Persecution and Migrant Self-Selection: Evidence from the Collapse of the Communist Bloc

Ran Abramitzky, Travis Baseler, and Isabelle Sin*

August 2023

Abstract

How does persecution affect who migrates? We analyze migrants' self-selection out of the USSR and its satellite states before and after the collapse of Communism using census microdata from the three largest destination countries: Germany, Israel, and the United States. We find that migrants arriving before and around the time of the collapse (who were more likely to have moved because of persecution) were more educated and had better labor market outcomes in the destination than those arriving later. This change is not fully explained by the removal of emigration restrictions in the Communist Bloc. Instead, we show both theoretically and empirically that this pattern is consistent with more positive self-selection of migrants who are motivated by persecution. When the highly educated disproportionately forgo migrating to enjoy the amenities of their home country, persecution can induce them to leave.

JEL CLASSIFICATIONS: J61, N40, N44, P30, R23
KEYWORDS: refugees, persecution, migrant selection, Communist Bloc

Men love their country, not because it is great, but because it is their own.

—Seneca the Younger, *Letters from a Stoic*

1 Introduction

In the decade after the sudden collapse of Communism in Eastern Europe in 1989, more than seven million people left the former Soviet Union and its satellite states[1] for the West. This migration

*Abramitzky: Stanford University and NBER (email: ranabr@stanford.edu); Baseler: University of Rochester (email: travis.baseler@rochester.edu); Sin: Motu Economic and Public Policy Research (email: isabelle.sin@motu.org.nz). We are grateful to Lianna Creedon and Jiwei Zhou for excellent research assistance. We thank Cevat Aksoy, Florencia Hnilo, Jenna Kay Kowalski, Walter Steingress, and anonymous referees for helpful comments.

[1]We use the term *satellite states* to refer to Poland, Hungary, Romania, Czechoslovakia, and Bulgaria. Those who traveled from East Germany to West Germany are not counted as immigrants in the German census. Yugoslavia and Albania broke off from the Soviet sphere of influence decades before the collapse of Communism.

wave followed a long period of political and ethnic repression and severe restrictions on emigration. While economic motives for migration have been studied extensively, the question of who migrates under conditions of persecution, conflict, or natural disaster—that is, who migrates as a refugee—remains less well understood. This question is of particular importance given the 1–2 million refugees who need resettlement each year (UNHCR, 2022).

This paper studies the effect of persecution on the self-selection of migrants from the Soviet Union and its satellite states (henceforth, *Communist Bloc*) around the collapse of Communism. We analyze census microdata from the three countries that received the greatest number of Communist Bloc immigrants—Germany, the United States, and Israel[2]—along with census microdata from four Communist Bloc countries—Russia, Poland, Romania, and Hungary. A major challenge in comparing the self-selection of refugees to that of other migrants is that refugees typically come from different countries, or migrate in different time periods, relative to other migrants. This makes it difficult to separate the effect of persecution or violence from other factors that vary over origin countries and time periods, such as immigration policies and labor market characteristics. Our context permits a rare opportunity to study a migration episode featuring substantial flows of both refugees and other migrants from the same origin countries over a relatively short time. We exploit this opportunity to estimate self-selection differences between refugees and other migrants from the Communist Bloc.

To separate the effect of persecution from the effect of emigration restrictions imposed by Communist Bloc governments, we focus on the period after emigration restrictions were relaxed. Because the collapse of Communism was unanticipated and immigration policy reacted slowly in destination countries, asylum channels for persecuted groups remained open for several years after emigration barriers were removed. This allows us to compare cohorts that migrated for different reasons but that faced similar emigration restrictions. To study the role of emigration restrictions, we compare cohorts that moved before and shortly after the collapse of Communism.

Specifically, we focus on three cohorts of migrants. The first cohort left between 1962 and 1986, when emigration was difficult and dominated by escapees and ethnic minorities migrating through international agreements. We refer to these as *early refugees*. The second left between 1987 and 1992, when emigration was relatively unrestricted but continued to be dominated by refugees and ethnic minorities.[3] We refer to these as *late refugees*. The third left in or after 1993,

[2]Together, these three countries received about 90% of Communist Bloc migrants between 1989 and 2000.

[3]Before 1993, the German Constitution guaranteed an absolute right to asylum for individuals who could demonstrate evidence of persecution. The Asylum Compromise—a political response to the unprecedented number of refugees seeking to enter Germany—categorically denied the right to asylum to those originating from or traveling through a list of "safe countries," which included all the former satellite states. The Asylum Compromise also imposed a cap on the number of ethnic Germans approved for resettlement from the former Soviet Union.

after most ethnic and refugee migration had ceased.[4] We refer to these as *economic migrants*. While such a sharp cohort-based definition is inevitably arbitrary, we argue that the rapid institutional changes in the Communist Bloc and the West created meaningful differences in the migration incentives and constraints faced by these cohorts. We then estimate differences in educational attainment and economic outcomes at the destination between these cohorts.

To account for general changes in immigration policy (for example, a skill-biased shift in visa category allocations), trends in labor demand for skilled compared to unskilled workers, and secular trends in the educational attainment of prospective migrants, we use immigrants from Western Europe as a comparison group. Demographic trends in Western and Eastern Europe were broadly similar during our study period, and German, US, and Israeli immigration policies toward Western European immigrants did not change significantly during this period.[5] This comparison group allows us to distinguish changes due to the collapse of Communism and the subsequent policy responses from broader demographic and economic trends.

We find that economic migrants were less educated than refugees, earned less, were less likely to find high-skill work, and were less likely to speak the destination language. We consider three possible explanations for these findings. First, it may be that Communist Bloc restrictions on emigration disproportionately affected less-educated workers. Second, the collapse of Communism may have influenced which types of people wanted to migrate (we refer to differences between those who want to migrate and the general population as *self-selection*). Third, destination-country immigration policies may have changed to favor lower-skill migrants during this time.

We argue that the third explanation is highly unlikely, as immigration policy changes in destination countries after the collapse favored higher-skill Communist Bloc migrants. Specifically, the closure of asylum channels between 1989 and 1993 in Germany and the US meant that prospective migrants had to rely on standard visa categories, which in both countries favor skilled migrants more than asylum channels do. In the US, cash and medical assistance payments to refugees were reduced in 1991.[6] In Germany, support for ethnic German resettlers was reduced in 1992 and 1993, and a language proficiency test requirement was imposed starting in 1990. In Israel, immigration policy has remained largely unchanged since 1971, with the Law of Return stipulating that all Jews

[4] Although migration flows increased dramatically starting in 1987, asylum channels for Communist Bloc refugees were not closed in Germany until the controversial Asylum Compromise, enacted through constitutional amendment in 1993. In the US and Israel, refugee flows decreased more gradually after 1993, but with the bulk arriving between 1987 and 1992. In the US, this was precipitated partly by an increase in the burden of proof applied to refugees from certain ethnic and religious groups beginning in 1989 (see Section 3.4.2).

[5] One major exception is the easing of immigration restrictions in Germany as new countries were admitted to the European Union. Excluding immigrants from countries that were admitted during our study period does not alter our main results (see Appendix Table A5).

[6] Additionally, employment preference visas grew in importance in the US, rising from 5% in 1989 to 13% in 2000 (INS).

have the right to migrate to Israel.

To distinguish between the first and second explanations, we exploit the fact that emigration restrictions had largely been lifted by the beginning of the late refugee period, so that a comparison of the late refugee period to the economic migrant period will vary the reason for migration but hold constant the lack of emigration restrictions.

We find that, in all three destination countries, late refugees were on average more educated and obtained better labor market outcomes compared with economic migrants. This finding points to the collapse of Communism affecting the self-selection of migrants: specifically, Communist Bloc refugees were more positively self-selected than the later economic migrants. We consider, and rule out, that this change can be fully explained by liquidity constraints, returns to skill in the Communist Bloc, or family reunification, among other potential alternatives. Instead, we argue that persecution disproportionately motivated highly educated workers to migrate.

Why might persecution increase the average educational attainment of those who decide to migrate? We show that this prediction can be derived from a simple Roy model in which persecution reduces the utility cost of migrating. Despite the Roy model's widespread use to study immigrant selection, this implication has been overlooked in the refugee literature. In our simple model, people enjoy living in their home country and move only if they are offered a wage premium that is more valuable than the amenities specific to their home. Only workers with high human capital can "afford" to stay in their home country and forgo the higher wages in destination countries. More precisely, diminishing marginal utility of consumption implies that workers with the greatest human capital will be more willing to forgo a given income premium from migrating in favor of a given home amenity. Persecution, which we model as reducing the home amenity, mitigates this force, pushing high human capital workers to migrate. Unless other forces dominate the selection process—for example, if the returns to migrating are sufficiently higher for high human capital workers—persecution will increase the average human capital of migrants. We formalize this argument in Section 4, and discuss the conditions under which persecution is likely to increase or decrease the self-selection of migrants.

Our model offers two predictions about the relationship between human capital and migration, which we use to directly test the home amenity explanation. To do so, we estimate education-emigration profiles from combined origin- and destination-country census data. The first prediction is that emigration rates should decrease in education at the top of the education distribution. We find that this is true in each of the four origin countries where our exercise is possible: workers with tertiary degrees were less likely to emigrate than workers with post-secondary degrees in Poland, Romania, and Hungary, or with upper secondary degrees in Russia. While this finding cannot be explained by immigrant sorting based on income—as the returns to education were higher in the

West (see Section 5.4)—it is consistent with a home amenity effect. The second prediction is that persecution, by reducing the value of the home amenity, should attenuate the drop in emigration at the top of the education distribution. While we do not observe persecution at the individual level, we can identify two groups in two Communist Bloc countries that faced long-standing persecution and that accounted for a substantial share of refugee flows: Jews and ethnic Germans in Russia and Romania. We find that emigration rates in each of these groups were relatively higher for members with tertiary degrees. These findings support our interpretation that refugees' relatively high human capital was a consequence of a home amenity effect influencing emigration decisions out of the Communist Bloc.

Comparing migrants arriving during the early refugee period with those arriving during the late refugee period allows us to isolate the role of emigration restrictions in influencing migrant selection out of the Communist Bloc. We find that late refugees were on average less educated than early refugees, consistent with emigration barriers imposing relatively greater costs on the less well-off, as in Chiquiar and Hanson (2005). Comparing immigrants in Germany who arrived before and after the construction of the Berlin Wall confirms this finding.[7] However, these differences between early and late refugees are arguably small given the enormous increase in the number of people traveling to the West during this period. This suggests that Soviet-style emigration restrictions interacted only modestly, on average, with education.

Our findings have important implications for the debates surrounding immigration, which has consistently topped the list of European voters' concerns since 2014 (Politico, 2019). Although the legal frameworks regulating asylum policy in Europe are based predominantly on humanitarian considerations (Dustmann et al., 2017), the economic implications of refugee migration for the host country are an important determinant of attitudes toward immigration (Mayda, 2006, Baseler et al., 2023). In Germany, concerns about refugees' reliance on social assistance fueled the contentious disputes over asylum policy in the late 1980s and early 1990s (Marshall, 2000). The 2022 Ukrainian refugee crisis has renewed the debate on whether host countries should prioritize the economic integration of refugees, or only provide temporary hosting (see, for example, Culbertson, 2022). Our analysis of the characteristics of refugees—and especially their economic performance in the destination—is thus at the heart of this policy debate.

This paper proceeds as follows. Section 2 reviews related literature. Section 3 describes the relevant historical and policy details of our setting. Section 4 describes our conceptual framework and presents a simple model of migration under persecution. Section 5 describes our data and

[7] In contrast, in Israel, late refugees were on average much more educated than other cohorts. Two potential explanations are that emigration was relatively less restricted for Jews moving to Israel than for other groups during the early refugee period (Dowty, 1987), and that Russian Jews who wanted to migrate to the US during the late refugee period were diverted to Israel by temporary changes in US policies toward Jewish refugees (see Section 3.4.2).

estimation strategy. Section 6 presents our main results and discusses possible mechanisms. Section 7 discusses the implications of our findings and compares our results to other research in the literature on refugee selection.

2 Literature Review

First and foremost, this paper contributes to our understanding of one of most significant events of the 20th century, the collapse of the Communist Bloc. Despite the magnitude of the migration wave following the collapse—with over seven million people leaving the Communist Bloc in a decade, this event is among the biggest migration episodes in history—there has been relatively little economic analysis of the immigrants themselves. One exception is Denisenko et al., eds (2020), who offer a historical description and socioeconomic characterization of Soviet migration in this period, but do not analyze the impact of the collapse on migrant selection. Other impacts of the collapse have received greater attention: see, for example, Brainerd (1998) for an analysis of impacts on Russian labor markets; Friedberg (2001), Borjas and Doran (2012), and Glitz (2012) for an analysis of impacts of immigration on receiving countries; and Abramitzky and Sin (2014) for an analysis of the impact on idea flows.

