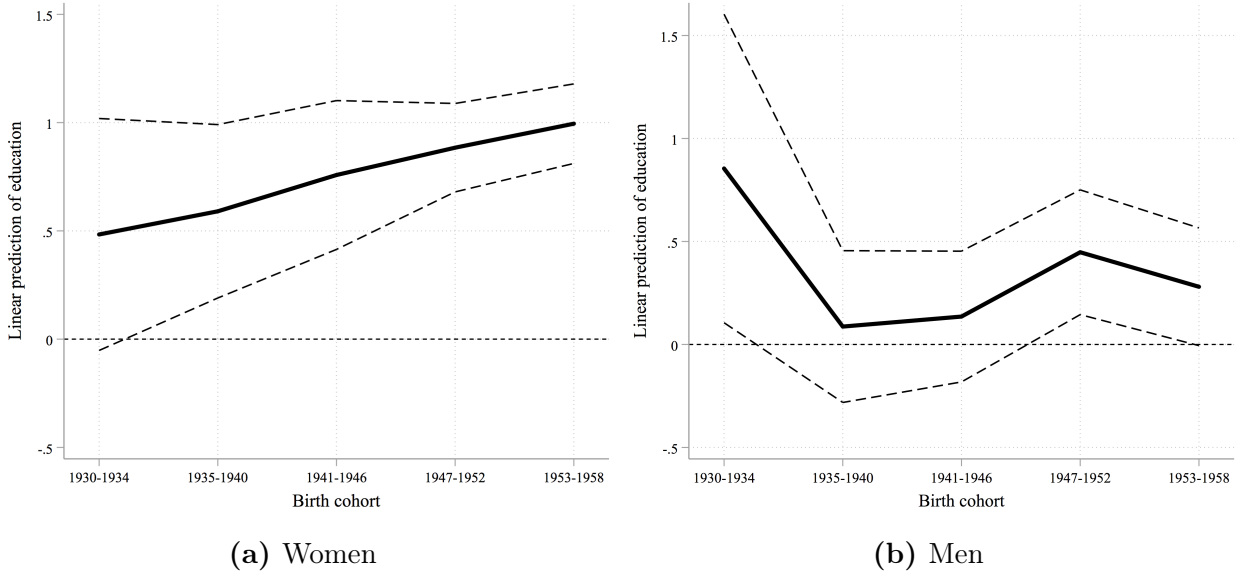


Fig. 8. AMI of the USSR on Education across Birth Cohorts by Gender

low educated men’s employability in Fig. G.1b. Male work enforcement is better described in the case of experience between ages 25 and 50, since this removes the early-life trade-off between work and study.

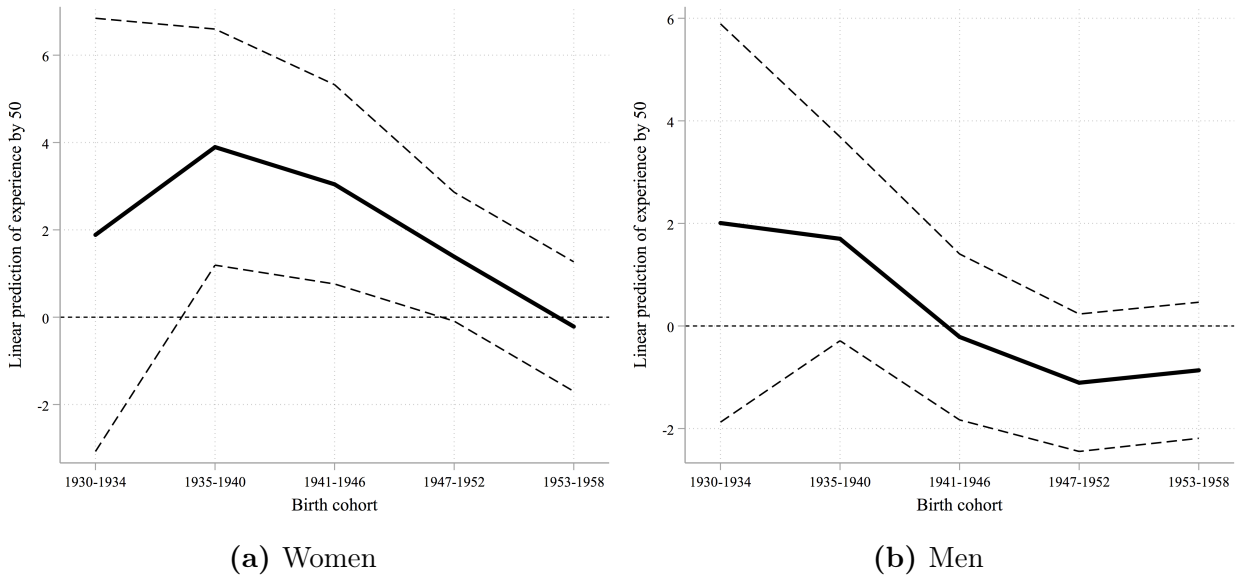


Fig. 9. AMI of the USSR on Experience by 50 across Birth Cohorts by Gender

5.E USSR, Marriage Choices, Reproductive History and Later-Life Outcomes

In this part, we document the role of the USSR in marriage decisions, fertility choices, and later-life well-being. We already saw that the Soviet Union brought more women to the labor market; however, now we want to study if this regime also has a direct impact on the demographic history and well-being.

The Soviet Union promoted equal sex-role policies, enforced its citizens to work, used

propaganda, abolished religious marriage and actively promoted civil marriages, gave the right for divorce, introduced different inheritance laws and gave more opportunities for legal abortion.¹⁰ All these policies likely had an impact on the individual choices, but the main goal of our study is not to estimate any policy undertaken in the Soviet Union but rather to document the overall impact of the USSR. We want to stress that the USSR coefficient captures all the consequences of the Soviet Union in a country. We also see simultaneous changes in the outcome variables as a result of the USSR. In this Section, when we discuss the findings, we want to state the intuition behind several potential channels which are definitely not unique.

First, we discuss the marriage outcomes in Columns 1 and 2 in [Table 6](#). *Panel I* shows that the USSR coefficient is always statistically significant and increases the probability of marrying over life and the number of legal marriages, Column 1 and 2, respectively. On average, people in the USSR are more likely to marry by 0.04 during life, mainly driven by men (see Column 1 in *Panel III*). This evidence is line with the Bachelor tax (also known as the tax on childlessness) that was in place in the USSR until its dissolution, but in Poland only from 1946 to 1973. For that regard, the most recent cohorts should be more affected. In [Appendix 7.B](#), [Fig. G.2](#) exactly confirms that the AMI of the USSR for men increases for the more recent cohorts, 1953-1958. However, the more extended implementation of the Bachelor tax in Lithuania than in Poland is only one possible explanation.

Despite that the chances to be married during the life did not change for women in Lithuania, the number of marriages during life increased by 0.10 compared with Poland (Column 2). This difference can be the result of women's empowerment, better education, changes in the divorce law, or the social norms about remarrying. All these factors ease the termination of an unhappy relationship. Our analysis is agnostic about the causality between any policy in the USSR and marriage choice. However, we document the correlation between simultaneous changes in labor participation and the higher probability of quitting the marriage and remarrying.

Next, we document a statistically significant decrease in the number of children by 0.18, and this fall is driven only by daughters and not sons (see Columns 3 - 5 in *Panel I*). To isolate the impact of the transition period after 1991, we restrict to children born before 1990. This finding suggests selective abortion based on the future child's gender.

There is no significant evidence about the extensive margin of the impact of the Soviet Union on the marriage and fertility history.¹¹ What mainly matters is the intensive margin of living in the USSR.

¹⁰From the first year of its foundation, the USSR was the first country that guaranteed the women's right for abortion on any ground. However, later in 1936, Stalin banned any type of pregnancy termination. Shortly after his death, women regained the right to abortion in 1955. In Poland, abortions were permitted on-demand without state control between 1956 and 1993.

¹¹The results are available upon request.

Table 6: USSR and Marriage History, Children and Later-Life Well-Being

Variables	Marriage history and the number of children						
	(1) Ever-married	(2) Number of marriages	(3) Number of children	(4) Number of daughters	(5) Number of sons	(6) Life satisfaction	(7) Life quality
<i>Panel I: Both men and women</i>							
Female	0.0226 (0.0151)	0.00779 (0.0226)	-0.0310 (0.0767)	-0.0739 (0.0609)	0.0295 (0.0628)	-0.206 (0.127)	-1.269*** (0.431)
Female × USSR	-0.0285 (0.0195)	-0.00505 (0.0359)	-0.0123 (0.108)	0.0687 (0.0830)	-0.0817 (0.0916)	0.182 (0.203)	1.299** (0.603)
USSR	0.0401** (0.0172)	0.106*** (0.0310)	-0.188** (0.0933)	-0.220*** (0.0675)	0.0237 (0.0752)	-0.702*** (0.170)	-3.228*** (0.490)
AMI of the USSR on women	0.012	0.101***	-0.201**	-0.152**	-0.058	-0.520***	-1.929***
P-value: AMI=0	0.459	0.000	0.012	0.014	0.382	0.001	0.000
R^2	0.0433	0.0385	0.119	0.0717	0.0607	0.0851	0.122
N	2252	2252	2088	2081	2081	2231	2190
<i>Panel II: Women</i>							
USSR	0.00479 (0.0175)	0.0893*** (0.0273)	-0.270*** (0.0875)	-0.179*** (0.0649)	-0.0789 (0.0795)	-0.467*** (0.156)	-1.821*** (0.519)
R^2	0.0642	0.0777	0.155	0.0999	0.0763	0.112	0.167
N	1311	1311	1226	1223	1223	1297	1275
<i>Panel III: Men</i>							
USSR	0.0428** (0.0173)	0.0971*** (0.0313)	-0.118 (0.0994)	-0.183** (0.0772)	0.0448 (0.0772)	-0.791*** (0.188)	-3.300*** (0.549)
R^2	0.0849	0.102	0.144	0.100	0.0951	0.120	0.111
N	941	941	862	858	858	934	915

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The cluster standard errors at the year and region of birth level are in parentheses. We restrict to individuals who were born from 1935 to 1958 in the former territories of Russian Empire in Lithuania and Poland. We consider only children born before 1990. In *Panel (I)* we report the estimated coefficient γ_2 from Equation 4.1, and AMI from Equation 4.2. In *Panel (II)* and *Panel (III)*, we report the estimated coefficient α^f , α^m from Equation 4.4. All regressions control for constant, a four categories of health at age 10, a mental health problem dummy at age 10, to be a good student at math dummy; five place of birth dummies: a big city, the suburbs of a big city, a large town, a small town or rural area; the features of the individual's dwelling at age 10: the number of books by age 10, the number of services, the number of rooms, and the year fixed effects.

Further, we check the impact on later-life well-being. There is evidence for overall disappointment about living in Lithuania than Poland. Columns 6 and 7 show that in the pooled analysis, the USSR coefficient is statistically significant at 1 percent level and is equal to -0.70 and -3.23 for life satisfaction and life quality, respectively. Both magnitudes get even larger when we restrict to men (see *Panel III*). So far, in our analysis, we always abstract from the transition period in Lithuania and Poland after the fall of the USSR, as we were able to restrict to events that happened before 1990. For what concerns the later-life well-being, the data do not allow us to do that. In the future, we are going directly to address this issue.