This paper also contributes to the literature studying the selection and outcomes of refugees relative to other migrants (we use the term *selection* to refer to the position of the average migrant in the origin-country distribution of a human capital measure such as education, a process that depends both on migrants' self-selection and legal restrictions on exit and entry). Cortes (2004) compares refugees to economic migrants arriving in the US by applying an origin-country assignment rule to US census data. She finds that refugees earn less upon arrival, but experience faster income growth compared with economic migrants. This is rationalized by a self-selection model in which refugees—who are relatively more motivated by non-economic factors—are more negatively self-selected, but invest more in destination-specific human capital because they intend to stay there longer.[8] Chin and Cortes (2015) find similar results using the New Immigrant Survey, which includes refugee status at the individual level. Dustmann et al. (2017) and Brell et al. (2020) find similar results for refugees and other immigrants in the European Union. Boustan (2007) studies Jewish migration from the Russian Empire, and finds that migration rates respond both to pogroms and to variation in economic conditions. Our paper is among the first to document an episode in which refugees were more positively selected than other migrants. The only other

[8]Abramitzky et al. (2021) use oral history records from arrivals at Ellis Island and find that English acquisition occurred faster for refugees compared to other immigrants in the US. Forced displacement may itself increase human capital and long-run income (Becker et al., 2020, Chiovelli et al., 2021, Sarvimäki et al., 2022), but can also create sustained economic and mental health losses (Baseler and Hennig, 2023).

example we are aware of is Aksoy and Poutvaara (2021), who find that refugees fleeing conflict for Europe in 2015 and 2016 were more positively selected than those migrating for other reasons. The authors hypothesize that conflict may induce high-skill workers to migrate if it threatens wage income directly. However, violent conflict was not the primary driver of migration in our context. Instead, we offer an explanation for more positive selection of refugees that has not been proposed in the migration literature, despite its being anecdotally very important to the immigration decision: a home amenity that is reduced by persecution.

We also contribute to the literature on migrant selection more broadly. Chiswick (1978) finds that foreign-born workers catch up with native-born workers in the US, and argues that this may be due to positive self-selection. Borjas (1987) demonstrates that the self-selection of migrants depends on the relative variance of the income distributions at the origin and destination. In the Borjas (1987) model, refugees may be negatively selected from the origin population, but outperform the native-born at the destination (which Borjas terms "refugee sorting"), if the two countries' labor markets reward very different skills. We do not think this characterizes the post-WWII Communist Bloc: in our data, education obtained under Communist Bloc regimes strongly predicts labor market success in the West. Abramitzky et al. (2012) find that migrants from Norway to the US during the age of mass migration—when borders were nearly open—were negatively selected from urban areas, consistent with the Borjas model given Norway's greater income inequality during that period. Abramitzky (2008, 2018) find that the most productive members of egalitarian kibbutzim communities in Israel were more likely to exit those communities. Chiquiar and Hanson (2005) introduce to the Borjas model a migration cost which is declining in human capital to explain the observed intermediate selection of immigrants from Mexico in the US despite greater income inequality in Mexico. We find that the removal of Communist Bloc exit restrictions lowered the average educational attainment of migrants, consistent with the Chiquiar and Hanson model. Grogger and Hanson (2011) show that an income-maximization model based on absolute wage differences rationalizes the positive selection into migration observed throughout much of the present world. See Borjas (1994) and Abramitzky and Boustan (2017) for a more thorough review of the literature on migrant selection. Our model is related to McKenzie and Rapoport (2007), who study migration in an environment with illiquid assets, a fixed cost of migrating, and credit constraints, which together predict intermediate selection of emigrants. Like Dustmann and Okatenko (2014), we emphasize the role of local amenities in influencing migration decisions. The authors show that better local amenities—such as public services and security—predict lower emigration intentions on average. Our paper focuses instead on migrant selection, showing theoretically how home amenities influence who migrates. Our framework offers new predictions about how differences in amenities affect migrant selection, and we show empirically that these predictions were borne out

during one of the world's most significant migration episodes.

3 History and Policy Background

This section characterizes the historical and policy details relevant to our analysis, with a focus on immigration policy and persecution. More extensive details can be found in Online Appendix B.

3.1 Migration Restrictions in the Communist Bloc

From the end of World War II until the late 1980s, the Soviet Union and its satellite states were controlled by totalitarian Communist governments which exercised an extremely high degree of control over everyday life. Legal emigration was virtually impossible for a resident of the USSR (Dowty, 1987). While emigration policies in satellite states varied in their degree of restrictiveness, the general picture was bleak, with permission to emigrate being granted only rarely and severe sanctions imposed against those who tried to leave without permission (Dowty, 1987). Escape became significantly more difficult after the construction of the Berlin Wall in 1961 cut off the direct route to West Germany (see Appendix Figure B1).

Legal emigration was occasionally permitted following agreements with Western governments. These agreements largely applied to ethnic and religious minorities, especially ethnic Germans (*Aussiedler*) and family members of West Germans living in East Germany (the West German government paid the governments of Romania, Poland, and East Germany to permit *Aussiedler* to emigrate), and Jews who were permitted to leave for the United States and Israel following international pressure in the early 1970s (Dowty, 1987).

3.2 Persecution in the Communist Bloc

The nature of state persecution in the Communist Bloc varied immensely throughout the history of the Soviet Union. In the pre-WWII era, repression and killings were conducted at scale against pre-revolution elites, wealthy peasants, religious groups, ethnic minorities, and political enemies of the Communist Party (Gregory, 2009, Harrison, 2011, 2014). Toward the end of WWII, entire ethnic groups accused of cooperation with Nazi Germany were forcibly relocated to Kazakhstan and the eastern USSR (Rieber, 2000). Oppression and persecution of minority ethnic and religious groups continued during the post-WWII Stalinist era, including an explicitly anti-Jewish campaign. Although these campaigns were curtailed after Stalin's death, systematic persecution of ethnic and religious minorities continued through the 60s, 70s, and 80s (Gitelman, 1982, Orleck, 1999).

The Romanian and Czechoslovakian Communist governments used particularly brutal Soviet-style methods of repression, including religious repression, state surveillance, and forced labor (Taborsky, 1973, Rieber, 2000). Communist Poland, though it never accepted Soviet domination (Kort, 1996), pursued its own campaign of ethnic cleansing from 1945 to 1948 (with an estimated death toll of at least one million ethnic Germans) and violently suppressed political dissidents throughout its existence—with an estimated death toll of 22,000 between 1948 and 1987 (Rummel, 1997).

3.3 The Collapse of Communism

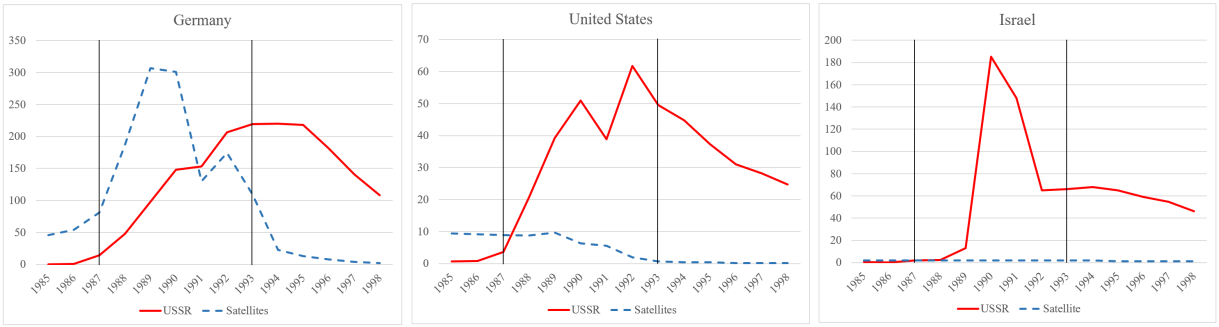
Major reforms began in the Soviet Union under Mikhail Gorbachev, who became General Secretary of the USSR in 1985. Gorbachev aimed to move the Soviet Union gradually toward a more market-oriented economic system, decentralize political decision making, and permit a more open expression of ideas. Gorbachev's aim was not to provoke the end of Communism or to dissolve the Soviet Union: as Kort (1996) writes, "Gorbachev came to power determined to reform, and thereby to preserve, the Soviet system." Emigration restrictions were gradually eased: a policy reform in 1987 required exit visa cases to be decided within 1 month with a rationale to be given in the case of a denial. Still, emigration was permitted only if a person had close relatives living abroad, which made emigration much easier for ethnic minority groups (Denisenko, 2020). In 1988, restrictions on Jewish emigration were largely lifted (Kort, 1996). Unrestricted emigration was finally legalized in 1992, though it did not take effect until January of 1993 (Pirozhkov, 1996).

Reform in the satellite countries happened more suddenly. Many satellite governments initially resisted Gorbachev's agenda of reform, but could not stop waves of popular demands for liberalization and the end of one-party rule. By the end of 1989, the Communist satellite governments had all ceded control, and emigration restrictions were removed entirely.

The removal of emigration restrictions led millions of people to leave the Communist Bloc. Figure 1 shows the yearly number of refugees and asylum seekers (including ethnic German resettlers) arriving in Germany, the US, and Israel separately for the USSR and its satellite countries (Section 5.1 describes these administrative data). Refugee arrivals were low before 1987: roughly 50,000 per year in Germany, not more than 10,000 per year in the US, and only a few thousand per year in Israel. After the collapse of Communism, arrivals rose precipitously in all three destination countries. In the peak immigration year of 1990 alone, the number of refugees resettled was 450,000 in Germany, 60,000 in the United States, and 200,000 in Israel. Refugee arrivals declined after 1993, in part because of policy changes in the West, which we discuss below.[9]

[9] Appendix Table B1 offers a country-level breakdown of total immigration flows.

Figure 1: Yearly Refugee Arrivals in Germany, US, and Israel (Thousands)



Source: Cabinet of Germany (*Bundesregierung*) and Federal Office of Administration (*Bundesverwaltungsamt*), US Yearbooks of Immigration Statistics (Department of Homeland Security), and the Central Bureau of Statistics of Israel. German data include asylum seekers and ethnic Germans approved for resettlement. US data include refugee and asylee approvals. Israeli data include all arrivals. Arrivals are recorded in the year of first arrival, not the year in which the visa was obtained. Applicants whose cases for resettlement were denied are not included. Vertical lines mark 1987—the beginning of emigration liberalization in the USSR—and 1993—the year of the Asylum Compromise in Germany, which effectively barred most asylum applications from Eastern Europe (see Section 3.4.2).

3.4 Immigration Policy in the West

Broadly speaking, until 1989, Germany and the United States were open to any asylum seeker who managed to escape the Communist Bloc. These policies were tightened after 1989 as an unexpectedly large number of immigrants began arriving. Policy tightened quickly in the United States (with exceptions for certain minority groups), but more gradually in Germany given that the right to asylum was codified in the German constitution and retained significant popular support as of 1989 (Marshall, 2000). Throughout the entire period, Israel provided the right to citizenship for all Jews through its Law of Return. Appendix Figure B2 summarizes the major immigration policy changes in Germany and the US between 1989 and 1993.

3.4.1 Immigration Policy Before 1989

German Immigration Policy. During our period of study, German immigration policy covered three categories of immigrants: ethnic German resettlers, asylum seekers, and other immigrants (economic migrants). The right to citizenship for ethnic Germans—defined as a refugee or expellee of German ethnic origin or as the spouse or descendant of such a person—is guaranteed by Article 116 of the German constitution. Until 1990, it was possible for any ethnic German living in the Communist Bloc to obtain German citizenship nearly automatically upon arrival. Non-German escapees from the Communist Bloc faced few restrictions on their admission to Germany, which constitutionally guaranteed the right to asylum "with no exceptions" for those persecuted for political reasons (Marshall, 2000). However, a rising number of asylum seekers in the 1980s led the

federal and state governments to pursue various deterrence strategies, such as imposing work bans and restrictions on choice of residence. These, however, were ultimately ineffective at reducing the number of asylum seekers (Marshall, 2000).

US Immigration Policy. US law recognizes the right of asylum for people who are persecuted or fear persecution (US Congress, 1980). In practice, this right is limited by a numerical cap on the number of refugees permitted to settle in the US. Until 1989, refugee status was nearly always granted to applicants from the Communist Bloc: as late as 1988, the approval rate was 99% for Soviet emigrants (Rosenberg, 2015). In 1990, the Immigration Act reformed immigration categories in several ways that favored high-skill immigrants, such as priority for employment visas and the H-1B visa for workers with a college degree (INS).

Israeli Immigration Policy. Israeli naturalization law has long been based on the Law of Return, which stipulates that "every Jew has the right to come to his country as a [Jewish immigrant]." In 1970 the Law of Return was extended to the spouse, children, and grandchildren of Jews (Schroeter, 1971).

3.4.2 Immigration Policy After 1989

Changes in Germany. On July 1, 1990, the Ethnic German Reception Law came into force, requiring that ethnic Germans apply for recognition of status in their home countries, fill out a questionnaire in German proving their commitment to German culture, and complete a language test. About a third of applications failed the language test (Marshall, 2000). Ethnic Germans from the former USSR, however, were exempt.

The most significant revision came into effect with the highly controversial *Asylum Compromise*, which came into force on July 2, 1993. The Compromise modified the German constitution to restrict the right to asylum. Applications from individuals who arrived in Germany via a "safe third country" or who came from a "safe country of origin" were deemed "manifestly unfounded" and could be speedily denied (Marshall, 2000). Every new Eastern European democracy was considered a safe country, effectively shutting down the asylum channel for Communist Bloc migrants. That same year, the federal government capped the number of ethnic German immigrants at 200,000 per year. An immediate implication of these reforms was that the number of asylum applications and arrivals dropped precipitously (Marshall, 2000). German policies with respect to immigrants who were not ethnic Germans and were not seeking asylum remained relatively constant over this period.

Changes in the US. The change in skill selectivity applied to Communist Bloc migrants was less stark in the US than in Germany. In 1989, the US began to apply the INS Refugee standard of a "well-founded fear of persecution" to all applications for asylum. The number of refugees entering the US from Communist satellite countries began to fall starting in 1990. In February 1990, the Lautenberg Amendment lowered the burden of proof for Soviet Jews and several Christian minority groups back to their pre-1989 levels. Refugees from the USSR therefore continued to enter in high numbers throughout the early 1990s.

3.4.3 Social Assistance Provided to Immigrants

Prior to the collapse of Communism, German law guaranteed full freedoms and access to social services for resettled ethnic Germans. Beginning in 1992, access to social services such as pensions and unemployment benefits was reduced considerably for ethnic Germans and asylum seekers. Refugees also faced sporadic work bans (Marshall, 2000).

US refugee resettlement assistance programs include cash assistance, medical assistance, basic needs support, and language and job skill training (Bruno, 2011). In 1991, the duration of cash and medical assistance payments was lowered from 36 months to 8 months.

Resettlers arriving in Israel were supported by a decentralized network of "absorption centers." In the 1990s the government formalized a basic income program (called the "absorption basket") lasting for one year after arrival, while leaving service provision (such as assistance finding housing and jobs) to local governments and volunteer organizations (Leshem and Sicron, 1999).

4 A Migration Model With Persecution

In this section, we provide a conceptual framework to guide our analysis of migration out of the Communist Bloc.[10] Our framework embeds persecution into a simple Roy model in which workers trade off an income premium from migrating against an amenity value of staying home. Our core assumption follows Seneca: people love their home country, and in general can only be induced to leave it by great differences in opportunity. We model persecution as reducing the value of remaining in the home country through a decrease in an amenity term in the utility function. A key result of the model is that, all else equal, workers with the highest education prefer not to migrate. This arises because the marginal utility of income is declining in income, but the home amenity

[10]Formulating such a model is by necessity an act of great simplification. Our aim is to extract the most important components of the changing migration landscape. In this section we refer to self-selection in terms of the usual abstraction *human capital*. In our empirical analysis, we will analyze educational attainment and labor market outcomes, such as occupation and income, when comparing across cohorts.

value is not: as one moves up the income distribution, eventually workers are rich enough that the home amenity is more attractive than the income premium. Persecution increases the threshold at which workers are indifferent between migrating and staying home, increasing the average human capital of migrants.

Our model is a simplified variant of the generalized Roy model (see, for example, Eisenhauer et al., 2015) which is commonly used to study immigrant selection. Our version interprets migration costs as the loss of a home amenity, which varies across individuals. The purpose of the model is to demonstrate that, even in a standard, parsimonious framework, refugees may be more positively selected compared with other immigrants, an implication that has been overlooked in the refugee literature. The model also sheds light on the conditions generating more positive or more negative refugee selection. It is related to the migration model of McKenzie and Rapoport (2007), which also predicts intermediate self-selection of migrants. In their model, the most well-off prefer to retain their illiquid assets rather than migrate. The home amenity performs a similar function in our model, inducing the most well-off to stay home. This prediction is consistent with evidence across many settings, including during the age of mass migration (Abramitzky et al., 2013), and in many developing countries today (Dustmann and Okatenko, 2014, Clemens and Mendola, 2020).

4.1 Model Setup and Solution

Consider a set of workers born in the Communist Bloc deciding whether to migrate to the West. Each worker i is endowed with transferable human capital $H_i \in \mathbb{R}^+$. Denote the migration decision of worker i with $M_i \in \{0, 1\}$. Workers remaining in their home country earn income $Y_i(M_i = 0) = H_i$ and enjoy a home amenity $A_i \geq 0$ (we will later use the home amenity term to describe the effect of persecution). Workers who migrate capture an income premium P_i so that their total income in the West is $Y_i(M_i = 1) = H_i + P_i$. Both the home and destination countries can potentially establish migration barriers in the form of costly passport requirements, proof of income, or outright exit bans that are difficult to circumvent. For simplicity, we model these barriers as prohibitive for workers below a certain human capital threshold, denoted by $\bar{h}$. This result can be micro-founded by assuming that migration costs are decreasing in human capital (Chiquiar and Hanson, 2005).[11] The worker's utility is given by:

$$U_i(M_i = 0) = \log(H_i) + A_i$$

[11] This could arise because higher-skill individuals are more easily able to meet the extensive bureaucratic migration requirements, because visa requirements explicitly screen on measures of human capital, or because paying a fixed migration cost imposes a lower time-equivalent cost for individuals with higher hourly wages.

$$U_i(M_i = 1) = \log(H_i + P_i)$$

The worker's problem is:

$$\max_{M_i} U_i(M_i) = M_i \log(H_i + P_i) + (1 - M_i)(\log(H_i) + A_i) \quad (1)$$
$$s.t. \quad H_i \geq \bar{h} M_i$$

Workers with $H_i < \bar{h}$ cannot migrate whether they want to or not. Workers with $H_i \geq \bar{h}$ will choose to migrate when $H_i \leq P_i/(e^{A_i} - 1)$. Workers with $H_i > \max\left(\bar{h}, P_i/(e^{A_i} - 1)\right)$ are able to migrate, but prefer to stay home because the value of the home country amenity outweighs the income gain from migrating: we call this the *home amenity effect*. The solution to Equation 1 is therefore:

$$M_i^* = \begin{cases} 1 \text{ if } \bar{h} \leq H_i \leq P_i/(e^{A_i} - 1) \\ 0 \text{ otherwise.} \end{cases}$$

4.2 How Does Persecution Affect Who Migrates?

The marginal effect of persecution on the migration decision is unambiguous: for workers with $H_i \geq \bar{h}$, a decrease in A_i relaxes the condition $H_i \leq P_i/(e^{A_i} - 1)$. Workers who preferred to stay home absent persecution may no longer be willing to forgo a migration premium to enjoy a home country amenity which has been reduced or negated by persecution. All else equal, the workers forgoing migration in the absence of persecution are those with the highest human capital, so persecution will increase the average human capital of migrants.

Whether migrants from persecuted groups are more or less positively selected than migrants from non-persecuted groups depends on the correlations between human capital, the migration premium, and the home amenity in the population. Lacking individual data on persecution or counterfactual income, we elected not to explicitly model or estimate these correlations. Instead, we illustrate how the effect of persecution on selection depends on these correlations with several examples in Figure 2. In doing so, it will be helpful to define a level set $\widetilde{H}(P, A)$ of workers who, given their migration premium P_i and home amenity value A_i, are indifferent between migrating and staying. That is, $\widetilde{H}_i(P_i, A_i) = P_i/(e^{A_i} - 1)$. Note that $\widetilde{H}$ is increasing in P and decreasing in A: workers with less human capital require a lower premium to be willing to migrate, and a higher home amenity value to forgo a given migration premium. We restrict our attention to relatively simple examples in which the migration premium is related to human capital through a function $P(H)$. Throughout these examples, we will set $\bar{h} = 0$ and focus only on the self-selection margin.

While the results of Section 6 suggest that Example 2 approximates our setting, we offer several examples to help clarify how each feature of the model interacts with migrant self-selection, and to highlight the conditions under which we expect refugees to be more or less positively selected than economic migrants. The key result of the model is that under some conditions, which we believe are reasonable for our setting, persecution will increase the average human capital among those who migrate.

Example 1: Extreme Persecution (A = 0). In this extreme case, as A approaches 0, enjoyment of one's home country evaporates completely. This may describe contexts of extreme persecution such as mass killings. In this case, there is no self-selection into migration at all: $\widetilde{H} \to \infty$ and everyone who can migrate will.

Example 2: Constant Migration Premium. Consider a case in which $P(H) = p$ for some constant p. This may approximate a setting in which the migration premium is very large relative to home country income (such as when workers move from a poor to a rich country). Consider two types of workers: high-amenity types (such as those not facing persecution) with A_H , and low-amenity types (such as those facing persecution) with $A_L < A_H$. In this case, low-amenity workers will be unambiguously more positively selected than high-amenity workers. Intuitively, persecution raises the cutoff $\widetilde{H}$ below which workers are willing to migrate. Note that any $P(H)$ that crosses $\widetilde{H}(P, A_H)$ to the left of $\widetilde{H}(P, A_L)$ will deliver the same result. In particular, any monotonically decreasing $P(H)$, or any concave $P(H)$ that crosses $\widetilde{H}(P, A_H)$ from above, will satisfy this requirement.

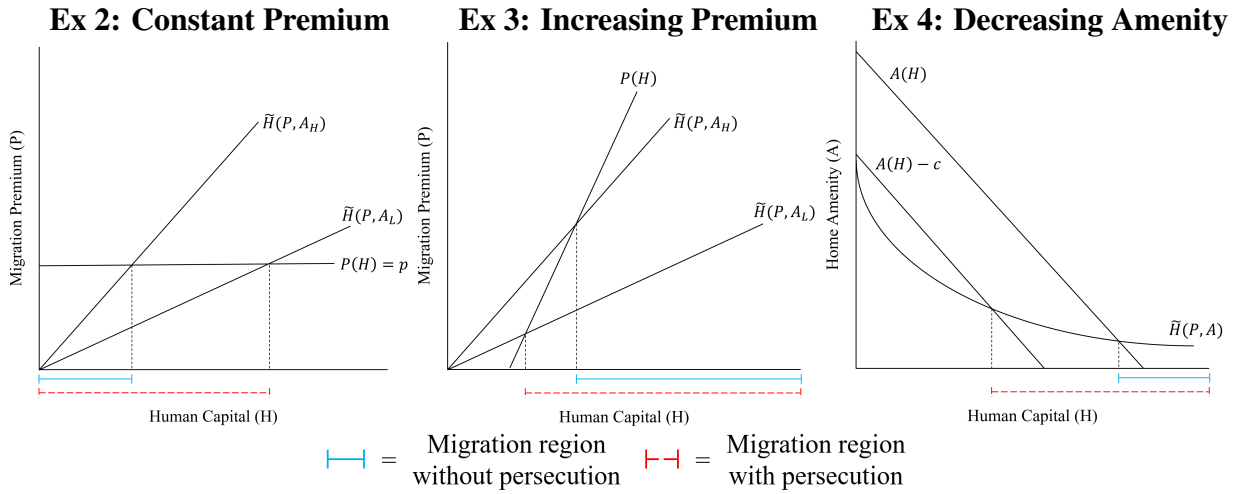
Example 3: Increasing Migration Premium. Consider a case in which the migration premium is increasing rapidly in human capital. This may represent a setting in which the skill premium in the origin is very low relative to the destination.[12] Again consider the two types of workers as outlined in Example 2. If $P(H)$ crosses $\widetilde{H}(P, A_L)$ from below, then migrants of both types will be positively selected. In this case, persecution lowers the cutoff $\widetilde{H}$ above which workers are willing to migrate, and so low-amenity types will be more negatively self-selected.

Example 4: Decreasing Home Amenity. Consider a case in which the home amenity is lower for workers with greater human capital. This may represent a post-revolutionary setting in which persecution is directed against educated elites, such as the period shortly after the Russian Revolution. Assume the function $A(H)$ describes the relationship between the home amenity and human

[12]This case could also arise under a multiplicative wage premium $P_i = pH_i$ for $p > 0$.

capital, and intersects the level set $\widetilde{H}(P, A)$ from above along the A axis. Consider a form of persecution that reduces the home amenity value by a constant term c. Then this persecution lowers the cutoff $\widetilde{H}$ above which workers wish to migrate, and so persecuted types will be more negatively self-selected. Note that this result relies on the shape of $A(H)$: in particular, an upward sloping or constant $A(H)$ will reverse this result.

Figure 2: The Effect of Persecution on Migrant Self-Selection in Three Environments



Notes: $\widetilde{H}$ is the value of human capital H at which workers are indifferent between migrating and staying home, given a migration premium P and home amenity value A. $P(H)$ and $A(H)$ are the assumed functional relationships between the migration premium or the home amenity, respectively, and human capital in the population. Examples 2 and 3: A_L and A_H are amenity values for workers who do and do not face persecution, respectively. Example 4: Persecution reduces the home amenity value by c at every level of H. Example 2 shows an example of negative self-selection, which is reduced by persecution. Examples 3 and 4 show examples of positive self-selection, which is reduced by persecution.

4.3 How Do Migration Restrictions Affect Who Migrates?

The collapse of Communism brought about two major changes to the constraints that prospective migrants faced. First, it became substantially easier to exit the Communist Bloc: what before was criminal, was now unrestricted. This happened overnight in some places, such as Romania, and over a handful of years in others, such as the USSR. Second, Germany and the United States became increasingly selective in the entry requirements they imposed on immigrants from the Communist Bloc.

The effect of Soviet-style exit restrictions on migrant selection is theoretically ambiguous. On the one hand, the better educated may be more equipped to navigate the complex bureaucracy built to render migration difficult. On the other hand, to the extent that attempted migration can result

in job loss or exclusion from educational or social institutions, the better off may have more to lose from risking it. Some satellite countries, including Romania and Czechoslovakia, explicitly targeted their restrictions at the better educated by imposing an emigration tax equal to the cost of a person's education. The effect of the removal of exit restrictions on migrant selection is therefore an empirical question.

The effect of immigration policy reform in Germany and the US on migrant selection is more straightforward: nearly every change reflected an attempt to make resettlement less desirable, more difficult, and to deter migrants who were likely to rely on social welfare programs (see Section 3.4.3). Germany also made it substantially more difficult for Communist Bloc migrants to claim asylum after 1993 (see Section 3.4.2). Lacking the asylum channel, prospective migrants could enter only through standard immigration channels, which require the migrant to demonstrate economic self-sufficiency and make a case for their economic contribution to the destination country. We therefore expect—holding the self-selection margin constant—that immigration policy reforms in the US and Germany should unambiguously increase the average human capital of migrants: the self-sufficiency and language requirements, as well as reductions in social assistance, should impose a higher burden on the less well-off. We interpret these policy changes as an increase in $\bar{h}$ within our migration model.