To conclude this Subsection, we want to make sure that area differences do not drive our findings. We exclude the overall USSR impact and control for region identifiers. Table 7 confirms findings in *Panel I* in Table 6.

5.F USSR and Later-Life Health

Table 7: USSR and Marriage History, Children and Later-Life Well-Being Controlling for Region Fixed Effects

Variables	Marriage history and the number of children						
	(1) Ever-married	(2) Number of marriages	(3) Number of children	(4) Number of daughters	(5) Number of sons	(6) Life satisfaction	(7) Life quality
<i>Panel I: Both men and women</i>							
Female	0.0237 (0.0151)	0.00818 (0.0226)	-0.0385 (0.0756)	-0.0827 (0.0612)	0.0318 (0.0632)	-0.199 (0.128)	-1.234*** (0.426)
Female \times USSR	-0.0304 (0.0196)	-0.00749 (0.0361)	0.0121 (0.107)	0.0942 (0.0832)	-0.0830 (0.0932)	0.132 (0.204)	1.264** (0.599)
R^2	0.0497	0.0444	0.125	0.0790	0.0665	0.0892	0.145
N	2252	2252	2088	2081	2081	2231	2190

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The cluster standard errors at the year and region of birth level are in parentheses. We restrict to individuals who were born from 1935 to 1958 in the former territories of Russian Empire in Lithuania and Poland. We consider only children born before 1990. We report the estimated coefficient γ_2 from Equation 4.1. All regressions control for constant, a four categories of health at age 10, a mental health problem dummy at age 10, to be a good student at math dummy; five place of birth dummies: a big city, the suburbs of a big city, a large town, a small town or rural area; the features of the individual's dwelling at age 10: the number of books by age 10, the number of services, the number of rooms, and the year and region fixed effects.

Table 8: USSR and Later-Life Health

Variables	Health variables					
	(1) Self-perceived health	(2) Chronic diseases	(3) ADL	(4) Mobility limitations	(5) Memory ability	(6) BMI
<i>Panel I: Both men and women</i>						
Female	-0.0117 (0.0521)	0.463*** (0.116)	0.0115 (0.0635)	0.512*** (0.155)	0.221** (0.0959)	0.109 (0.367)
Female \times USSR	-0.0291 (0.0740)	0.0346 (0.166)	0.111 (0.0965)	0.207 (0.225)	0.117 (0.145)	1.263** (0.496)
USSR	0.0267 (0.0609)	-0.315** (0.142)	0.0311 (0.0724)	-0.122 (0.182)	-0.191 (0.118)	0.00244 (0.357)
AMI of the USSR on women	-0.002	-0.281	0.142	0.085	-0.073	1.266
P-value: AMI=0	0.966	0.037	0.034	0.617	0.455	0.001
R^2	0.106	0.0960	0.112	0.171	0.184	0.0606
N	2250	2247	2225	2245	2233	2214
<i>Panel II: Women</i>						
USSR	-0.00648 (0.0555)	-0.228 (0.142)	0.157** (0.0679)	0.112 (0.177)	-0.0626 (0.0955)	1.393*** (0.389)
R^2	0.156	0.122	0.187	0.240	0.226	0.110
N	1310	1308	1290	1308	1300	1283
<i>Panel III: Men</i>						
USSR	0.00880 (0.0751)	-0.324** (0.155)	-0.0102 (0.0764)	-0.113 (0.200)	-0.164 (0.125)	-0.349 (0.349)
R^2	0.123	0.110	0.0977	0.137	0.176	0.0904
N	940	939	935	937	933	931

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The cluster standard errors at the year and region of birth level are in parentheses. We restrict to individuals who were born from 1935 to 1958 in the former territories of Russian Empire in Lithuania and Poland. In *Panel (I)* we report the estimated coefficient γ_2 from Equation 4.1, and AMI from Equation 4.2. In *Panel (II)* and *Panel (III)*, we report the estimated coefficient α^f , α^m from Equation 4.4. All regressions control for constant, a four categories of health at age 10, a mental health problem dummy at age 10, to be a good student at math dummy; five place of birth dummies: a big city, the suburbs of a big city, a large town, a small town or rural area; the features of the individual's dwelling at age 10: the number of books by age 10, the number of services, the number of rooms, and the year fixed effects.

6 Robustness Checks

In this Section, we show that our findings are robust to several tests. First, in Section 6.A, we change the definition of the USSR. Then, in Section 6.B, we amplify the sample to rule out that the results are driven by only Lithuania versus the part of Poland comparison.

6.A Definition of the USSR

So far, we assign the treatment based on respondents' region of birth. However, it might be that a person moved during life. Since we observe the full residential history, we can identify the region in which a respondent lived in any year¹² Only half of the individuals in our target sample change the region of residence during life (see Fig. E.1). Still, we also identify the region in which a person lived at age 18 (at the beginning of the working career) or lived the most of the life. These two other definitions mainly change the value for respondents in the Soviet Bloc (i.e. $Z_i = 0$), as we consider only a part of Polish regions and during the Soviet Bloc period, immigration within Poland was not restricted. Meanwhile, the value for respondents in Lithuania almost did not change, because of controlled overseas migration during the regime.¹³

In Appendix H, Table H.1 reports the results for education and working experience using two new USSR variables (*Panel II* and *Panel III*). Qualitatively, all the coefficients remain unchanged; quantitatively, the magnitudes are almost identical and within the one standard deviation interval of the original findings.

6.B The Soviet Union and the Soviet Bloc

Next, we extend our sample to study whether the Soviet Ideology had a specific impact on the former territories of the Russian Empire, or whether it is an overall change, and restricting the sample just guarantees the homogeneity in the pre-regime era. If the Soviet ideology was more effectively implemented in the Soviet Union, then we should see similar findings as before once we enlarge the sample. Accordingly, we consider Poland versus Lithuania setting and all the Soviet Bloc versus all the Baltic countries. In Appendix I, *Panel II* and *Panel III* in Table I.1 confirm the main findings. Including further regions and countries increases the sample size, but the magnitude of the USSR's total impact on women's education is always roughly 0.8 level, and the impact on women's experience by 50 gets only larger and reaches 2.4, when not accounting for schooling. Table I.2 shows that the findings of the marriage history, the number of children, and life satisfaction are also robust to enlarging the sample.

¹²By the survey construction; we can observe only individuals who resided in one of the EU countries at the moment of the survey.

¹³Almost 50 percent of our sample never changed the region of residence. So, individuals in our target sample do not move much during their lives in line with our intuition.

7 East and West Germany Comparison

Most of the literature on the impact of socialism exploits Germany’s forced division after World War II. For 41 years, a country was divided into two parts East Germany (called the German Democratic Republic) was the part of the Soviet Bloc, and West Germany (called the Federal Republic of Germany) promoted the traditional male-breadwinner society. These two systems were strikingly different for what regards the women’s questions and sex-role policies. [Becker et al. \(2020\)](#) provides a recent review of the related literature and excellent discussion on the identification assumption and possible biases in the results. One of their worries lies in the pre-determined difference between East and West Germany before the separation along with a set of variables. In particular, we consider labor force participation as an outcome; that is why we should be careful about the magnitude of our findings in this Section.

Up to our knowledge, no study has been done on the gender-specific impact of socialism in East Germany during the regime for 1935-1958 birth cohorts. As before, we start with the simultaneous impact on the educational choice and cumulative years of experience before the regime’s fall. To close the gap in the literature and validate further our findings, we strictly follow [Alesina and Fuchs-Schündeln \(2007\)](#) to divide German regions into two groups, defining an *East Germany* variable.¹⁴ [Table 9](#) reports the results. East German women get half a level more of education comparing with West German women (see Column 1 in *Panel I*), the same pattern holds for men, but the magnitude shrinks to 18 percent a level of education. These findings are in line with our benchmark setting and conclusion.

Moreover, Eastern Germans accumulate 0.4 years more of experience between 25 to 50 years. However, the impact is considerably larger, when restricting to women in East Germany, and the AMI reaches about 5.2 years of working experience by age 50 before the fall of the regime (see Columns 3 and 4 in *Panel I*). [Becker et al. \(2020\)](#) alarm about the possible upper bias in the women’s labor participation due to preexistent trends before the forced separation, but five additional years of experience are unlikely only due to the pre-trend.

The East Germany coefficient is twice larger than the USSR estimate representing the divergence between the leading ideas in West and East Germany, compared with the treatment intensity in the USSR (Lithuania) and the Soviet Bloc (Poland). The leading regime in West Germany indeed favored a one-bread winner family structure, and women were encouraged to participate exclusively in domestic production. All our findings of women’s experience become twice larger, looking at East Germany (see *Panel II*). Naturally, the impact on men

¹⁴*East Germany* is equal to one if a respondent was born in Brandenburg, Mecklenburg-Western Pomerania, Saarland, Saxonia, Saxonia-Anhalt, and Thuringia. It is equal to zero if Baden-Wuerttemberg, Bavaria, Bremen, Hamburg, Hesse, Lower Saxony, North Rhine-Westphalia, Rhineland-Palatinate, and Schleswig-Holstein. We leave out Berlin as we do not know if a respondent lived in the Eastern or Western part of the city.