4.4 Testing the Model's Predictions in the Data

Table 1 summarizes the three features we believe are crucial for understanding changes in migrant selection following the collapse of Communism. As described in Section 5.5, we focus on three periods, or "regimes": the early refugee period (until 1986), the late refugee period (from 1987 until 1992), and the economic migrant period (1993 onward). The first key feature is the average home amenity among the set of people who are migrating. In the two refugee periods, this amenity was relatively low: persecution was a key reason to flee the Communist Bloc, and in most cases migrants were required to demonstrate evidence of persecution to immigration authorities. The second feature is the difficulty of exiting the Communist Bloc, which was very high in the first period and low afterward. The third feature is the extent to which immigration policies in destination countries admitted Communist Bloc migrants based on their skills (or *immigration policy skill bias*). This was low when destination countries were admitting migrants based primarily on evidence of persecution or minority ethnic group membership (until 1989 in the US, and 1993 in Germany) and increased as destination countries restricted asylum channels and imposed self-sufficiency requirements on would-be immigrants. Israeli immigration policy remained open to Jewish migrants throughout this period.

Table 1: Summary of Migration Regimes

	Pre-1986 (Early Refugee)	1987–1992 (Late Refugee)	Post-1993 (Economic Migrant)
Home Amenity of Migrants (e.g., Due to Persecution)	Low	Low	High
Difficulty of Exiting Communist Bloc	High	Low	Low
Immigration Policy Skill Bias in Germany	Low	Low	High
Immigration Policy Skill Bias in US	Low	High	High
Immigration Policy Skill Bias in Israel	Low	Low	Low

The changes shown in Table 1 suggest several empirical tests. Comparing the early and late refugee cohorts in Germany will isolate the effect of exit restrictions, while the same comparison in the US will estimate the combined effect of exit restrictions and immigration policy skill bias. Comparing the late refugee and economic migrant cohorts in the US and Israel will isolate the effect of persecution, while the same comparison in Germany will estimate the combined effect of persecution and immigration policy skill bias. In all cases, comparing the late refugee and economic migrant cohorts holds fixed the effect of emigration restrictions. A drop in education from the late refugee to the economic migrant period would indicate that refugees are more positively self-selected, because the most important changes in emigration restrictions had already taken place by 1993, and because changes in immigration policy during this period were unambiguously biased toward skilled migrants.

5 Data and Estimation Strategy

In this section, we describe our methodology, including dataset construction, sample selection, variable definition, and estimation strategy.

5.1 Data Sources

We analyze the selection and outcomes of Communist Bloc immigrants in Germany, the US, and Israel by combining census microdata from each of these destination countries. For Germany, we rely on either the 10% household census of 2011, or a pooled dataset consisting of the 1% household micro-censuses from 1985, 1989, 1991, 2000, and 2005, accessed through remote execution

on data hosted by the Federal Statistical Office.[13] For the US, we combine the 1980, 1990, and 2000 5% public use census files with the yearly 1% American Community Surveys (ACS) from 2001 through 2011 obtained through IPUMS.[14] For Israel, we combine the 1972, 1983, 1995, and 2008 10% public use census files obtained through IPUMS.[15] When analyzing census data from Germany and the US, we randomly sample 10% of natives and 100% of Western and Communist Bloc immigrants to produce our main sample. We estimate education-emigration profiles for each origin country with available census data from around 2011—Poland, Hungary, Romania, and Russia[16]—to match the timing of the German census.

Aggregate data on refugee admissions in the US are available from the Yearbooks of Immigration Statistics published yearly by the Department of Homeland Security. Data on refugee admissions in Germany are taken from monthly bulletins published by the Federal Cabinet of Germany (*Bundesregierung*), which include information on refugee admissions approximately monthly by origin country from 1986. Data on the number of ethnic German resettlers (*Auessiedler*) are taken from the Federal Office of Administration (*Bundesverwaltungsamt*). In Israel, the vast majority of Communist Bloc immigrants were Soviet Jews eligible for full citizenship, and so we do not distinguish between immigrant classes. Data on arrivals by origin country are taken from the Central Bureau of Statistics of Israel.

5.2 Sample Construction

We restrict our main analysis to adults of working age at the time of the census survey who immigrated as adults. These individuals are likely to have completed their education before immigrating, to have had significant agency in their migration decision, and to be attached to labor markets in the destination at the time of survey. Specifically, we restrict our sample to individuals aged 25–65

[13] The Federal Statistical Office (*Statistisches Bundesamt*) is a statistical arm of the Federal Ministry of the Interior. For researchers outside of Germany, the census and micro-census data are available through remote execution. Pooling is possible across micro-census survey years, but not across census and micro-census surveys. We therefore analyze these two datasets separately.

[14] We do not use the US 2010 10% sample because it does not include information on country of birth. We additionally use ACS data through 2019 only when analyzing long-run labor market trajectories.

[15] Although our outcomes are measured in different years across destination countries, this is not important for our analysis. For adults over 25 years of age, broad educational attainment should be largely fixed over time. Labor market shocks that are common to Western European and Communist Bloc immigrants will be absorbed by our comparison group. Finally, our main analysis relies on cohort-level, rather than country-level, variation.

[16] Specifically, we use the 2011 Polish Census, 2011 Hungarian Census, 2011 Romanian Census, 2010 Russian Census, 2011 German Census, 2008 Israeli Census, and a pooled sample of the 2009–2013 ACS. Census data for Ukraine and Belarus are also available on IPUMS. However, migration to Russia from other post-Soviet countries was substantial after the collapse of Communism (Denisenko, 2020). We thus focus on Russian-born individuals who remained in Russia or who migrated to the West.

who first immigrated at age 25 or older.[17] We impose the same sample selection criteria across each of the three destination countries. Appendix Table A5 shows that our main results are robust to an immigration age cutoff of 30 or 35.[18]

5.3 Outcome Variable Construction

Our primary outcome variable is years of educational attainment. In each destination country, we rely on the finest available educational attainment measure and generate a continuous variable denoting years of education using the International Standard Classification of Education 1997 (ISCED).

We analyze differences in three labor market outcomes that are available in all three destination countries: an indicator for whether the individual was employed in the census reference period, an indicator for whether they work in a high-skill occupation, and an indicator for whether they work in a high- or medium-skill occupation. We code skill groups using the International Standard Classification of Occupations 2008 (ISCO), coding major groups 1–3 as high skill, and major groups 4–8 as medium skill. In the US and Israel, we analyze differences in the logarithm of total personal income excluding welfare and social security payments (income is not provided in the German census). In the US, we analyze differences in self-reported English language ability using an indicator for whether the person speaks English well, very well, or speaks only English (the German and Israeli censuses do not provide language ability).

Because estimating education-emigration profiles requires combining information from origin and destination countries (see Section 6.2), it is important to use a measure of education that is comparable across countries (so that a given individual would give the same answer regardless of what country they live in). To do so, we standardize education categories using ISCED, and aggregate classifications up to major categories: lower secondary or less (ISCED levels 0–2), upper secondary (level 3), post-secondary (level 4), and tertiary (levels 5–6). Because there is likely significant heterogeneity in the content and quality of educational programs across origin countries, we rely exclusively on within-origin-country variation in our analysis.

[17] To define cohorts consistently across survey years, we measure age as the difference between birth year and survey year in Germany and the US (the Israeli censuses prior to 2008 group age and birth year into 5-year intervals).

[18] While this sample restriction is useful for focusing on working-age adults, and for ensuring that most education was obtained prior to migrating, it comes at the cost that our estimates no longer apply to the full population of immigrants. Appendix Table A5 shows that results estimated in the full sample are very similar in Germany and the US, but attenuated (though of consistent sign) in Israel.

5.4 Sample Summary Statistics

Appendix Table A1 displays summary statistics for our sample of Western European, Soviet satellite, and USSR immigrants by destination country along with a native-born sample in the same age range. Compared with the native-born in each country, Communist Bloc immigrants are slightly more likely to be women, and more likely to be married. In Germany, Communist Bloc immigrants are slightly less likely to be employed, and less likely to be employed in high-skill jobs, compared with natives. In the US, there is almost no gap in employment outcomes relative to natives or Western European immigrants. In Israel, Communist Bloc immigrants are as likely to be employed, but somewhat less likely to find a high-skill job, compared with natives. Education differences vary: in Germany, satellite immigrants are the most educated group, whereas in the US they are less educated than Soviet immigrants but more than Western European immigrants and natives. In Israel, Soviet immigrants—who comprise the vast majority of Communist Bloc immigrants—are more educated than both native Israelis and Western European immigrants.

The Mincerian returns to education were lower in the Communist Bloc than in the major destination countries. Earnings data from 1979–1989 show that one additional year of schooling is associated with a log-point increase in wages of 0.08, 0.09, and 0.06 in West Germany, the United States, and Israel respectively, but only of 0.02 in Poland (Bils and Klenow, 2000) and 0.04 in 1990s Russia (Cheidvasser and Benítez-Silva, 2007). Mincer coefficients estimated on Communist Bloc immigrants in our data are higher in the US than in Germany or Israel (see Appendix Table A3), consistent with estimates in Bils and Klenow (2000). Unfortunately, censuses from Communist Bloc countries do not include income. However, we report estimates from Mincer-type regressions with employment or job skill dummies as an outcome in Appendix Table A3. Curiously, one more year of education is generally associated with a modestly higher probability of high-skill employment in the Communist Bloc than in Germany or Israel (coefficients are roughly similar to those from the US). In light of the lower Mincerian returns to income in the Communist Bloc compared to the West, this finding suggests that high-skill jobs were more selective on education in the Communist Bloc, but did not pay very much more.

5.5 Definition of Policy Regimes

In our main analysis, we focus on the three time periods we believe best distinguish our three policy regimes of interest. Such an approach requires considerable simplification, but we argue that this particular division effectively captures the most important variation in migration incentives and constraints. We refer to the first period, from 1962 to 1986, as the *early refugee* period. In this period, emigration was extremely difficult and motivated to a great degree by persecution. Before

the Berlin Wall was built in 1961, it was significantly easier to travel to West Germany—we therefore exclude these years from our main analysis (but use this period to estimate the impact of the Berlin Wall construction on migrant selection). The second period includes the years surrounding the collapse of Communism, from 1987 to 1992.[19] We refer to this period as the *late refugee* period. This period is characterized by emigration that was significantly easier for those who could claim refugee or ethnic minority status, and thus was dominated by members of these groups.[20] The period from 1993 to 2003 we refer to as the period of *economic migration*. The crucial year 1993 marks the landmark Asylum Compromise in Germany, which imposed a binding cap on the number of ethnic German resettlers and effectively closed the asylum channel for prospective Communist Bloc immigrants. Beginning in 2004, several former Communist Bloc countries joined the European Union, significantly changing the migration landscape—we therefore exclude these years from analysis. Note that because the Israeli census groups immigrants' arrival years into periods, we must use slightly different definitions of each regime: 1962 to 1989, 1990 to 1991, and 1992 to 2003. Nevertheless, because 1990 and 1991 represent the bulk of immigration flows, this should not significantly affect comparability across countries. Appendix Table A5 shows that our main results are robust to alternative definitions of these policy regimes.

5.6 Comparison to Western European Immigrants

A simple comparison across arrival-year cohorts may reflect general changes in immigration policy at the destination—for example, a skill-biased shift in visa category allocations—trends in labor demand for skilled compared to unskilled workers, or secular trends in the educational attainment of prospective migrants. To isolate the effect of the collapse of Communism on migrant selection, we therefore use immigrants from Western Europe as a comparison group.[21] There were no significant changes to German, US, or Israeli immigration policy that specifically affected immigrants from Western European countries throughout our study period.[22] Demographic trends in Western

[19]The cohort cutoff year of 1987 is chosen for two reasons. First, it represents the beginning of major reforms in the USSR with respect to emigration policy. Second, the 1990 US Census does not disaggregate immigration year within the 1987–1990 period. We show that our results are robust to using 1989 (the collapse of Communism in Eastern Europe) as the cohort cutoff year, and excluding the 1990 census data, in Appendix Table A5. This is unsurprising, as migration flows in 1987 and 1988 were a small share of overall flows between 1987 and 1993, as shown in Figure 1.

[20]Although the asylum process in both the US and Germany is designed to exclude applicants who did not face persecution or the threat of persecution, many people who left the Communist Bloc as refugees were undoubtedly motivated by economic considerations. We assert only that migration during the late refugee period was significantly more motivated by persecution relative to the economic migrant period. While migrants in the late refugee period left for many different reasons, including past or current persecution, fear of the restoration of old regimes, and a lack of civil liberties, we believe these motives can be coherently subsumed into a "home amenity" term.

[21]We include immigrants from IPUMS' Western, Northern, and Southern Europe (excluding Albania).

[22]One major exception is the easing of immigration restrictions in Germany as new countries were admitted to the European Union. Excluding immigrants from countries that were admitted during our study period does not alter our

and Eastern Europe were relatively similar during our study period.[23]

5.7 Estimating Equations

Measuring changes in education: To measure how immigrants' average educational attainment changed across regimes, we estimate the following regressions, separately for each destination country, on a sample of Communist Bloc immigrants and native-born:

$$Y_i = \beta_1 Post93_i + \beta_2 Post87_i + X_i\Gamma + \epsilon_i \tag{2}$$

where Y_i is the educational attainment of person i; $Post93_i$ is a dummy equal to 1 if person i immigrated in or after 1993; $Post87_i$ is a dummy equal to 1 if the person immigrated in or after 1987;[24] X_i is a vector of control variables including a country-of-origin fixed effect, a survey-year fixed effect, and 5-year bin dummies for age fully interacted with gender; and ϵ_i is an error term. Note that natives do not contribute to the estimation of β_1 or β_2 except through Γ due to the inclusion of a country-of-origin fixed effect. Our primary coefficient of interest, β_1, represents the average change in education from the late refugee to the economic migrant period, among immigrants from the same origin country, controlling for age and gender differences using native profiles,[25] and allowing for common differences across survey years. Our second coefficient of interest, β_2, estimates the analogous change for late refugees relative to early refugees. In all regressions we apply individual weights to estimate population parameters, and adjust standard errors to account for census sampling methodology.

To compare changes for Communist Bloc cohorts to those for Western European cohorts, we add Western European immigrants to the sample and interact the cohort dummies with a Communist Bloc dummy, yielding difference-in-differences regressions of the form:

$$\begin{aligned} Y_i =& \beta_1 Communist_i \times Post93_i + \beta_2 Communist_i \times Post87_i \\ &+ \beta_3 Post93_i + \beta_4 Post87_i + X_i\Gamma + \epsilon_i \end{aligned} \tag{3}$$

where *Communist*$_i$ is a dummy variable equal to 1 if person i is an immigrant from a Commu-

main results (see Appendix Table A5).

[23] See Appendix Table A2 for details. From the 1970s to the 1990s, total population grew by 7% in Western Europe and 11% in Eastern Europe. During this period educational attainment expanded faster in Eastern Europe than Western Europe, suggesting that estimated changes in self-selection for Eastern European immigrants will be biased upward.

[24] The Israeli censuses group immigrant arrival years into intervals, so our measurement departs slightly from that for the Germany and the US. Specifically, we group 1992–2008 arrivals in the 2008 census data, and group 1990–1991 and 1980–1989 arrivals in both the 2008 and 1995 census data.

[25] As shown in Appendix Table A5, our results are not sensitive to excluding the native-born from our sample.

nist Bloc country, and with other variables defined as in (2). Our coefficients of interest, β_1 and β_2, capture the average difference in education across Communist Bloc immigrant arrival cohorts from the same origin country, relative to Western European cohorts arriving in the same period, controlling for age and gender differences using native-born profiles, and allowing for common differences across survey years.

Measuring Changes in Economic Outcomes: To measure changes in immigrants' outcomes across policy regimes, we estimate (3) adding 5-year bin dummies for years since arrival (with 1-year bins for the first 5 years) fully interacted with gender to the control vector X_i.

Construction of the Berlin Wall: The construction of the Berlin Wall in 1961 made immigration into West Germany substantially more difficult (see Section 3.1). This provides us with an additional test of the impact of emigration barriers on migrant selection. We measure the average change in Communist Bloc immigrants' educational attainment, relative to the change for Western European immigrants arriving in the same period, with the following difference-in-differences regression:

$$Y_i = \beta_1 Communist_i \times Post62_i + \beta_2 Post62_i + X_i\Gamma + \epsilon_i \tag{4}$$

where $Post62_i$ is a dummy equal to 1 if person i immigrated in or after 1962, and other variables are defined as in (3). We estimate this regression on a sample of native-born and Communist Bloc or Western European immigrants arriving between 1955 and 1986 in the German micro-census data.[26]

6 Results

This section presents our main results estimating the impact of the collapse of Communism on migrant selection, and interprets those results through the lens of our framework in Section 4. We proceed to consider alternative explanations of our results.

[26]Immigrants are identifiable in the German micro-censuses we use based on citizenship, and East Germans are not categorized separately. We therefore focus on arrivals from the USSR, Poland, Romania, Hungary, Czechoslovakia, and Bulgaria. Note that immigrants arriving in the present-day territory of East Germany will be counted as immigrants to Germany in micro-census years after reunification. Under the assumption that the construction of the Berlin Wall did not substantially change immigrant selection among immigrants moving to East Germany, this definition will bias our results toward zero.

6.1 Education

The transition from refugee migration to economic migration led to a drop in the average education of immigrant arrivals in all three destination countries, as shown in Column 1 of Table 2. This result holds when we use Western Europeans as a comparison group, as shown in Column 3, and does not depend on whether we control for age and gender differences, as shown in Column 4. One potential explanation for this finding is that emigration was easier in the post-collapse period, and that emigration barriers were relatively more difficult for workers with lower education to overcome. Alternatively, there may have been a compositional shift toward migrants who are less positively self-selected. A simple comparison of pre-collapse to post-collapse immigrants mixes these two forces (see Table 1). In order to distinguish between them, we need to examine results separately for each of our three policy regimes.

We find that the economic migrant cohort was less educated than the late refugee cohort in all three destination countries. This result holds whether we compare cohorts directly (Column 2) or use Western Europeans as a comparison group (Column 5), and does not depend on whether we control for age and gender differences (Column 6). In the single-differences specification shown in Column 2, this difference is about 0.2 years in Germany and the US and 1.3 years in Israel (all p-values < 0.01). Compared with Western European immigrants (Column 6), the difference is similar or starker: 0.8 years in Germany, 0.5 years in the US, and 1.2 years in Israel (all p-values $<$ 0.01). These estimates are not driven by any one origin country, as shown in Appendix Figure A3, or any particular year, as shown in Appendix Figure A1, which plots coefficients for Germany and the US by arrival year. These results indicate that changes in migration costs resulting from the removal of emigration barriers cannot fully explain the higher education levels of refugees.

The decline in educational attainment from the late refugee to the economic migrant period occurred throughout the education distribution (see Appendix Table A4), and is most pronounced, in percentage terms, among the highest-educated workers in each destination country. This finding is consistent with persecution driving highly educated workers to migrate, as predicted by our model.

There are two possible interpretations of this change: either education levels were higher on average among persecuted groups—which comprised a bigger share of immigrant flows during the late refugee period compared to the economic migrant period—or there was a greater skill bias in migrant self-selection from persecuted sub-populations compared to non-persecuted sub-populations, as illustrated in our model. As we describe in Section 6.2, our results support the second explanation: migration rates at the top of the education distribution were relatively higher for Jews and ethnic Germans. While the first explanation—that persecuted groups were more edu-

cated on average—may partly explain our findings, it alone cannot be driving our results. Although Jews were the most educated group within the Soviet Union (Kravetz, 1980, Dowty, 1987), ethnic Germans were among the least educated (Mukhina, 2007). Our results are robust to excluding Jewish immigrants from our sample, which is consistent with within-group differences in selection playing a key role in driving the changes we observe (see Appendix Table A5).

Our setting offers two natural experiments to estimate the impact of migration costs on migrant selection. The direction of this impact is theoretically ambiguous and depends on how emigration barriers—which are typically easier for the better-educated to navigate—compare with the risks of failed escape such as job loss—which likely impose a greater burden on better-off workers. First, we compare the early refugee to the late refugee cohorts: these cohorts migrated for similar reasons but faced very different migration costs. We find that the average education of Communist Bloc immigrants fell compared to Western European immigrants in Germany and the US, in the range of 0.6–0.8 years, but rose in Israel by 1.6–2.2 years. The differences across destination countries may reflect the fact that emigration was somewhat more open for Jews traveling to Israel than for other groups in the pre-collapse period (Dowty, 1987). It may also be that policy changes in the US in 1989 led some highly educated Jews—who would have preferred to live in the US but could not obtain an entry visa—to instead move to Israel (Cohen and Haberfeld, 2007). Second, we compare Communist Bloc immigrants arriving in Germany before and after the construction of the Berlin Wall in 1961, which made migration into Germany substantially more difficult. As shown in Appendix Table A10 Columns 1 and 2, the average education of Communist Bloc immigrants rose after the construction of the Berlin Wall, by between 1–2 years.

6.2 Mechanisms Behind the Higher Education of Refugee Immigrants

What explains the lower educational attainment of immigrants arriving in the economic migrant period compared to the late refugee period? Changes in destination-country immigration policies are highly unlikely to explain this change, as the most significant policy changes in the US and Germany were designed to make the asylum process more difficult, limit social assistance programs, and favor high-skill migrants. Emigration restrictions, having been largely lifted by 1989, were roughly constant across these two periods. Our findings therefore point to more positive self-selection of migrants in the late refugee period compared to later economic migrants. This section provides evidence from education-emigration profiles that the change in self-selection was partly due to persecution, which disproportionately increased emigration among the highly educated. We discuss alternative mechanisms for the change in self-selection, and rule out that these can fully explain our results, in Section 6.4.

Table 2: Differences in Educational Attainment Across Immigrant Cohorts

	Single Differences		Diff in Diffs (vs. Western Europe)			
Outcome: Years of Education	(1)	(2)	(3)	(4)	(5)	(6)
Immigrants in Germany						
Communist x Post-93	-0.223***	-0.151***	-0.984***	-0.878***	-0.807***	-0.779***
	(0.030)	(0.030)	(0.102)	(0.101)	(0.125)	(0.125)
Communist x Post-87		-0.529***			-0.632***	-0.581***
		(0.053)			(0.151)	(0.150)
Post-93			0.892***	0.654***	0.768***	0.628***
			(0.097)	(0.097)	(0.121)	(0.121)
Post-87					0.244*	0.050
					(0.142)	(0.142)
Observations	512,036	512,036	529,736	529,736	529,736	529,736
Demographic Controls	x	x		x		x
Immigrants in US						
Communist x Post-93	-0.046	-0.168***	-1.200***	-1.124***	-0.488***	-0.493***
	(0.029)	(0.034)	(0.041)	(0.041)	(0.053)	(0.053)
Communist x Post-87		0.257***			-0.769***	-0.714***
		(0.038)			(0.053)	(0.053)
Post-93			1.313***	1.076***	0.415***	0.324***
			(0.030)	(0.029)	(0.041)	(0.040)
Post-87					1.158***	0.971***
					(0.038)	(0.037)
Observations	2,989,320	2,989,320	3,108,279	3,108,279	3,108,279	3,108,279
Demographic Controls	x	x		x		x
Immigrants in Israel						
Communist x Post-92	-0.765***	-1.309***	-0.425***	-0.100	-1.290***	-1.165***
	(0.036)	(0.039)	(0.145)	(0.145)	(0.308)	(0.309)
Communist x Post-90		1.643***			2.153***	2.188***
		(0.057)			(0.297)	(0.297)
Post-92			-0.089	-0.664***	0.126	-0.141
			(0.141)	(0.141)	(0.306)	(0.306)
Post-90					-0.211	-0.550*
					(0.292)	(0.292)
Observations	447,097	447,097	451,646	451,646	451,646	451,646
Demographic Controls	x	x		x		x

Notes: An observation is an individual. See Section 5 for data sources. Each sample includes individuals aged 25–65 who are natives or who immigrated between 1962 and 2003 after the age of 25 from the Communist Bloc. Columns 3–6 add immigrants from Western Europe with the same restrictions. All regressions control for country-of-birth and survey-year fixed effects. Demographic controls are 5-year age-bin fixed effects interacted with a gender dummy. Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Our model predicts that persecution can increase the average human capital of migrants when high human capital workers forgo migration for a home amenity, which persecution reduces. There are two testable predictions embedded in this explanation: that highly educated workers in the Communist Bloc were less likely to migrate than workers with medium levels of education, and that this pattern will be attenuated among persecuted groups.

Ideally, we could test these predictions by measuring the probability of migration out of the Communist Bloc at each education level using nationally representative panel data. To our knowledge, no such data exist. However, we can estimate migration rates at each education level by combining origin and destination country census data, and applying Bayes' rule:

$$Pr(M = 1|H = h) = Pr(H = h|M = 1) \times \frac{Pr(M = 1)}{Pr(H = h)}$$

where M is a binary variable with 1 denoting migration out of the Communist Bloc and h is a value of educational attainment H. We estimate $Pr(H = h|M = 1)$ from educational attainment data on Communist Bloc immigrants in Germany, Israel, and the US (weighted by their population sizes) and estimate $Pr(H = h)$ by combining the same data with educational attainment data from the origin country. We estimate $Pr(M = 1)$ from relative population sizes in the three destinations compared to the origin, but since this does not vary with education it acts only as a scaling factor.

To better understand our approach, consider the example of the cohort born in Poland between 1946 and 1986 (aged 25–65 in the 2011 censuses). We can estimate the educational attainment of this cohort using counts in the Polish, German, US, and Israeli censuses. The estimated migration probability for a given educational-attainment group h is thus simply the number of immigrants with education h living in Germany, the US, or Israel who were born between 1946 and 1986 in Poland and immigrated at age 25 or older, divided by the sum of that immigrant count and the number of Poles with education h born in the same period who are residing in Poland as of the 2011 census.

Because we cannot observe persecution directly, we rely on membership in two ethnic minority groups that faced long-standing persecution in the Communist Bloc: Jews and ethnic Germans. Ethnic membership can be observed or inferred in each of the destination countries, as well as in Romania and Russia.[27]

This exercise relies on three main assumptions. First, the selection of migrants who moved to

[27]The German census contains data on religion, but not ethnicity. Since naturalization rates in Germany were substantially higher among ethnic Germans than other immigrant groups (Marshall, 2000), we use German citizenship to proxy for German ethnicity among Communist Bloc immigrants. The US census contains information on ancestry and language: we code ethnic Germans based on German ancestry and Jews based on Israeli ancestry or Hebrew or Yiddish language. The Israeli census includes data on religion. The Romanian census includes information on religion and ethnicity, and the Russian census includes information on mother tongue.

destination countries in our sample—Germany, the US, and Israel—must not be too different from selection across all destinations. Because these three destinations represent a great majority (nearly 90%) of emigration from Communist Bloc countries, this assumption is likely to hold. Second, any mortality differences across education groups need to be common in the origin and destination. Throughout our analysis, we restrict our sample to individuals between age 25 and 65 as of 2011, for whom mortality rates are low. Third, educational attainment observed for immigrants in the census needs to reflect investments made in the home country. Again matching our main analysis, we restrict our sample of immigrants to those who first moved at age 25 or older.[28]

We find support for both of our predictions: migration rates out of each origin country are declining at the top of the education distribution, but much less so (if at all) for ethnic Germans and Jews (see Figure 3). In Poland, Hungary, and Romania, migration rates exhibit an inverted U-shape in education: individuals with post-secondary degrees are more likely to migrate than those with tertiary degrees or those with less than a post-secondary degree.[29] In Russia, migrant selection is negative: those with tertiary degrees are the least likely to migrate, and those with less than an upper secondary degree are the most likely to migrate.[30] This pattern is not specific to the Communist Bloc: the best-off are less likely to emigrate across many contexts (McKenzie and Rapoport, 2007, Dustmann and Okatenko, 2014, Clemens and Mendola, 2020). While often attributed to illiquid wealth, this common pattern is also consistent with the home amenity effect.[31] Note that this pattern cannot be explained by a standard Roy model of immigrant sorting based on income, as the returns to education were higher in the West (see Section 5.4).