Table 9: Socialism, Education and Working Experience in East and West Germany

Variables	Cumulative working experience									
	Education	No control for education			Controls for three education levels			Heterogeneity with education		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	By 25	By 50	25-50	By 25	By 50	25-50	By 25	By 50	25-50	
<i>Panel I: Both men and women</i>										
Female	-0.464*** (0.0528)	-0.0282 (0.164)	-6.272*** (0.487)	-6.244*** (0.443)	-0.466*** (0.151)	-6.447*** (0.478)	-5.981*** (0.431)			
Female × East Germany	0.312*** (0.108)	0.556* (0.290)	5.481*** (0.632)	4.925*** (0.532)	0.780*** (0.286)	5.440*** (0.643)	4.661*** (0.526)			
East Germany	0.182** (0.0734)	-0.748*** (0.215)	-0.320 (0.337)	0.428* (0.255)	-0.503** (0.203)	-0.125 (0.341)	0.378 (0.258)			
<i>Education:</i>										
Secondary					-0.232 (0.239)	1.712** (0.717)	1.944*** (0.618)			
High					-2.907*** (0.275)	-0.867 (0.726)	2.040*** (0.626)			
AMI of East Germany on women	0.494***	-0.192***	5.161***	5.352***	0.276***	5.315***	5.039***			
P-value: AMI=0	0.000	0.373	0.000	0.000	0.204	0.000	0.000			
R ²	0.247	0.165	0.444	0.515	0.294	0.463	0.520			
N	2240	2241	2241	2241	2240	2240	2240			
<i>Panel II: Women</i>										
East Germany	0.477*** (0.0783)	-0.174 (0.212)	5.093*** (0.503)	5.268*** (0.454)	0.246 (0.216)	5.026*** (0.508)	4.780*** (0.446)	-0.198 (1.204)	3.497 (2.437)	3.695 (2.351)
<i>Education:</i>										
Secondary					-0.0865 (0.276)	1.705* (0.892)	1.792** (0.780)	-0.0433 (0.281)	1.550 (0.946)	1.594* (0.823)
High					-2.693*** (0.349)	0.496 (0.966)	3.189*** (0.845)	-2.968*** (0.379)	0.428 (1.045)	3.396*** (0.926)
<i>Education × USSR:</i>										
Secondary × East Germany								0.130 (1.202)	1.728 (2.480)	1.598 (2.407)
High × East Germany								1.034 (1.257)	1.441 (2.495)	0.407 (2.381)
AMI of East Germany								0.173 (0.516)	4.885*** (0.000)	4.712*** (0.000)
P-value: AMI=0								0.516	0.000	0.000
R ²	0.280	0.149	0.271	0.293	0.264	0.277	0.306	0.268	0.277	0.307
N	1158	1158	1158	1158	1158	1158	1158	1158	1158	1158
<i>Panel III: Men</i>										
East Germany	0.199*** (0.0743)	-0.819*** (0.224)	-0.298 (0.288)	0.520*** (0.133)	-0.528*** (0.199)	0.0934 (0.257)	0.622*** (0.133)	0.371 (0.734)	0.154 (1.082)	-0.217 (0.693)
<i>Education:</i>										
Secondary					-0.994** (0.419)	-0.546 (0.690)	0.448 (0.435)	-0.684 (0.486)	-0.296 (0.819)	0.388 (0.527)
High					-3.733*** (0.436)	-4.407*** (0.719)	-0.674 (0.458)	-3.646*** (0.503)	-4.591*** (0.852)	-0.945* (0.552)
<i>Education × USSR:</i>										
Secondary × East Germany								-1.380* (0.792)	-0.913 (1.122)	0.467 (0.701)
High × East Germany								-0.483 (0.791)	0.825 (1.164)	1.308* (0.727)
AMI of East Germany								-0.548*** (0.005)	0.051 (0.836)	0.599*** (0.000)
P-value: AMI=0								0.005	0.836	0.000
R ²	0.196	0.212	0.709	0.888	0.354	0.761	0.895	0.357	0.763	0.895
N	1082	1083	1083	1083	1082	1082	1082	1082	1082	1082

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The cluster standard errors at the year and region of birth level are in parentheses. We restrict to individuals who were born from 1935 to 1958 in Germany excluding Berlin. East Germany is equal to one if a respondent was born in Brandenburg, Mecklenburg-Western Pomerania, Saarland, Saxonia, Saxonia-Anhalt, and Thuringia. It is equal to zero if Baden-Wuerttemberg, Bavaria, Bremen, Hamburg, Hesse, Lower Saxony, North Rhine-Westphalia, Rhineland-Palatinate, and Schleswig-Holstein. In *Panel (I)* we report the estimated coefficient γ_2 from Equation 4.1, and AMI from Equation 4.2. In *Panel (II)* and *Panel (III)*, we report the estimated coefficient α^f , α^m from Equation 4.4, and AMI from Equation 4.12. All regressions control for constant, a four categories of health at age 10, a mental health problem dummy at age 10, to be a good student at math dummy; five place of birth dummies: a big city, the suburbs of a big city, a large town, a small town or rural area; the features of the individual's dwelling at age 10: the number of books by age 10, the number of services, the number of rooms, and the year fixed effects.

almost does not change from the previous setting (see *Panel III*).

In Appendix J Table J.1 reports the results about marriage and fertility history before 1990. The Socialist regime decreased by 0.2 the number of daughters; this impact is statistically significant at 1 percent level in the pooled sample and women's subsample. This finding is in line with the selective abortion as in Lithuania versus Poland comparison.

8 Conclusion

In this paper, we find a significant impact of the Soviet Union on schooling, labor decisions, demographic choices, and later-life outcomes. This analysis uses the recently available retrospective SHARELIFE data (2017) and derived from it the SHARE Job Episode Panel. Also, we link early-life events with later-life variables from SHARE's main module. The target sample includes individuals born from 1935 to 1950 and their individual choices from 1950 to 1990.

Our identification exploits the fact that Lithuania became the part of the USSR and not the Soviet Bloc due to exogenous factors that are unrelated to the outcome variables relevant to this study. In particular, the treatment is being in the USSR (Lithuania) and the control group includes Poland, a country that was in the Soviet Bloc. Our identification relies on the similarity between the former territories of the Russian Empire in Lithuania and Poland. One of the distinguishing features of the Soviet Ideology is equal-gender role policies and full employment target. Being in the USSR made Lithuanians increase individual educational attainment and cumulative working experience. Moreover, we document the underlying gender-specific channel that increased women's participation in the USSR through the higher educational incentives, as can be referred to as a cascade impact of the schooling availability and work opportunities on women's labor participation. Next, we find a higher number of marriages during life and evidence for selective abortion based on the future child's gender. Finally, there is evidence about lower life satisfaction about living in the USSR than in the Soviet Bloc.

Apart from studying the impact of the Soviet Union on individual choices directly, we also want to exploit the unique environment created due to the regime. Nowadays, there are still some countries struggling to bring more women to the labor market. In this paper, we want to highlight one of the Soviet Union's results: the combination of educational and job opportunities is necessary to attract more women to the labor market. By any means, we do not claim that it is beneficial for a country to copy the same economic-political system from the USSR, or that the Soviet Union policies are necessary and unique to achieve this goal. However, the sole availability of education and vague job opportunities likely generate a smaller boost in women's participation. We argue that it is essential that future policymakers take it into account to increase the efficiency of future policies to promote working choices among women.

The other important implication of this paper is the critical distinguishment between the Soviet exposure between Lithuania and Poland for more than 40 years. Up to our knowledge, this notable difference in the political-economic regime is little pronounced in the literature, and often, researchers pool all Eastern European countries together for what regards the Soviet inheritance. Within post-Soviet countries, there are Baltic countries that were the

part of the Soviet Union, along with other countries which formed the Soviet Bloc. We argue that contemporaneous policies should be tailored to the historical context and not ignore the different Socialist regimes implemented in these countries.

In the future version, we are going to reinforce the argument on the area similarity by looking at the interwar statistics and the number of combats in Lithuania and Poland. In the Identification, we are going to run a placebo study (similar to a permutation test in [Lippmann and Senik \(2018\)](#), [Lippmann et al. \(2020\)](#)). Regarding the impact of the USSR on well-being, we are going to explore the economic difference in the transition period in the two countries.

References

- Adam, Jan (1984) *Employment and Wage Policies in Poland, Czechoslovakia and Hungary since 1950*
- Alesina, Alberto, and Nicola Fuchs-Schündeln (2007) ‘Good-bye Lenin (or not?): The effect of communism on people’s preferences.’ *American Economic Review* 97(4), 1507–1528
- Atkinson, Dorothy, Alexander Dallin, and Gail Warshofsky Lapidus (1977) *Women in Russia* (Stanford University Press)
- Beblo, Miriam, and Luise Görge (2018) ‘On the nature of nurture. The malleability of gender differences in work preferences.’ *Journal of Economic Behavior and Organization* 151, 19–41
- Becker, Sascha O., Lukas Mergele, and Ludger Woessmann (2020) ‘The separation and reunification of Germany: Rethinking a natural experiment interpretation of the enduring effects of communism.’ *Journal of Economic Perspectives* 34(2), forthcoming
- Brugiavini, A., C. E. Orso, M. G. Genie, R. Naci, and G. Pasini (2019) ‘Combining the retrospective interviews of wave 3 and wave 7: the third release of the SHARE Job Episodes Panel’
- Brunello, Giorgio, Daniele Fabbri, and Margherita Fort (2013) ‘The causal effect of education on body mass: Evidence from Europe.’ *Journal of Labor Economics* 31(1), 195–223
- Bukowski, Paweł (2019) ‘How history matters for student performance. lessons from the Partitions of Poland.’ *Journal of Comparative Economics* 47(1), 136–175
- Campa, Pamela, and Michel Serafinelli (2019) ‘Politico-economic regimes and attitudes: Female workers under state socialism.’ *Review of Economics and Statistics* 101(2), 233–248
- Crespo, Laura, Borja López-Noval, and Pedro Mira (2014) ‘Compulsory schooling, education, depression and memory: New evidence from SHARELIFE.’ *Economics of Education Review* 43, 36–46
- Duflo, Esther (2012) ‘Women empowerment and economic development.’ *Journal of Economic Literature* 50(4), 1051–1079
- European Commission (2014) *25 years after the fall of the Iron Curtain. The state of integration of East and West in the European Union*
- Fort, Margherita, Nicole Schneeweis, and Rudolf Winter-Ebmer (2016) ‘Is Education Always Reducing Fertility? Evidence from Compulsory Schooling Reforms.’ *Economic Journal* 126(595), 1823–1855

- Fuchs-Schündeln, Nicola, and Matthias Schündeln (2020) ‘The long-term effects of communism in Eastern Europe.’ *Journal of Economic Perspectives* 34(2), 172–191
- Fuchs-Schündeln, Nicola, and Paolo Masella (2016) ‘Long-lasting effects of socialist education.’ *Review of Economics and Statistics* 98(3), 428–441
- Goldstein, Joshua R., and Michael Kreyenfeld (2011) ‘Has East Germany overtaken West Germany? Recent trends in order-specific fertility.’ *Population and Development Review* 37(3), 453–472
- Gregg, Amanda G. (2020) ‘Factory productivity and the concession system of incorporation in late imperial Russia, 1894-1908.’ *American Economic Review* 110(2), 401–427
- Grosfeld, Irena, Alexander Rodnyansky, and Ekaterina Zhuravskaya (2013) ‘Persistent anti-market culture: A legacy of the pale of settlement after the holocaust.’ *American Economic Journal: Economic Policy* 5(3), 189–226
- Grosfeld, Irena, and Ekaterina Zhuravskaya (2015) ‘Cultural vs. economic legacies of empires: Evidence from the partition of Poland.’ *Journal of Comparative Economics* 43(1), 55–75
- Guriev, Sergei, and Ekaterina Zhuravskaya (2009) ‘(Un)Happiness in Transition.’ *Journal of Economic Perspectives* 23(2), 143–168
- Guriev, Sergei, and Nikita Melnikov (2018) ‘Happiness convergence in transition countries.’ *Journal of Comparative Economics* 46(3), 683–707
- Havari, Enkelejda, and Fabrizio Mazzonna (2015) ‘Can We Trust Older People’s Statements on Their Childhood Circumstances? Evidence from SHARELIFE.’ *European Journal of Population* 31(3), 233–257
- Kessler, Gijs, and Andrei Markevich (2019) ‘Electronic Repository of Russian Historical Statistics, 18th - 21st centuries.’ <https://ristat.org/>
- Kesternich, Iris, Bettina Siflinger, James P. Smith, and Joachim K. Winter (2014) ‘The effects of world war ii on economic and health outcomes across Europe.’ *Review of Economics and Statistics* 96(1), 103–118
- Klüsener, Sebastian, and Joshua R Goldstein (2014) ‘A Long-Standing Demographic East – West.’ *Population, Space and Place* 22(1), 5–22
- Lapidus, Gail Warshofsky (1978) *Women in Soviet Society: Equality, Development, and Social Change* (Univ of California Press)