In Romania and Russia, where ethnic group is identifiable, we find that the decline in migration at the top of the educational attainment distribution was substantially less pronounced for Jews and ethnic Germans. In the Romanian population, those with a tertiary degree were only 64% as likely to migrate as those with a post-secondary degree. For ethnic Germans and Jews in Romania, that share rises to 93% and 81% respectively. In the Russian population, those with a tertiary degree

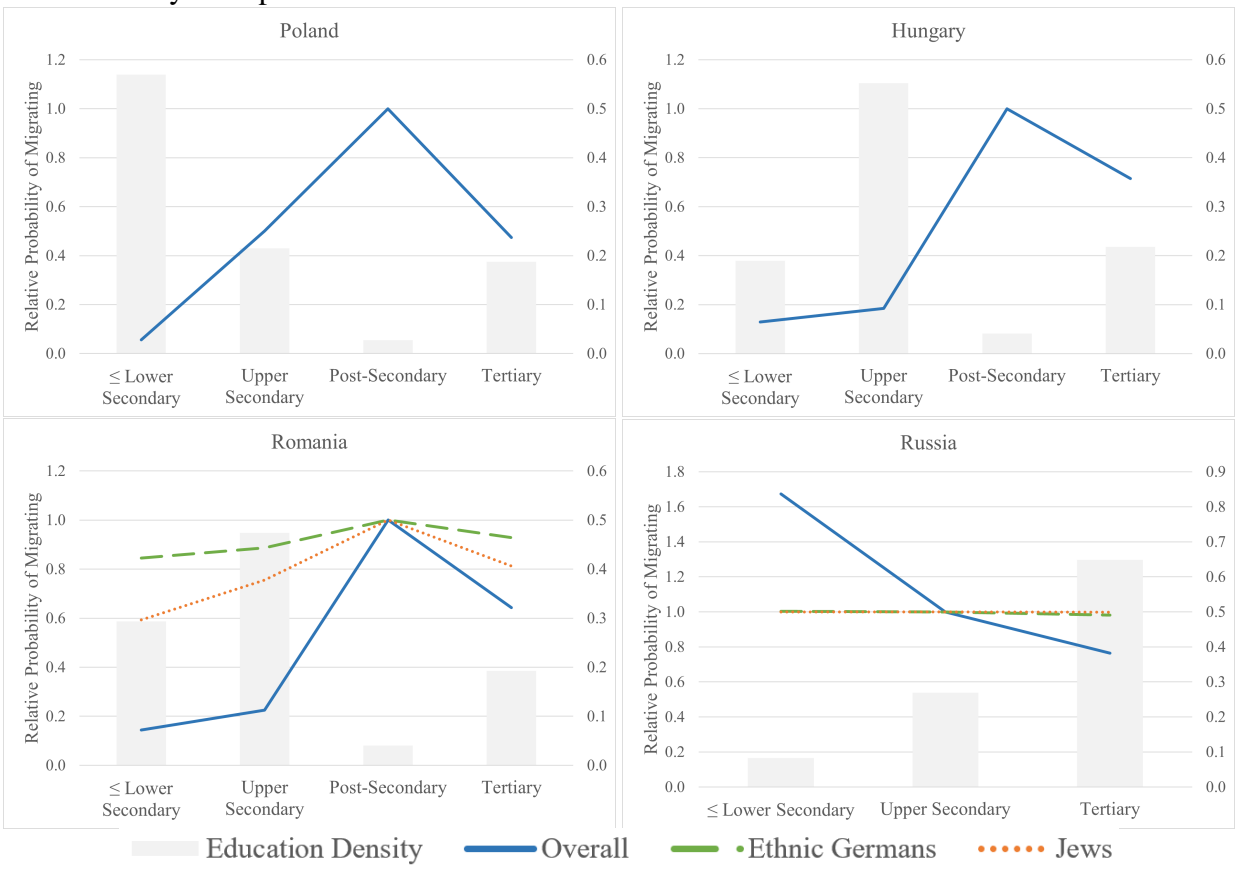
[28]These restrictions imply that our estimates apply to sub-populations—those born between 1946 and 1986 who were living in their home country up until the age of 25—and selection patterns may be different in the broader population. Nevertheless, we view these estimates as relevant to our study given our focus on working-age adult immigrants. Appendix Table A5 shows that changes in selection were similar in the full, age-unrestricted sample in Germany and the US. The drop in the economic migrant period is muted in Israel in the broader sample.

[29]Post-secondary degree holders represent small shares of the population still living at the origin in these three satellite countries, but significant shares (11–13%) of emigrants.

[30]Appendix Figure A2 shows education-emigration profiles broken down by period of migration. The negative selection pattern out of Russia is driven by the economic migrant period, during which migrants with lower secondary education or less were relatively much more likely to leave than before. This change is not observed in Poland, Hungary, or Romania, and is consistent with higher emigration barriers in Soviet Russia than in the Soviet satellites.

[31]The model of McKenzie and Rapoport (2007) describes an agricultural household, whereas the Communist Bloc countries were largely urbanized by this period. Urbanization rates in 1990 are around 60–75% for most Communist Bloc counties (World Bank Development Indicators).

Figure 3: Migration Rates are Lower for the Highest-Educated Individuals, Except Among Persecuted Minority Groups.



Notes: Each line shows the estimated probability of migrating. Migration rates are normalized by the rates for post-secondary education (or upper secondary in Russia). Results cannot be estimated for ISCED level 4 (post-secondary) in Russia, as this degree is not separately categorized in the Russian census. Because migration, especially among non-Russian ethnic groups, to Russia from other Soviet Republics was substantial in the 1990s (Denisenko et al., 2020, Ioffe, 2020), we include Jewish and German immigrants from any Soviet Republic when computing migration probabilities to the West. Gray bars show the distribution of educational attainment for each origin-country cohort, with percentages shown on the secondary vertical axis.

were only 76% as likely to migrate as those with a post-secondary degree. For Soviet Germans and Jews, that share rises to 98% and 100% respectively. Whatever is reducing migration at the top of the education distribution is more pronounced among members of the majority ethnic group, and thus consistent with a home amenity effect that is reduced by persecution.

6.3 Labor Market Outcomes and Language Acquisition

The decline in immigrants' education is echoed in the declining quality of the labor market outcomes they obtained and the language skills they acquired in the destination (Table 3). In Germany and the US, economic migrants were 6–7 pp. less likely to work in high-skill jobs than late refugees

(p-vals < 0.01). In the US and Israel, where we observe real earned income, economic migrants earned 0.18–0.22 log points less than late refugees (19–24% less, p-vals < 0.01 and < 0.05 respectively). In the US, the only destination where we observe language skills, economic migrants were 10 pp. less likely to report speaking English well (p-val < 0.01).

Differences in labor market outcomes between the early and late refugee cohorts also echo differences in educational attainment. In Germany and the US, late refugees obtained worse outcomes than early refugees. They were 1–2 pp. less likely to be employed and 5–7 pp. less likely to find high-skill jobs. In the US they earned 0.17 log points (19%) less and were 11 pp. less likely to speak English. In Israel, where late refugees had 2.2 more years of education, they were 10 pp. more likely to be employed, but the difference is driven by low-skill jobs.

Differences across immigrant cohorts may reflect two distinct channels: differences in human capital at the time of arrival, or differences in trajectories given the initial level of human capital. Because we focus on individuals who immigrated at age 25 or older, observed differences in education likely reflect differences upon arrival, and our findings are robust to using immigration-age cutoffs of 30 or 35, (see Appendix Table A5). Labor market outcomes and language acquisition, however, will in part reflect immigrants' human capital investment after arrival, and incentives to invest in destination-specific capital may be higher for certain immigrant groups (Cortes, 2004). Note, however, that if one group experiences larger gains in the destination, we cannot distinguish whether this is because those immigrants faced different incentives to invest in human capital, or whether those gains reflect delayed returns to human capital acquired prior to arrival.

We pursue two strategies to distinguish differences in initial human capital from differences in trajectories. First, we modify equation (3) to include a years-of-education fixed effect interacted with gender. If controlling for education reduces the magnitudes of the estimated coefficients on our cohort dummies, this supports the conclusion that differences in outcomes were partly driven by differences in human capital upon arrival.[32] Our second strategy is to disaggregate survey years to allow us to track cohorts' outcomes over time. We modify equation (3) by interacting each cohort dummy, and its interaction with *Communist*$_i$, with a survey-year fixed effect. We restrict each cohort such that arrival-year compositions are constant across survey years, and only recent arrivals (within 5 years of the first year we observed them) are included.[33]

[32] If educational attainment is positively, but imperfectly, correlated with other, unobserved dimensions of human capital, then this test will understate the importance of human capital on arrival.

[33] Specifically, for the US, we use arrival years 1975–1980 for the early refugee cohort, 1987–1990 for the late refugee cohort, and 1995–2000 for the economic migrant cohort. For Germany, we use arrival years 1980–1985 for the early refugee cohort, 1987–1991 for the late refugee cohort (taking the first observation as 1991 instead of 1989 to avoid a compositional change across survey years), and 1995–2000 for the economic migrant cohort.

Table 3: Differences in Labor Market Outcomes and Language Skills Across Immigrant Cohorts

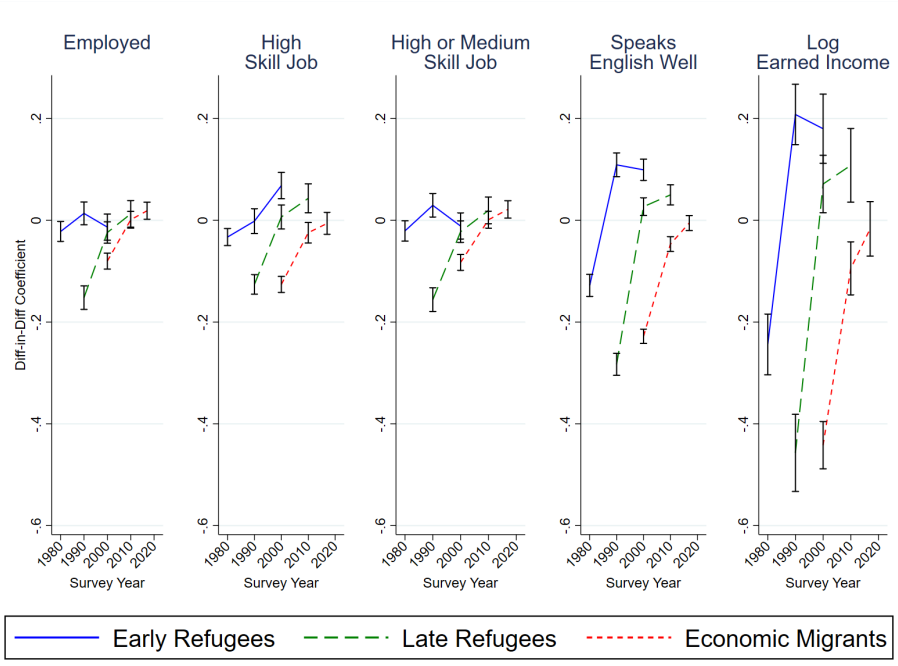
	(1) Employed	(2) High-Skill Job	(3) High or Medium Skill Job	(4) Log Income	(5) Speaks English Well
Immigrants in Germany					
Communist x Post-93	-0.018	-0.066***	-0.063***		
	(0.012)	(0.013)	(0.013)		
Communist x Post-87	-0.009	-0.069***	-0.023		
	(0.016)	(0.016)	(0.017)		
Post-93	-0.012	0.025*	0.003		
	(0.012)	(0.013)	(0.014)		
Post-87	-0.179**	-0.184***	-0.283***		
	(0.079)	(0.061)	(0.077)		
Observations	529,736	529,736	529,736		
Dep. Var. Mean	0.740	0.168	0.570		
Immigrants in US					
Communist x Post-93	-0.004	-0.057***	-0.007	-0.217***	-0.100***
	(0.006)	(0.007)	(0.006)	(0.018)	(0.005)
Communist x Post-87	-0.019***	-0.052***	-0.023***	-0.170***	-0.109***
	(0.006)	(0.006)	(0.006)	(0.017)	(0.005)
Post-93	0.014***	0.032***	0.016***	0.150***	0.047***
	(0.005)	(0.006)	(0.005)	(0.015)	(0.003)
Post-87	0.003	0.054***	0.009**	0.132***	0.088***
	(0.004)	(0.005)	(0.004)	(0.013)	(0.003)
Observations	3,108,279	3,108,279	3,108,279	2,691,691	3,108,279
Dep. Var. Mean	0.70	0.30	0.69	10.00	0.71
Immigrants in Israel					
Communist x Post-92	-0.009	-0.037	-0.009	-0.178**	
	(0.035)	(0.033)	(0.035)	(0.089)	
Communist x Post-90	0.099***	-0.050	0.018	-0.012	
	(0.033)	(0.033)	(0.034)	(0.081)	
Post-92	-0.016	0.012	-0.034	0.310***	
	(0.034)	(0.033)	(0.035)	(0.089)	
Post-90	-0.014	-0.013	0.014	-0.120	
	(0.033)	(0.032)	(0.034)	(0.080)	
Observations	451,646	451,646	451,646	299,323	
Dep. Var. Mean	0.73	0.19	0.55	9.34	

Notes: See Table 2 for sample information. Columns with missing results indicate that the outcome is not available in that country. High- and medium-skill jobs correspond to ISCO-08 groups 1–3 and 4–8, respectively. Dependent variable means shown for all Communist Bloc immigrants.