- Lippmann, Quentin, Alexandre Georgieff, and Claudia Senik (2020) ‘Undoing Gender with Institutions: Lessons from the German Division and Reunification.’ *Economic Journal*, *forthcoming*
- Lippmann, Quentin, and Claudia Senik (2018) ‘Math, girls and socialism.’ *Journal of Comparative Economics* 46(3), 874–888
- Markevich, Andrei, and Ekaterina Zhuravskaya (2018) ‘The economic effects of the abolition of serfdom: Evidence from the Russian Empire.’ *American Economic Review* 108(4-5), 1074–1117
- Sablin, Ivan, Aleksandr Kuchinskiy, Aleksandr Korobeinikov, Sergey Mikhaylov, Oleg Kudinov, Yana Kitaeva, Pavel Aleksandrov, Maria Zimina, and Gleb Zhidkov (2015) ‘Transcultural Empire: Geographic Information System of the 1897 and 1926 General Censuses in the Russian Empire and Soviet Union.’ *HeiDATA: Heidelberg Research Data Repository [Distributor]*
- Wyrwich, Michael (2019) ‘Historical and current spatial differences in female labour force participation: Evidence from Germany.’ *Papers in Regional Science* 98(1), 211–239

A Additional Evidence on Similarity between Lithuania and Poland

1.A Relevant Districts

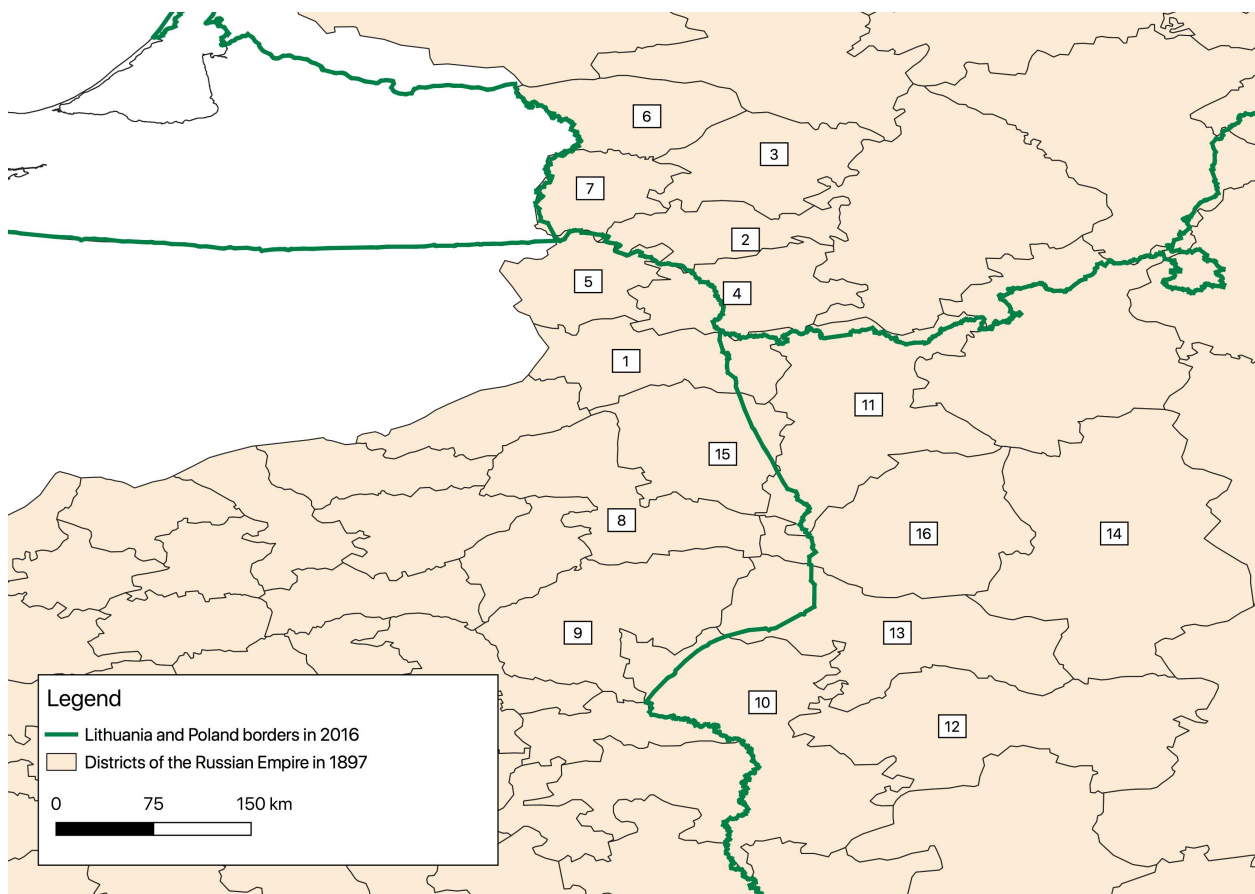


Fig. A.1. Illustration of the identification assumption

Note: *Suvalskaia province:* 1 - Avgustovskiy; 2 - Kalvarskiy; 3 - Mariampolskiy; 4 - Seinskiy; 5 - Suvalskiy; 6 - Vladislavovskiy; 7 - Volkovyshskiy; *Grodnenskaia province:* 8 - Belostokskiy; 9 - Belskiy; 10 - Brestskiy; 11 - Grondenskiy; 12 - Kobrinskiy; 13 - Pruzhanskiy; 14 - Slonimskiy; 15 - Sokolskiy; 16 - Volkovskiy. Suvalskaia province was a part of Vistula Land in 1897, Grodnenskaia province was a part of Vilna Governorate-General in 1897.

Source: GIS map of country borders in 2016 comes from Eurostat, GISCO. GIS map of the Russian Empire by districts comes from [Kessler and Markevich \(2019\)](#).

1.B Labor Information

Table A.1: Labor Information in 1897

Province	Percent of women working in ¹								Percent of men working in ¹							
	Undefined	Capital owners	Sellers	Agric.	Manufac.	Services	Other	100 %	Undefined	Capital owners	Sellers	Agric.	Manufac.	Services	Other	100 %
<i>Panel I: Vilna Governorate-General</i>																
<i>Grodnenskaia</i>	14.0	2.5	5.5	26.9	17.4	30.7	3.0	100.0	4.2	0.8	3.4	52.5	12.4	21.4	5.2	100.0
<i>Kovenskaia</i>	20.2	2.0	2.2	49.1	9.1	15.7	1.6	100.0	7.3	1.2	2.9	60.8	9.5	13.1	5.2	100.0
<i>Vilenskaia</i>	17.6	2.6	3.0	34.0	11.4	28.0	3.4	100.0	5.6	0.9	2.7	60.9	10.4	13.0	6.6	100.0
Lithuania	17.3	2.4	3.6	36.7	12.6	24.8	2.7	100.0	5.7	0.9	3.0	58.1	10.8	15.8	5.7	100.0
<i>Panel II: Vistula Land</i>																
<i>Varshavskaia</i>	17.5	3.8	3.2	15.7	14.7	42.5	2.5	100.0	9.3	1.6	5.2	27.6	20.7	27.2	8.4	100.0
<i>Kalishskaia</i>	16.4	2.3	1.3	46.3	6.2	26.1	1.3	100.0	7.5	1.6	2.9	58.8	14.7	11.3	3.2	100.0
<i>Keletskaia</i>	11.1	1.6	1.9	54.6	2.6	27.1	1.2	100.0	4.4	1.1	4.2	65.3	9.3	11.9	3.8	100.0
<i>Liublinskaia</i>	13.5	1.8	2.2	43.7	5.0	31.8	2.1	100.0	4.7	0.8	3.3	55.2	10.3	21.2	4.7	100.0
<i>Lomzhinskaia</i>	17.5	2.2	2.2	43.1	5.9	27.0	2.1	100.0	5.6	1.0	2.7	51.3	8.6	27.3	3.5	100.0
<i>Petrokovskaia</i>	12.8	2.2	1.7	17.2	28.9	34.3	2.9	100.0	8.1	1.6	4.3	30.8	30.6	12.9	11.9	100.0
<i>Plotskaia</i>	22.5	3.5	1.2	42.0	3.4	26.0	1.3	100.0	10.4	2.2	2.3	51.7	9.9	20.3	3.4	100.0
<i>Radomskaia</i>	14.4	1.9	2.4	47.5	3.1	29.1	1.7	100.0	5.5	1.1	3.9	59.6	12.6	12.3	5.1	100.0
<i>Sedletskaia</i>	14.7	2.1	1.9	43.6	3.8	31.1	2.8	100.0	4.6	1.0	3.0	60.0	10.5	15.8	5.2	100.0
<i>Suvalskaia</i>	13.4	1.7	0.7	60.9	4.2	17.5	1.5	100.0	5.8	1.2	1.6	60.8	7.3	18.9	4.4	100.0
Poland	15.4	2.3	1.9	41.5	7.8	29.2	1.9	100.0	6.6	1.3	3.3	52.1	13.4	17.9	5.3	100.0

Sources: The original data source is the Russian Imperial Census 1897. Data come from RISTAT: Electronic Repository of Russian Historical Statistics <https://ristat.org>.

See Kessler and Markevich (2019) for details.

¹ This percent is defined to all employed women or men respectively.

1.C *Factories and Industries*

Table A.2: Industrial Composition in 1908

Province / District (Id)	Animal	Chemicals	Cotton	Flax /hemp/jute	Foods	Metals/ Machines	Mineral Products	Mixed Materials	Paper	Silk	Wood	Wool	Missing information	100 %
Panel I: Lithuania in 2016														
Vilna Governorate-General:														
Kovenskaia	7.5	4.0		0.9	31.6	18.7	7.7	3.1	13.9		10.5	1.0	1.2	100.0
Vilenskaia	13.4	1.0	1.0		40.1	8.4	8.7	1.0	13.0		12.0	1.3	0.0	100.0
Vistula Land:														
<i>Suvalskaia:</i>	16.7				30.6		20.8				50.0		0.0	100.0
Kalvarskiy (2)	16.7				33.3		16.7				33.3		0.0	100.0
Mariampolskiy (3)					25.0		25.0				50.0		0.0	100.0
Vladislavovskiy (6)					33.3						66.7		0.0	100.0
Volkovyshskiy (7)	36.4				18.2	18.2	18.2				9.1		0.0	100.0
Lithuania	12.5	2.5	1.0	0.9	34.1	13.5	12.4	2.1	13.5		24.2	1.2	0.0	100.0
Panel II: Poland in 2016														
Vistula Land:														
Varshavskaia	9.3	5.1	1.4	0.4	11.3	28.6	11.0	10.0	13.6	0.4	8.6	0.4	0.0	100.0
Kalishskaia	4.3	1.5	3.7		30.7	9.2	7.4	9.5	4.0		10.4	17.5	1.8	100.0
Keletskaia	0.5	1.6		0.5	37.4	18.4	14.2		7.9		18.9		0.5	100.0
Liublinskaia	3.8	1.5			31.8	34.8	9.1		2.3		12.1	1.5	3.0	100.0
Lomzhinskaia	9.8	0.5	2.0		23.5	7.4	18.1	4.4	16.7		13.2	3.9	0.5	100.0
Petrokovskaia	3.0	2.6	17.2	1.3	4.7	7.9	10.9	5.2	4.3	1.7	6.3	34.8	0.0	100.0
Plotskaia	5.3				38.8	10.5	10.5		4.6		27.0		3.3	100.0
Radomskaia	30.2	5.1			10.9	13.8	12.9	1.6	6.8		13.8	3.2	1.6	100.0
Sedletskaia	18.4	4.8			17.7	10.2	12.9		10.2		22.4		3.4	100.0
<i>Suvalskaia:</i>	35.0				40.0	31.7	6.7				20.0		0.0	100.0
Avgustovskiy (1)	16.7				50.0						33.3		0.0	100.0
Seinskiy (4)					50.0	50.0							0.0	100.0
Suvalskiy (5)	53.3				20.0	13.3	6.7				6.7		0.0	100.0
Vilna Governorate-General:														
<i>Grodzenskaia:</i>	25.5		0.5	0.5	6.2	5.2	9.3	1.4	0.5	1.4	22.0	39.0	0.0	100.0
Belostokskiy (8)	5.2		0.5	0.5	1.9	5.2	2.8	1.4	0.5	1.4	1.9	78.8	0.0	100.0
Belskiy (9)	2.6				10.5		15.8				57.9	13.2	0.0	100.0
Sokolskiy (15)	68.8										6.2	25.0	0.0	100.0
Poland	12.3	2.5	7.6	0.9	26.2	16.0	11.4	5.2	7.1	1.7	16.0	12.2	0.0	100.0

Sources: Data come from the Imperial Russian Factory Database developed by [Gregg \(2020\)](#). District Id corresponds with Fig. A.1.

* Information about Lithuania and Poland correspond with averages across corresponding provinces.

1.D Geographical Similarity between Lithuania and Poland

Table A.3: Geographical Characteristics of Lithuania and Poland

Province	Elevation	Temperature		Cloudiness		Precipitation		Actual evaporation		Potential evaporation	
		January	July	January	July	January	July	January	July	January	July
Panel I: Lithuania in 2016:											
Vilna Governorate-General:											
Kovenskaia	83.68	-5.13	17.19	19.14	37.54	44.71	85.79	2.50	95.07	2.50	95.07
Vilenskaia	154.88	-5.82	17.64	17.35	39.35	41.76	89.18	3.00	98.47	3.00	98.47
Vistula Land:											
Swalskaia	85.40	-4.88	17.52	17.80	38.40	43.40	93.20	3.00	97.40	3.00	97.40
!!Lithuania	125.08	-5.31	17.74	17.72	39.88	41.91	84.85	3.25	97.49	3.25	99.54
Panel II: Poland in 2016:											
Vistula Land:											
Varshavskaia	98.33	-3.40	19.03	18.83	42.83	22.67	83.17	5.00	75.33	5.00	107.33
Kalishskaia	106.75	-2.50	18.52	18.75	42.25	22.25	95.00	5.25	82.75	5.25	105.25
Keletskaia	263.00	-3.00	18.60	19.00	43.00	31.00	102.00	6.00	104.00	6.00	107.00
Liublinskaia	173.33	-4.07	18.67	19.33	44.33	31.67	93.33	5.33	95.00	5.33	108.00
Lomzhinskaia											
Petrokovskaia	143.25	-2.85	18.55	18.25	41.50	21.75	97.25	5.25	84.00	5.25	105.00
Plotskaia	143.00	-3.30	18.00	19.00	42.00	29.00	97.00	4.00	89.00	4.00	103.00
Radomskaia	150.00	-3.30	19.10	19.00	44.00	24.00	97.00	6.00	88.00	6.00	109.00
Sedletskaia	125.00	-4.55	18.70	16.00	44.50	34.00	77.50	4.50	81.00	4.50	108.00
Swalskaia	85.40	-4.88	17.52	17.80	38.40	43.40	93.20	3.00	97.40	3.00	97.40
Vilna Governorate-General:											
Grodnenskaia	136.67	-4.97	18.38	16.67	42.75	39.25	79.58	4.25	98.92	4.25	105.08
!!Poland	143.12	-3.54	18.52	18.44	42.54	28.86	92.83	4.93	88.50	4.93	105.55

Sources: Data come from Grosfeld and Zhuravskaya (2015). In Appendix Table A5 and A6 they describe each variable and show the descriptive statistics. The original data source that Grosfeld and Zhuravskaya (2015) use is Global GIS dataset.

B Year of Birth

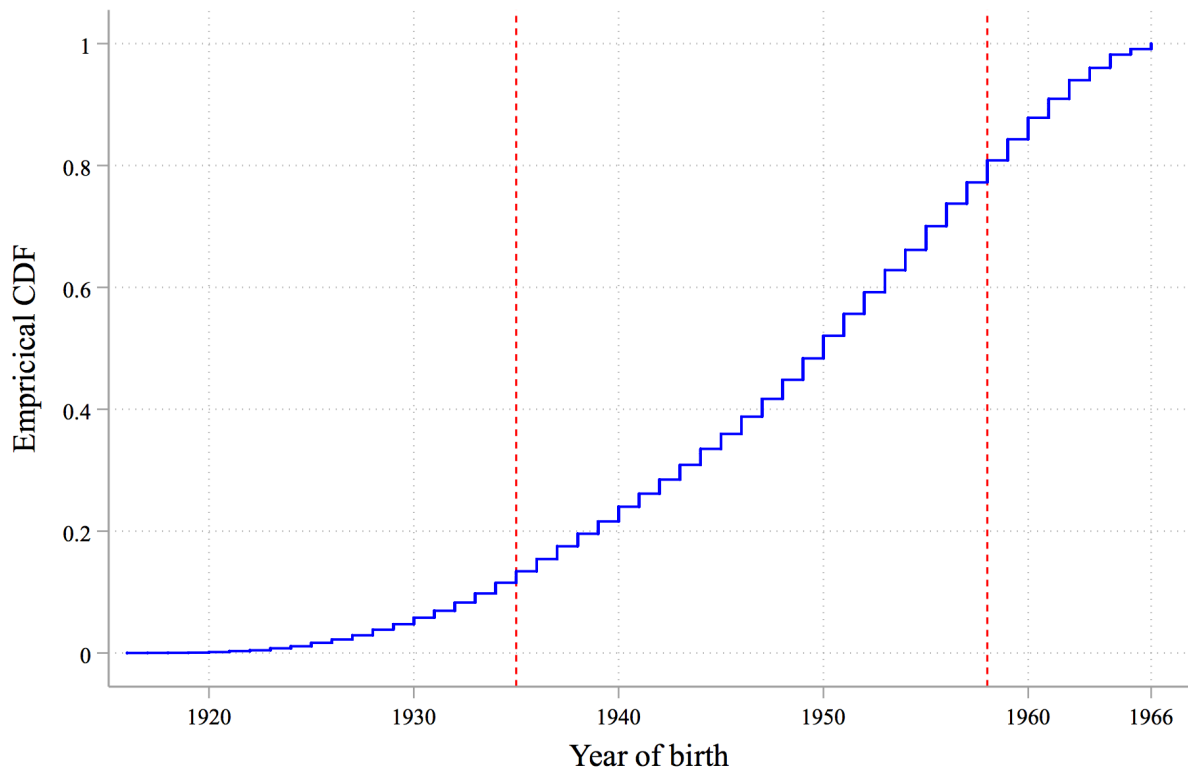


Fig. B.1. The Empirical Cumulative Distribution of the Year of Birth of the SHARE Respondents

C Area under the Analysis



Fig. C.1. Modern Poland and Lithuania borders and the provinces of the Russian Empire
Note: 2903 - Lublin Voivodeship; 2905 - Łódz Voivodeship; 2907 - Masovian Voivodeship; 2910 - Podlaskie Voivodeship; 2913 - Swietokrzyskie Voivodeship.
Source: GIS map of country borders in 2016 comes from Eurostat, GISCO. GIS map of the Russian Empire by province comes from [Sablin et al. \(2015\)](#).