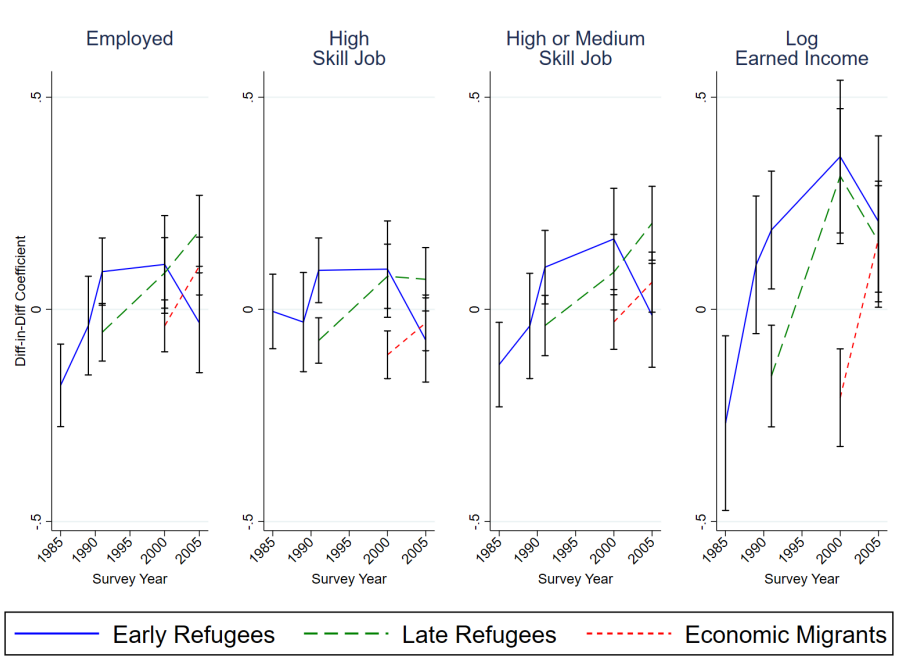
*** p<0.01, ** p<0.05, * p<0.1

Figure 4: Trajectories of Immigrant Outcomes by Cohort, US and Germany.

United States



Germany



Notes: Results for Germany use micro-census data, which includes earned income. Each plot shows average outcomes obtained by Communist Bloc immigrants relative to Western European immigrants. All regressions control for county-of-birth fixed effects, age-bin fixed effects interacted with a gender dummy, and years-in-destination fixed effects interacted with a gender dummy. The early refugee cohort includes arrival years 1975–1980. The late refugee cohort includes arrival years 1987–1990. The economic migrant cohort includes arrivals years 1995–2000. 95% confidence intervals shown in black.

We find evidence that both channels are at play: later Communist Bloc cohorts arrived with less education and experienced slower labor market gains relative to earlier cohorts. Broadly speaking, controlling for education reduces differences across cohorts by one-third to one-half, but significant gaps remain (see Appendix Table A6).

Tracking immigrants' outcomes across survey years in the US shows that every Communist Bloc cohort, but especially the late refugee cohort, experienced substantial gains over time in several outcomes relative to Western European immigrants (see Figure 4). Shortly after arriving in the US, late refugees are much less likely to be employed relative to Western European immigrants arriving during the same interval. They are also less likely to hold a skilled job, less likely to be fluent in English, and earn much less. However, within 10 years they have closed the gap in each of these measures. Though early refugees and economic migrants also experience rapid gains relative to Western Europeans, the gains are generally largest for the late refugee cohort. Results in Germany are broadly similar, but standard errors are substantially larger. We did not conduct this analysis in Israel because Israeli censuses use different, overlapping arrival-year groupings. Together, these results suggest that both differences on arrival and faster labor market gains explain the differences across cohorts.

6.4 Alternative Explanations

In this section we consider alternative explanations for the lower educational attainment observed for economic migrants compared to late refugees. While many of these mechanisms surely played an important role in determining emigration decisions, we argue than none can fully explain our findings. These alternative explanations include: changing liquidity constraints owing to the Eastern European recessions of the 1990s, increasing returns to education in the Communist Bloc, networks and family reunification, changes in educational institutions within the Communist Bloc, education acquired after arrival in the destination, differences driven entirely by highly educated ethnic groups, sensitivity to cohort definitions, and differential attrition.

Changing Liquidity Constraints. While liquidity constraints *per se* cannot explain the change in selection from the late refugee to the economic migrant period, it is possible that a *change* in liquidity constraints could generate a drop in migrant selection. In particular, if liquidity constraints were loosened during the economic migrant period—owing for example to economic recovery from the recessions that followed the collapse of the Communist Bloc—this could make it relatively easier for workers with lower human capital to emigrate.

Three pieces of evidence suggest that changes in liquidity constraints are not driving our re-

sults. First, the drop in educational attainment is pronounced at the top of the education distribution, where liquidity constraints should play less of a role (see Appendix Table A4). Second, although post-collapse recessions were substantially deeper in former USSR countries than in former satellite countries, there were similar changes in selection for these two immigrant groups (see Appendix Table A7 for results and Appendix Figure A4 for a timeline of recession and recovery in the Communist Bloc). Third, excluding immigrant arrivals after 1999, when Soviet economic recovery began, changes the results of Appendix Table A7 very little.

Income Inequality in the Communist Bloc. If economic restructuring in the Communist Bloc led income inequality to increase relative to the West, this may have reduced the relative incentive for highly educated workers to migrate, following the logic of the Borjas (1987) model. Although this fact alone can explain neither the inverted U-shape in Figure 3 nor the shift in the ethnic composition of Communist Bloc migrants, it could explain the lower average education of immigrants in the post-collapse period compared to the pre-collapse period. To test whether our results could be driven by economic restructuring, we test whether the decline in education across immigrant cohorts was more pronounced for groups that were more affected by restructuring. Although the nature and the labor market impacts of post-Communist reforms varied by country, restructuring generally had a more pronounced effect on inequality within three groups: male workers, young workers, and workers in Soviet (as opposed to satellite) countries (Brainerd, 1998, Prasad and Keane, 1999). If increases in the returns to education are driving our results, we would expect to see larger drops in the educational attainment of immigrants after the collapse among these three groups. For each of our three groups of interest, we run a version of Equation (3) that includes interactions between our main cohort dummies and a dummy variable for membership in the group more affected by wage decompression. To examine the effect of economic restructuring in the absence of changing barriers to emigration, we focus on the comparison between the late refugee period and the economic migrant period. Our findings, shown in Appendix Table A8, do not support this alternative hypothesis: differences in changing selectivity across more- and less-affected groups are generally small, statistically insignificant, and inconsistently signed. For example, the drop in average educational attainment is similar for immigrants from the satellite countries compared to those from the Soviet Union in all three destination countries. The drop in educational attainment is slightly greater for male workers in Germany, but smaller in Israel; the drop for young workers is slightly greater in Israel, but smaller in Germany. While changes in inequality in the Communist Bloc surely affected migration decisions, we do not find evidence that it is driving our main results.

Appendix Table A11 shows differences in outcomes by gender. While gender differences in

the economic migrant group are generally small compared to unconditional changes in Germany and Israel, the lower income compared to late refugees is significantly muted for men in the US. This is surprising in light of growing incentives for high-earning men to remain in the Communist Bloc after 1993 due to wage decompression.

Networks and Family Reunification. If immigrant networks in the destination grow over time, with early arrivals "paving the way" for future arrivals, this could also explain the observed drop in immigrants' average educational attainment over time (Munshi, 2003).[34] However, networks are unlikely to explain the changes we observe, given the substantial shift in the ethnic makeup of arrivals: refugees came predominantly from minority ethnic groups, while economic migrants came predominantly from majority ethnic groups. Moreover, there was substantial variation in the pre-collapse size of immigrant networks across origin- and destination-country groups. For example, significant Russian and Polish populations already lived in the US prior to the collapse of Communism, whereas Russian arrivals in Germany and Israel after 1987 dwarfed the existing diasporas there. Nevertheless, we observe roughly similar drops in educational attainment during the economic migrant period among Soviet and Satellite immigrants in all three destinations, as shown in Appendix Table A7, and no single origin country is driving our results, as shown in Appendix Figure A3.

A specific version of this mechanism is family reunification: immigrants arriving during the economic migrant period might have in great part been the less-educated family members of the immigrants arriving during the refugee periods. However, family reunification did not play a major role in this context. For example, only 10% of USSR immigrants arriving in the US in the 1990s received immigrant status on the basis of kinship (Denisenko, 2020). Consistent with this, we observe few immigrants in Germany reporting that they have nuclear family residing in their origin country. Appendix Table A9 shows that, through survey year 1991, only 14–15% of Communist Bloc immigrants reported having a spouse or child still living at the origin. This share falls to 2–3% by 2000–2005, suggesting that family reunification did occur, but not in substantial numbers. Again, this is unsurprising given the changes in ethnic composition discussed above.

If economic migrants were in large part the family members of earlier refugees, then we would expect many refugees who arrived recently to report having family at the origin, and for this share to decrease with time spent in the destination as their family members eventually joined them. On the other hand, economic migrants should be much more likely to arrive with no family at the origin, and this share should decrease much more slowly over time. While we do not have panel

[34] Buggle et al. (2020) document the important role that peer migration decisions played for Jews in Germany between 1933 and 1941.

data on individual migrants, we can estimate family reunification profiles using cross-sectional variation in time spent in the destination. Appendix Table A9 shows that the estimated rate of family reunification is very similar across cohorts: there is a 0.8–0.9% reduction in the probability of having family at the origin per year spent in the destination. This finding is robust to controlling for age and country-of-origin effects.

Changes in Communist Bloc Educational Attainment. A general reduction in educational attainment within the Communist Bloc, relative to Western Europe, around the collapse of Communism could explain the drop in educational attainment of Communist Bloc immigrants even without changes in migrant selection. As shown in Appendix Table A2, the reverse is true: educational attainment grew faster in Eastern Europe than in Western Europe between the 1970s and 1990s. Additionally, our results hold when we restrict our analysis to older arrivals (see Appendix Table A5), who would have completed their education well before the collapse of Communism.

Education Acquired in the Destination. If immigrants acquire education after arrival, our results will be driven by both selection into migration at the time of immigration and differences in trajectories post-arrival. Restricting to individuals who immigrated after the age of 25 greatly reduces the possibility that education was obtained in the destination, but some immigrants may continue their education even after the age of 25. Note that, to the extent that differences in post-immigration trajectories are due to differences in unobserved human capital at the point of arrival, this would not fundamentally alter the interpretation of our results. Still, we find that our results are quite robust to restricting our sample to individuals who immigrated after the age of 30 or 35 years (see Appendix Table A5).

Loss of Income Due to Persecution. If persecution threatened earnings potential through a mechanism like the one described in Aksoy and Poutvaara (2021), it could induce well-educated workers in persecuted groups to want to migrate. We do find that the observational returns to education were slightly lower for members of minority groups in the Communist Bloc compared to the overall population, though only for some outcomes and in some countries (see Appendix Table A3). However, this mechanism alone cannot be driving our results. A threat to income would lead the highest-educated workers to emigrate at the highest rates. Instead, we find that the highest-educated workers were much less likely to emigrate (see Figure 3), consistent with a home amenity effect.

Immigrant Sub-Groups and Time Period Definitions. We test whether our results are driven

by Jewish immigrants, who were the best-educated group in the Soviet Union and who migrated in large numbers during our study period.[35] We find that changes in education across Communist Bloc immigrant cohorts are largely similar when we exclude Jewish immigrants (Appendix Table A5), suggesting that our results are driven by changing self-selection within ethnic groups and not only across ethnic groups. Finally, our results are robust to redefining the beginning of the late refugee period to 1989 (the collapse of satellite Communist governments) and to restricting our sample of immigrants to a narrower arrival-year window (1980–1999).

Differential Attrition. A final concern is that differential attrition, due to return migration or death, is complicating our results. In particular, our reliance on the German census of 2011 means that at least 25 years have passed since the arrival of the early refugee cohort. Two pieces of evidence point to a limited effect of differential attrition on our results. First, Appendix Table A10 shows that our main findings hold in the German micro-census pooled 1% samples from 1985, 1989, 1991, 2000, and 2005, which reduces the horizon over which attrition could have occurred. Second, we test for differential attrition explicitly by applying our strategy used to track immigrants' labor market outcomes over time, discussed in Section 6.3, to characteristics that should be fixed over time such as year of arrival, birth year, gender, and educational attainment. Appendix Figure A5 displays the results, plotting differences between Communist Bloc and Western European cohorts over time. While there is some differential attrition, it is modest in size and similar in sign and magnitude across cohorts. This suggests that differential attrition is unlikely to be driving our results.