D Educational Attainment

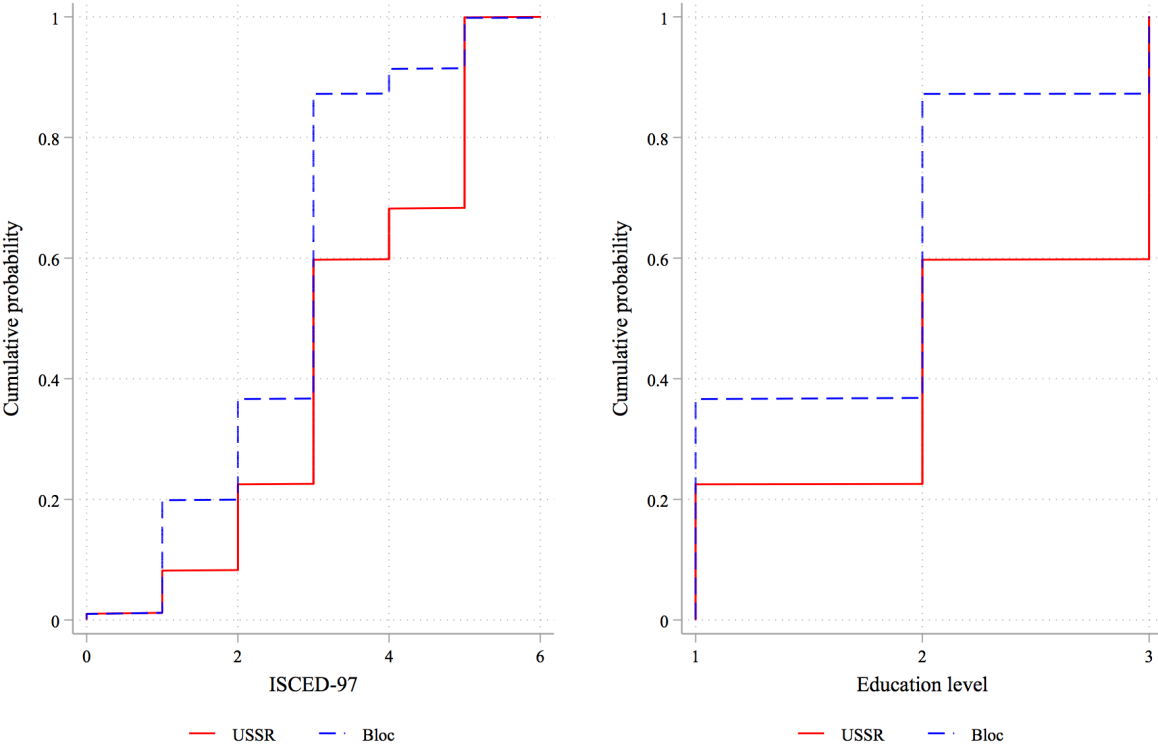


Fig. D.1. Educational Attainment

E Geographical Mobility

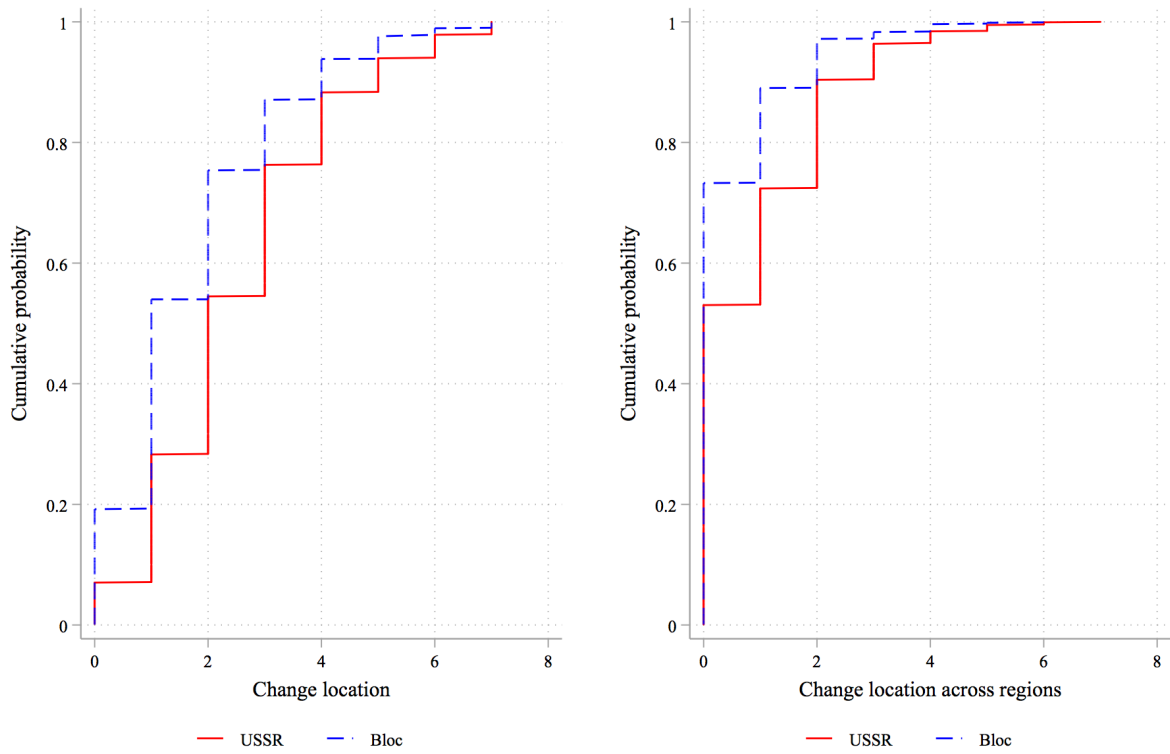


Fig. E.1. Change of Residence during the Life

F Heterogeneity with Education

6.A Three Education Groups

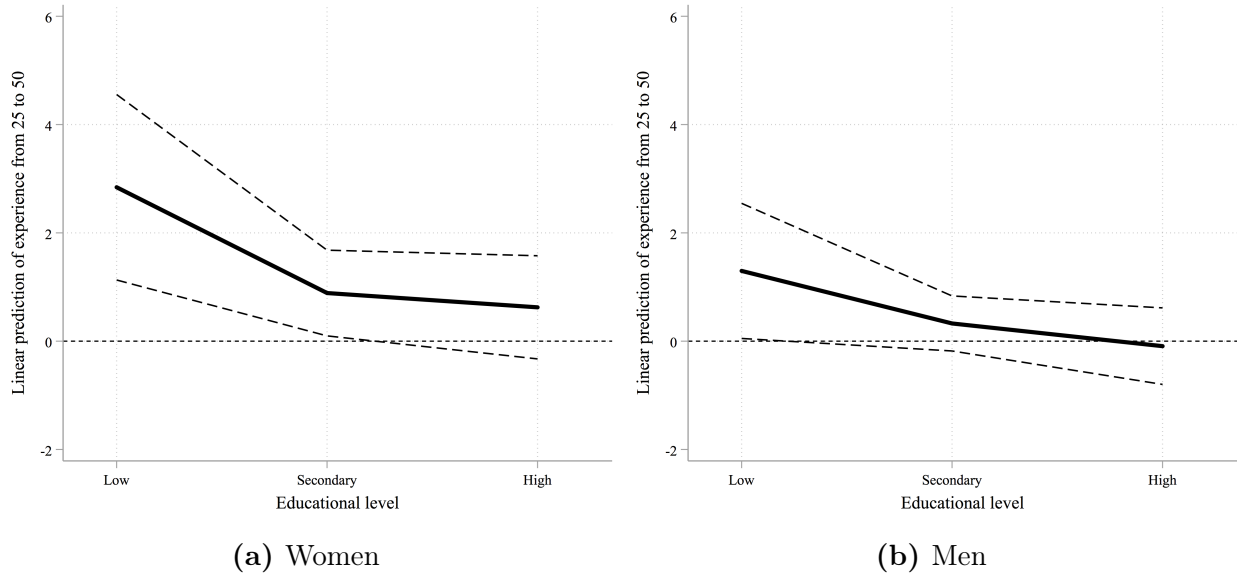


Fig. F.1. AMI of the USSR on Experience from 25 to 50 across Three Education Groups by Gender

6.B Seven Education Groups

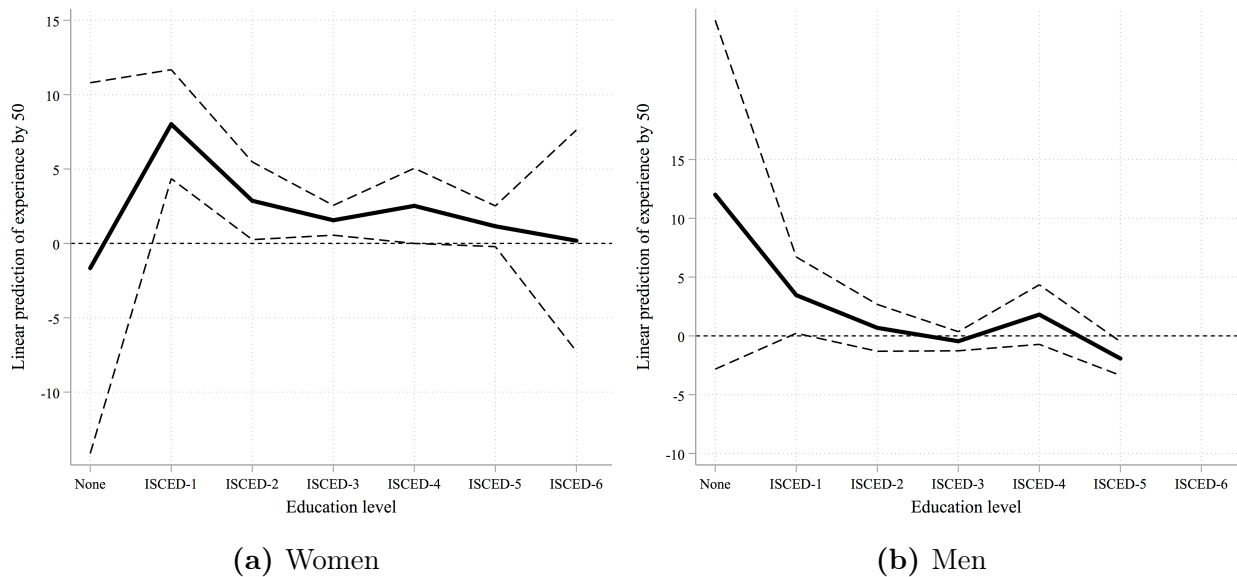


Fig. F.2. AMI of the USSR on Experience by age 50 across Seven Education Groups by Gender

6.C On Education across the Place of Birth

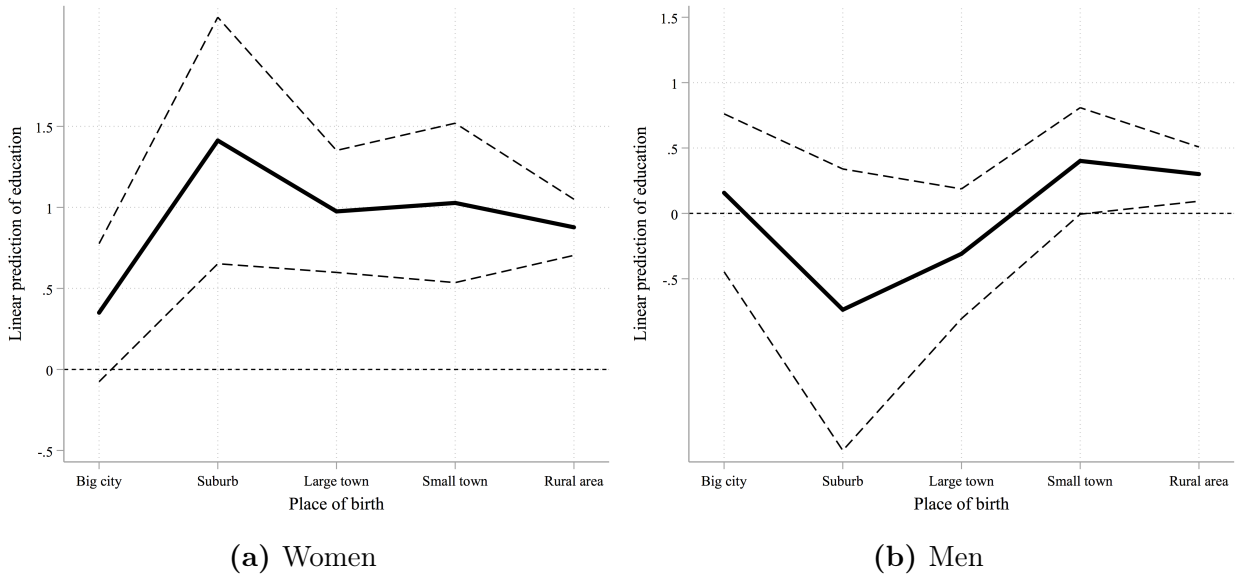


Fig. F.3. AMI of the USSR on Education across the Place of Birth by Gender

G Extensive Margin of the Impact of the USSR

7.A On Experience from 25 to 50 across Birth Cohorts

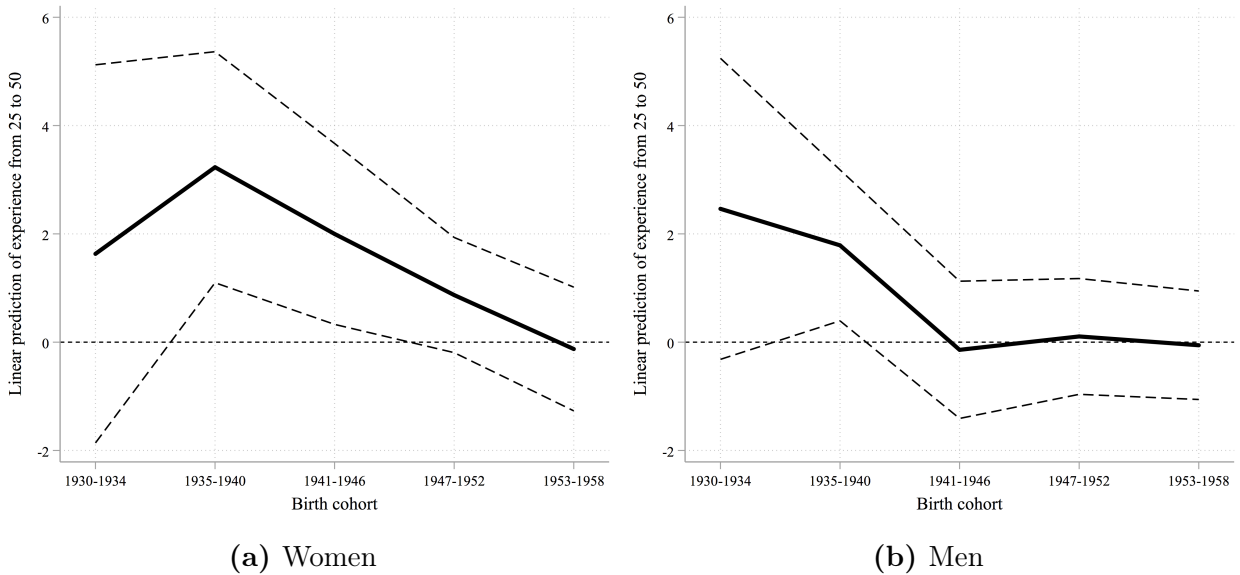


Fig. G.1. AMI of the USSR on Experience from 25 to 50 across Birth Cohorts by Gender

7.B On Marrying across the Year of Birth

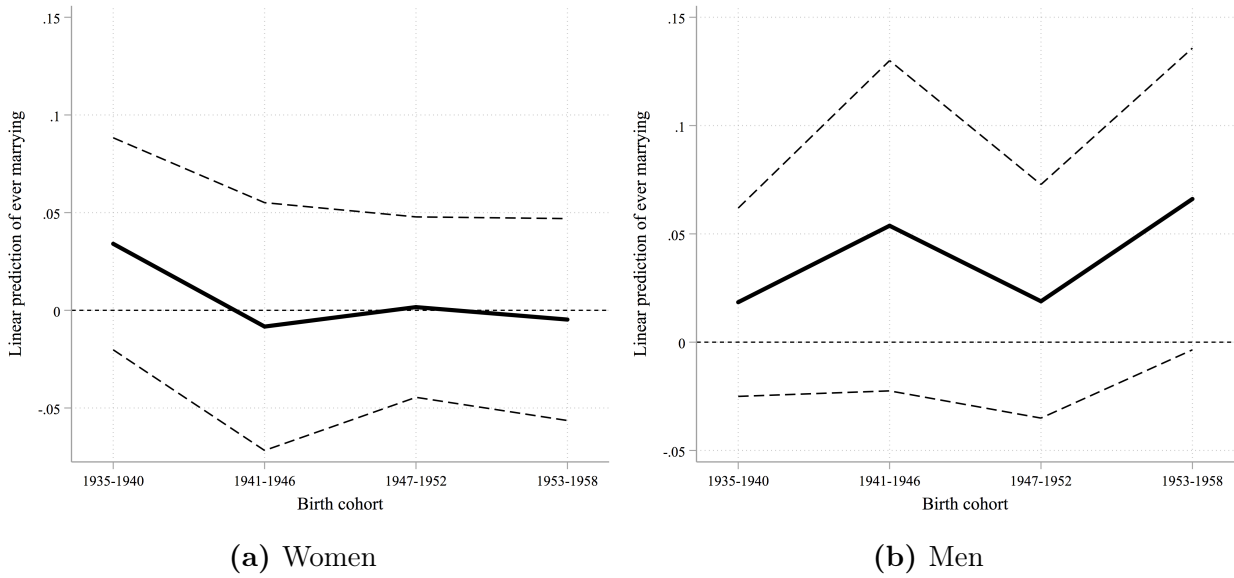


Fig. G.2. AMI of the USSR on Marrying across Birth Cohorts by Gender

7.C On the Number of Children across the Year of Birth

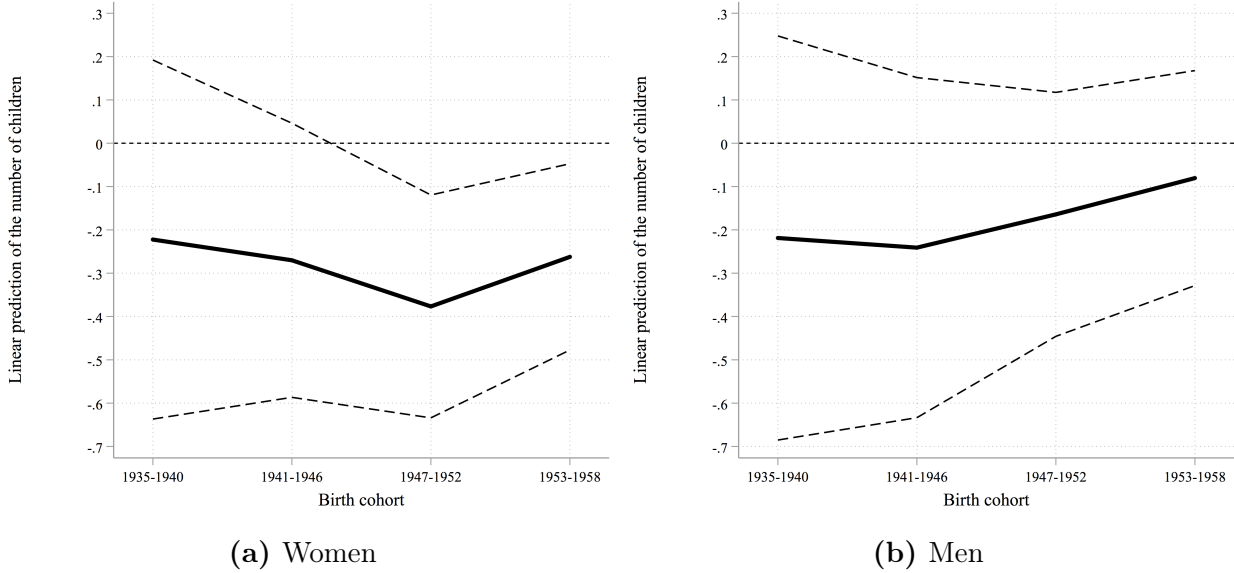


Fig. G.3. AMI of the USSR on the Number of Children across Birth Cohorts by Gender

H Robustness Checks to the Definition of the USSR

Table H.1: USSR, Education and Working Experience using Different Definition of the USSR

	Education	Cumulative working experience					
		No control for education			Controls for three education levels		
		(1)	(2)	(3)	(4)	(5)	(6)
	By 25	By 50	25-50	By 25	By 50	25-50	
<i>Panel I: The region of birth</i>							
Female	-0.332*** (0.0656)	-0.567*** (0.213)	-2.261*** (0.462)	-1.694*** (0.321)	-0.715*** (0.206)	-2.238*** (0.444)	-1.523*** (0.307)
Female × USSR	0.554*** (0.107)	1.270*** (0.290)	2.316*** (0.570)	1.045*** (0.389)	1.598*** (0.275)	2.463*** (0.553)	0.866** (0.380)
USSR	0.256*** (0.0823)	-0.729*** (0.203)	-0.313 (0.358)	0.416* (0.245)	-0.468** (0.204)	-0.0529 (0.367)	0.415* (0.247)
<i>Education:</i>							
Secondary					-0.311 (0.227)	1.189** (0.575)	1.500*** (0.446)
High					-2.051*** (0.329)	-0.527 (0.639)	1.524*** (0.431)
AMI of the USSR on women	0.809	0.542	2.003	1.461	1.130	2.410	1.281
P-value: AMI=0	0.000	0.010	0.000	0.000	0.000	0.000	0.000
R ²	0.328	0.0794	0.383	0.535	0.113	0.388	0.542
N	2250	2252	2252	2252	2250	2250	2250
<i>Panel II: The region at age 18</i>							
Female	-0.289*** (0.0646)	-0.466** (0.209)	-2.058*** (0.445)	-1.592*** (0.311)	-0.596*** (0.203)	-2.062*** (0.428)	-1.466*** (0.297)
Female × USSR	0.519*** (0.106)	1.143*** (0.280)	2.090*** (0.553)	0.948** (0.386)	1.480*** (0.265)	2.299*** (0.539)	0.819** (0.380)
USSR	0.300*** (0.0852)	-0.734*** (0.204)	-0.267 (0.355)	0.467* (0.242)	-0.440** (0.204)	-0.00417 (0.367)	0.436* (0.251)
<i>Education:</i>							
Secondary					-0.312 (0.231)	0.998* (0.575)	1.310*** (0.439)
High					-2.191*** (0.311)	-0.924 (0.608)	1.267*** (0.421)
AMI of the USSR	0.819	0.408	1.823	1.415	1.039	2.294	1.255
P-value: AMI=0	0.000	0.060	0.000	0.000	0.000	0.000	0.000
R ²	0.338	0.0927	0.392	0.541	0.131	0.397	0.547
N	2190	2192	2192	2192	2190	2190	2190
<i>Panel III: The region in which lived the most</i>							
Female	-0.232*** (0.0675)	-0.410* (0.223)	-1.905*** (0.500)	-1.495*** (0.356)	-0.520** (0.214)	-1.925*** (0.481)	-1.405*** (0.344)
Female × USSR	0.475*** (0.103)	1.086*** (0.292)	2.026*** (0.593)	0.940** (0.416)	1.397*** (0.274)	2.223*** (0.571)	0.825** (0.407)
USSR	0.367*** (0.0796)	-0.773*** (0.208)	-0.0789 (0.383)	0.694*** (0.256)	-0.432** (0.209)	0.208 (0.395)	0.640** (0.263)
<i>Education:</i>							
Secondary					-0.333 (0.230)	0.783 (0.565)	1.117*** (0.428)
High					-2.174*** (0.340)	-0.974 (0.653)	1.199*** (0.444)
AMI of the USSR	0.842	0.313	1.947	1.634	0.965	2.430	1.465
P-value: AMI=0	0.000	0.158	0.000	0.000	0.000	0.000	0.000
R ²	0.335	0.0979	0.379	0.520	0.134	0.382	0.524
N	2183	2185	2185	2185	2183	2183	2183

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The cluster standard errors at the year and region of birth level are in parentheses. We restrict to individuals who were born from 1935 to 1958 in the former territories of Russian Empire in Lithuania and Poland. In *Panel (I)* we report the estimated coefficient γ_2 from [Equation 4.1](#), and *AMI* from [Equation 4.2](#). In *Panel (II)* and *Panel (III)*. All regressions control for constant, a four categories of health at age 10, a mental health problem dummy at age 10, to be a good student at math dummy; five place of birth dummies: a big city, the suburbs of a big city, a large town, a small town or rural area; the features of the individual's dwelling at age 10: the number of books by age 10, the number of services, the number of rooms, and the year fixed effects.

I The USSR and the Soviet Bloc

Table I.1: USSR, Education and Working Experience in the USSR and the Soviet Bloc

	Education	Cumulative working experience					
		No control for education			Controls for three education levels		
		(1)	(2)	(3)	(4)	(5)	(6)
		By 25	By 50	25-50	By 25	By 50	25-50
<i>Panel I: Former territories of the Russian Empire in Lithuania and Poland</i>							
Female	-0.332*** (0.0656)	-0.585*** (0.213)	-2.287*** (0.463)	-1.702*** (0.322)	-0.715*** (0.206)	-2.238*** (0.444)	-1.523*** (0.307)
Female × USSR	0.554*** (0.107)	1.290*** (0.290)	2.344*** (0.571)	1.054*** (0.389)	1.598*** (0.275)	2.463*** (0.553)	0.866** (0.380)
USSR	0.256*** (0.0823)	-0.734*** (0.204)	-0.319 (0.359)	0.415* (0.246)	-0.468** (0.204)	-0.0529 (0.367)	0.415* (0.247)
<i>Education:</i>							
Secondary					-0.311 (0.227)	1.189** (0.575)	1.500*** (0.446)
High					-2.051*** (0.329)	-0.527 (0.639)	1.524*** (0.431)
AMI of the USSR on women	0.809	0.556	2.025	1.468	1.130	2.410	1.281
P-value: AMI=0	0.000	0.009	0.000	0.000	0.000	0.000	0.000
R ²	0.328	0.0790	0.382	0.534	0.113	0.388	0.542
N	2250	2250	2250	2250	2250	2250	2250
<i>Panel II: Only Lithuania and Poland</i>							
Female	-0.309*** (0.0420)	-0.847*** (0.124)	-3.341*** (0.299)	-2.494*** (0.231)	-0.952*** (0.120)	-3.228*** (0.285)	-2.277*** (0.216)
Female × USSR	0.537*** (0.0912)	1.524*** (0.228)	3.396*** (0.434)	1.871*** (0.303)	1.818*** (0.215)	3.430*** (0.423)	1.612*** (0.292)
USSR	0.323*** (0.0714)	-1.060*** (0.172)	-0.437 (0.293)	0.622*** (0.199)	-0.783*** (0.168)	-0.241 (0.296)	0.542*** (0.202)
<i>Education:</i>							
Secondary					0.0195 (0.156)	1.815*** (0.387)	1.795*** (0.296)
High					-1.802*** (0.213)	0.250 (0.462)	2.052*** (0.335)
AMI of the USSR on women	0.860	0.465	2.959	2.494	1.035	3.189	2.154
P-value: AMI=0	0.000	0.006	0.000	0.000	0.000	0.000	0.000
R ²	0.277	0.0645	0.348	0.474	0.101	0.358	0.487
N	3992	3992	3992	3992	3992	3992	3992
<i>Panel III: Former USSR and former Soviet Bloc</i>							
Female	-0.320*** (0.0266)	-0.535*** (0.0917)	-2.861*** (0.207)	-2.326*** (0.149)	-0.659*** (0.0886)	-2.739*** (0.194)	-2.080*** (0.139)
Female × USSR	0.516*** (0.0569)	1.114*** (0.151)	3.052*** (0.296)	1.938*** (0.202)	1.418*** (0.142)	3.039*** (0.284)	1.620*** (0.194)
USSR	0.285*** (0.0467)	-0.963*** (0.119)	-0.655*** (0.208)	0.308** (0.137)	-0.662*** (0.117)	-0.363* (0.208)	0.298** (0.138)
<i>Education:</i>							
Secondary					-0.0611 (0.123)	1.708*** (0.252)	1.769*** (0.174)
High					-1.999*** (0.151)	-0.191 (0.293)	1.808*** (0.200)
AMI of the USSR on women	0.801	0.151	2.398	2.246	0.757	2.675	1.918
P-value: AMI=0	0.000	0.193	0.000	0.000	0.000	0.000	0.000
R ²	0.262	0.0457	0.334	0.498	0.0880	0.345	0.511
N	14689	14689	14689	14689	14689	14689	14689

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The cluster standard errors at the year and region of birth level are in parentheses. We restrict to individuals who were born from 1935 to 1958. We report the estimated coefficient γ_2 from Equation 4.1. All regression control for constant, a four categories of health at age 10, a mental health problem dummy at age 10, to be a good student at math dummy; five place of birth dummies: a big city, the suburbs of a big city, a large town, a small town or rural area; the features of the individual's dwelling at age 10: the number of books by age 10, the number of services (i.e., hot running water supply, inside toilet and others), the number of rooms, and the year fixed effects.

Table I.2: USSR and Marriage History, Children, Later-Life Well-Being in the USSR and the Soviet Bloc

Variables	Marriage history and the number of children						
	(1) Ever-married	(2) Number of marriages	(3) Number of children	(4) Number of daughters	(5) Number of sons	(6) Life satisfaction	(7) Life quality
<i>Panel I: Former territories of the Russian Empire in Lithuania and Poland</i>							
Female	0.0226 (0.0151)	0.00779 (0.0226)	-0.0310 (0.0767)	-0.0739 (0.0609)	0.0295 (0.0628)	-0.206 (0.127)	-1.269*** (0.431)
Female × USSR	-0.0285 (0.0195)	-0.00505 (0.0359)	-0.0123 (0.108)	0.0687 (0.0830)	-0.0817 (0.0916)	0.182 (0.203)	1.299** (0.603)
USSR	0.0401** (0.0172)	0.106*** (0.0310)	-0.188** (0.0933)	-0.220*** (0.0675)	0.0237 (0.0752)	-0.702*** (0.170)	-3.228*** (0.490)
AMI of the USSR on women	0.012	0.101	-0.201	-0.152	-0.058	-0.520	-1.929
P-value: AMI=0	0.459	0.000	0.012	0.014	0.382	0.001	0.000
R^2	0.0433	0.0385	0.119	0.0717	0.0607	0.0851	0.122
N	2252	2252	2088	2081	2081	2231	2190
<i>Panel II: Only Lithuania and Poland</i>							
Female	0.0438*** (0.0119)	0.0570*** (0.0169)	0.0767 (0.0563)	-0.0104 (0.0450)	0.0719* (0.0432)	-0.113 (0.0816)	-0.789*** (0.282)
Female × USSR	-0.0512*** (0.0167)	-0.0556* (0.0322)	-0.123 (0.0936)	0.0106 (0.0714)	-0.130* (0.0777)	0.0808 (0.172)	0.838* (0.499)
USSR	0.0466*** (0.0146)	0.124*** (0.0271)	-0.318*** (0.0776)	-0.252*** (0.0588)	-0.0706 (0.0650)	-0.826*** (0.136)	-3.813*** (0.399)
AMI of the USSR on women	-0.005	0.068	-0.441	-0.242	-0.201	-0.745	-2.975
P-value: AMI=0	0.670	0.001	0.000	0.000	0.001	0.000	0.000
R^2	0.0363	0.0348	0.0768	0.0475	0.0409	0.0632	0.114
N	3994	3994	3712	3700	3700	3951	3884
<i>Panel III: Former USSR and former Soviet Bloc</i>							
Female	0.0263*** (0.00697)	0.0300*** (0.0109)	0.0926** (0.0396)	0.0188 (0.0300)	0.0661** (0.0278)	-0.281*** (0.0557)	-1.141*** (0.184)
Female × USSR	-0.0298** (0.0120)	-0.0354 (0.0236)	-0.199*** (0.0636)	-0.0301 (0.0470)	-0.173*** (0.0501)	0.262** (0.111)	0.954*** (0.335)
USSR	-0.000943 (0.0106)	0.0753*** (0.0202)	-0.0677 (0.0529)	-0.0701* (0.0397)	0.00588 (0.0416)	-0.683*** (0.0864)	-1.367*** (0.275)
AMI of the USSR on women	-0.031	0.040	-0.266	-0.100	-0.167	-0.421	-0.413
P-value: AMI=0	0.000	0.009	0.000	0.003	0.000	0.000	0.115
R^2	0.0204	0.0134	0.0673	0.0328	0.0308	0.0546	0.110
N	14708	14704	13598	13556	13556	14500	14200

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The cluster standard errors at the year and region of birth level are in parentheses. We restrict to individuals who were born from 1935 to 1958. We report the estimated coefficient γ_2 from Equation 4.1. In Panel (II) and Panel (III), we report the estimated coefficient α^f , α^m from Equation 4.4. All regression control for constant, a four categories of health at age 10, a mental health problem dummy at age 10, to be a good student at math dummy; five place of birth dummies: a big city, the suburbs of a big city, a large town, a small town or rural area; the features of the individual's dwelling at age 10: the number of books by age 10, the number of services (i.e, hot running water supply, inside toilet and others), the number of rooms, and the year fixed effects.

J East and West Germany

Table J.1: Socialism and Marriage History, Children, Later-Life Well-Being in East and West Germany

Variables	Marriage history and the number of children					(6) Life satisfaction	(7) Life quality
	(1) Ever-married	(2) Number of marriages	(3) Number of children	(4) Number of daughters	(5) Number of sons		
<i>Panel I: Both men and women</i>							
Female	0.0747*** (0.0173)	0.0818** (0.0316)	0.248*** (0.0587)	0.165*** (0.0518)	0.0785* (0.0458)	-0.0181 (0.106)	-0.455 (0.305)
Female × East Germany	-0.0478 (0.0301)	-0.0351 (0.0616)	-0.251** (0.124)	-0.255*** (0.0929)	-0.0000357 (0.0903)	-0.0146 (0.182)	0.159 (0.609)
East Germany	0.0470* (0.0255)	0.0802* (0.0471)	0.127 (0.0943)	0.0591 (0.0713)	0.0678 (0.0713)	-0.171 (0.131)	-0.137 (0.435)
AMI of East Germany on women	-0.001	0.045	-0.124	-0.196***	0.068	-0.186	0.022
P-value: AMI=0	0.962	0.247	0.122	0.003	0.303	0.141	0.958
R^2	0.0500	0.0322	0.0549	0.0533	0.0395	0.0473	0.0864
N	2241	2241	1954	1948	1948	2226	2178
<i>Panel II: Women</i>							
East Germany	0.00980 (0.0171)	0.0438 (0.0379)	-0.101 (0.0863)	-0.176** (0.0725)	0.0709 (0.0693)	-0.243* (0.126)	-0.170 (0.427)
R^2	0.0498	0.0538	0.0690	0.0713	0.0573	0.0826	0.0988
N	1158	1158	1043	1042	1042	1152	1122
<i>Panel III: Men</i>							
East Germany	0.0418 (0.0265)	0.0892* (0.0463)	0.129 (0.101)	0.0582 (0.0758)	0.0695 (0.0710)	-0.146 (0.129)	0.134 (0.420)
R^2	0.0687	0.0550	0.0615	0.0690	0.0433	0.0978	0.127
N	1083	1083	911	906	906	1074	1056

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The cluster standard errors at the year and region of birth level are in parentheses. We restrict to individuals who were born from 1935 to 1958 in Germany excluding Berlin, and we consider only children born before 1990. East Germany is equal to one if a respondent was born in Brandenburg, Mecklenburg-Western Pomerania, Saarland, Saxonia, Saxonia-Anhalt, and Thuringia. It is equal to zero if Baden-Wuerttemberg, Bavaria, Bremen, Hamburg, Hesse, Lower Saxony, North Rhine-Westphalia, Rhineland-Palatinate, and Schleswig-Holstein. In *Panel (I)* we report the estimated coefficient γ_2 from Equation 4.1, and AMI from Equation 4.2. In *Panel (II)* and *Panel (III)*, we report the estimated coefficient α^f , α^m from Equation 4.4. All regressions control for constant, a four categories of health at age 10, a mental health problem dummy at age 10, to be a good student at math dummy; five place of birth dummies: a big city, the suburbs of a big city, a large town, a small town or rural area; the features of the individual's dwelling at age 10: the number of books by age 10, the number of services, the number of rooms, and the year fixed effects.