7 Discussion

This paper analyzes the consequences of the collapse of Communism on the number and characteristics of migrants leaving the Communist Bloc. The removal of exit restrictions in the Communist Bloc led to a massive increase in the number of people migrating to the West. Immigrants arriving after the collapse were less well-educated, and obtained worse labor market outcomes, on average, than those who came before. Given the size of the increase in the number of immigrants, however, differences in characteristics and outcomes are arguably modest. This suggests that Soviet-style emigration restrictions had relatively uniform impacts across the education distribution. To the extent that uniform migration costs should theoretically impose a greater burden on the less well-off

[35]Note that, even if our results were driven largely by Jewish immigrants, this would not change our interpretation of the drop in education from the late refugee to the economic migrant period being driven by a shift from more to less persecuted groups. However, it would imply that the drop in education would be driven by a shift from more to less well-educated groups, rather than from more positively to more negatively selected migrants from within those groups.

(Chiquiar and Hanson, 2005, McKenzie and Rapoport, 2007), this finding may reflect the partial success of Communist Bloc governments in restricting the emigration of the highly educated.

Most surprisingly, we find that across several outcomes the greatest decline in the success of arriving immigrant cohorts occurred not immediately after the collapse (when exit restrictions were removed), but only after 1993 (when Germany closed its asylum channel and most refugee migration ended). We find that the educational attainment, language skills, and labor market outcomes were worse for this later cohort despite immigration policy in the US and Germany becoming more skill-selective over time. We argue that this finding is consistent with refugees being more positively self-selected than economic migrants in this context. This can be explained by a simple model in which workers trade off an income premium from migrating against a home amenity. The model highlights that, in contexts where a highly educated group is electing to forgo migration, persecution can disproportionately induce highly educated workers to migrate, even if it is not directed specifically against them. Combining origin and destination country census data to estimate migration rates across the education distribution, we find that the model characterizes patterns of migrant selection from the Communist Bloc remarkably well.

The effect of persecution on migrant selection may operate through two distinct channels. First, there may be a composition effect as groups that face the worst persecution tend to exit as quickly as possible, and therefore constitute a smaller share of later immigrant cohorts. Second, there may be a change in the level of persecution brought about by the end of Communism. Because of our limited ability to identify persecution at the individual level, we are not able to distinguish between these two channels. However, demographic data from the Communist Bloc suggest that the first channel is likely to be significant. Two populations that faced widespread persecution in the Communist Bloc—Jews and ethnic Germans—have declined in size by 55–90% from their postwar heights (Russian Census, 1989, Tolts, 2020).

Comparison to Other Studies of Refugee Self-Selection. Our finding that refugees from the Communist Bloc were more positively self-selected than the economic migrants who came later is unusual within the sizable literature on refugee migration. Why does our result differ from the more common finding that refugees are negatively selected relative to economic migrants? One possibility is differences in estimation strategies. In particular, many studies on refugee selection compare refugees from one set of countries to economic migrants from a different set of countries. Country-level effects may influence estimated differences between refugees and economic migrants, and complicate interpretations relating to selection from a fixed population. Indeed, Aksoy and Poutvaara (2021)—who employ within-country variation—find more positive selection of male refugees. However, we do not think this is likely to explain the common finding that refugees

are less positively selected than economic migrants. This result appears across several studies, which rely on different sets of refugee-producing countries. Additionally, Chin and Cortes (2015) find that the performance gap between refugees and economic migrants is wider within origin country than across origin countries, although the former result is based on a very small sample.

Instead, we believe that the heterogeneity in selection patterns across studies is due to differences in context. Our migration model offers a few suggestions about which contextual features are likely to matter. If the importance of the home amenity is small relative to that of income, then the home amenity effect is unlikely to be important. To the extent that many Eastern Europeans feel that the important social or cultural aspects of their home countries cannot be found elsewhere,[36] this may support the appropriateness of our model in this context. If the home amenity is relatively less important to the highly educated, our model's prediction can be reversed, and refugees will be less positively selected relative to economic migrants. This alternative model may be appropriate in a post-revolutionary setting characterized by hostility toward educated elites, such as the period shortly after the Russian Revolution. It may also be appropriate if the highly educated are more cosmopolitan, that is, more likely to feel that the amenities they enjoy at home can also be found in other countries. Finally, when the migration premium is much higher for the better-educated, economic migrants will be more positively selected than refugees. This condition is less likely to hold when income gaps between origin and destination countries are substantial across the entire education distribution, as they were between the Communist Bloc and the West. Altogether, our results suggest that the common assumption that refugees are less positively selected is not appropriate to every setting.

References

Abramitzky, Ran, "The Limits of Equality: Insights from the Israeli Kibbutz*," *The Quarterly Journal of Economics*, 08 2008, *123* (3), 1111–1159.

_ , *The Mystery of the Kibbutz: Egalitarian Principles in a Capitalist World*, Princeton University Press, 2018.

_ **and Isabelle Sin**, "Book Translations As Idea Flows: The Effects Of The Collapse Of Communism On The Diffusion Of Knowledge," *Journal of the European Economic Association*, December 2014, *12* (6), 1453–1520.

_ **and Leah Boustan**, "Immigration in American economic history," dec 2017, *55* (4), 1311–1345.

[36]Indeed, Denisenko (2020) argues that experts, prior to the collapse, had underestimated the importance of factors constraining emigration out of the USSR, including native language and family and friends at home.

_ , _ , **Peter Catron, Dylan Connor, and Rob Voigt**, "Refugees without Assistance: English-Language Attainment and Economic Outcomes in the Early Twentieth Century," SocArXiv, Center for Open Science, 2021.

_ , **Leah Platt Boustan, and Katherine Eriksson**, "Europe's tired, poor, huddled masses: Self-selection and economic outcomes in the age of mass migration," *American Economic Review*, 2012, *102* (5), 1832–1856.

_ , _ , **and** _ , "Have the poor always been less likely to migrate? Evidence from inheritance practices during the age of mass migration," *Journal of Development Economics*, may 2013, *102*, 2–14.

Aksoy, Cevat Giray and Panu Poutvaara, "Refugees' and irregular migrants' self-selection into Europe," *Journal of Development Economics*, 2021, *152*, 102681.

Baseler, Travis and Jakob Hennig, "Disastrous Displacement: The Long-Run Impacts of Landslides," *Working Paper*, 2023.

_ , **Thomas Ginn, Robert Hakiza, Helidah Ogude, and Olivia Woldemikael**, "Can Aid Change Attitudes Toward Refugees? Experimental Evidence from Uganda," *Working Paper*, 2023.

Becker, Sascha O., Irena Grosfeld, Pauline Grosjean, Nico Voigtländer, and Ekaterina Zhuravskaya, "Forced Migration and Human Capital: Evidence from Post-WWII Population Transfers," *American Economic Review*, may 2020, *110* (5), 1430–1463.

Bils, Mark and Peter J. Klenow, "Does Schooling Cause Growth?," *American Economic Review*, December 2000, *90* (5), 1160–1183.

Borjas, George J., "Self-Selection and the Earnings of Immigrants," *The American Economic Review*, 1987, *77* (4), 531–553.

_ , "The Economics of Immigration," *Journal of Economic Literature*, 1994, *32* (4), 1667–1717.

_ **and Kirk B. Doran**, "The Collapse of the Soviet Union and the Productivity of American Mathematicians," *The Quarterly Journal of Economics*, 07 2012, *127* (3), 1143–1203.

Boustan, Leah Platt, "Were Jews Political Refugees or Economic Migrants? Assessing the Persecution Theory of Jewish Emigration, 1881-1914," *The New Comparative Economic History: Essays in Honor of Jeffrey G. Williamson*, 2007.

Brainerd, Elizabeth, "Winners and Losers in Russia's Economic Transition," *American Economic Review*, 1998, *88* (5), 1094–1116.

Brell, Courtney, Christian Dustmann, and Ian Preston, "The Labor Market Integration of Refugee Migrants in High-Income Countries," *Journal of Economic Perspectives*, feb 2020, *34* (1), 94–121.

Bruno, Andorra, "U.S. Refugee Resettlement Assistance," *Congressional Research Service*, 2011.

Buggle, Johannes C., Thierry Mayer, Seyhun Sakalli, and Mathias Thoenig, "The Refugee's

Dilemma: Evidence from Jewish Migration Out of Nazi Germany," *CEPR Discussion Paper No. DP15533, Available at SSRN: https://ssrn.com/abstract=3753933*, 12 2020.

Cheidvasser, Sofia and Hugo Benítez-Silva, "The Educated Russian's Curse: Returns to Education in the Russian Federation during the 1990s," *LABOUR*, 2007, *21* (1), 1–41.

Chin, Aimee and Kalena E. Cortes, *The refugee/Asylum seeker*, 1 ed., Vol. 1, Elsevier Inc., 2015.

Chiovelli, Giorgio, Stelios Michalopoulos, Elias Papaioannou, and Sandra Sequeira, "Forced Displacement and Human Capital: Evidence from Separated Siblings," *NBER Working Paper No. 29589*, 2021.

Chiquiar, Daniel and Gordon H. Hanson, "International migration, self-selection, and the distribution of wages: Evidence from Mexico and the United States," *Journal of Political Economy*, apr 2005, *113* (2), 239–281.

Chiswick, Barry R., "The Effect of Americanization on the Earnings of Foreign-born Men," *Journal of Political Economy*, 1978, *86* (5), 897–921.

Clemens, Michael and Mariapia Mendola, "Emigration from Developing Countries: Selection, Income Elasticity and Simpson's Paradox," *Working paper*, 2020.

Cohen, Yinon and Yitchak Haberfeld, "Self-Selection and Earnings Assimilation: Immigrants from the Former Soviet Union in Israel and the United States Author," *Demography*, 2007, *44* (3), 649–668.

Cortes, Kalena E., "Are Refugees Different from Economic Immigrants? Some Empirical Evidence on the Heterogeneity of Immigrant Groups in the United States," *The Review of Economics and Statistics*, 05 2004, *86* (2), 465–480.

Culbertson, Shelly, "A Chance to Fix the Broken Refugee Model," *Foreign Policy*, March 2022.

Dale, Gareth, *Popular Protest in East Germany*, Routledge, 2005.

Denisenko, Mikhail, "Emigration from the CIS Countries: Old Intentions—New Regularities," in Mikhail Denisenko, Salvatore Strozza, and Matthew Light, eds., *Migration from the Newly Independent States*, Societies and Political Orders in Transition, Springer, December 2020, pp. 81–123.

_ , Nikita Mkrtchyan, and Olga Chudinovskikh, "Permanent Migration in the Post-Soviet Countries," in Mikhail Denisenko, Salvatore Strozza, and Matthew Light, eds., *Migration from the Newly Independent States*, Societies and Political Orders in Transition, Springer, December 2020, pp. 23–53.

_ , Salvatore Strozza, and Matthew Light, eds, *Migration from the Newly Independent States* number 978-3-030-36075-7. In 'Societies and Political Orders in Transition.', Springer, January 2020.

Dowty, Alan, *Closed Borders: The Contemporary Assault on Freedom of Movement*, Yale University Press, 1987.

Dustmann, Christian and Anna Okatenko, "Out-migration, wealth constraints, and the quality of local amenities," *Journal of Development Economics*, 2014, *110*, 52–63.

_ **, Francesco Fasani, Tommaso Frattini, Luigi Minale, and Uta Schönberg**, "On the economics and politics of refugee migration," *Economic Policy*, 2017, *32* (91), 497–550.

Eisenhauer, Philipp, James J. Heckman, and Edward Vytlacil, "The Generalized Roy Model and the Cost-Benefit Analysis of Social Programs," *Journal of Political Economy*, 2015, *123* (2), 413–443.

Friedberg, Rachel M, "The Impact of Mass Migration on the Israeli Labor Market," *The Quarterly Journal of Economics*, 2001, *116* (4), 1373–1408.

Gitelman, Zvi, "Exiting from the Soviet Union: Emigrés or Refugees?," *Michigan Journal of International Law*, 1982, *43* (1).

Glitz, Albrecht, "The Labor Market Impact of Immigration: A Quasi-Experiment Exploiting Immigrant Location Rules in Germany," *Journal of Labor Economics*, 2012, *30* (1), 175–213.

Gödri, Irén, Béla Soltész, and Boróka Bodacz-Nagy, "Immigration or emigration country? Migration trends and their socio-economic background in Hungary: A longer-term historical perspective.," 2014, (19).

Gregory, Paul, *Terror by Quota*, Yale University Press, 2009.

Grogger, Jeffrey and Gordon Hanson, "Income maximization and the selection and sorting of international migrants," *Journal of Development Economics*, 2011, *95* (1), 42–57.

Harrison, Mark, "The Soviet Union after 1945: Economic Recovery and Political Repression," *Past & Present*, 2011, *210*, 103–120.

_ , *The Economics Of Coercion And Conflict*, World Scientific, 2014.

Hertle, H.H., M. Nooke, and U. Baron, *The Victims at the Berlin Wall 1961–1989: A Biographical Handbook*, Amber Books Limited, 2011.

INS, "Statistical Yearbook of the Immigration and Naturalization Service," Technical Report, U.S. Department of Justice, 1985–2002.

Ioffe, Grigory, "Migration Between Successor States of the Soviet Union: Long-Term Factors," in Mikhail Denisenko, Salvatore Strozza, and Matthew Light, eds., *Migration from the Newly Independent States*, Societies and Political Orders in Transition, Springer, December 2020, pp. 13–22.

Jarausch, Konrad Hugo, *The rush to German unity*, Oxford University Press, 1994.

Kinzer, Stephen, "Germans Plan to Make It Easier For Some to Obtain Citizenship," *The New York Times*, January 1993.

Kort, Michael, *The Soviet Colossus: History and Aftermath*, Routledge, 1996.

Kravetz, Nathan, "Education of Ethnic and National Minorities in the USSR: a report on current developments," *Comparative education*, 1980, *16* (1), 13–23.

Leshem, Elazar and Moshe Sicron, "The absorption of Soviet immigrants in Israel," *The American Jewish Year Book*, 1999, *99*, 484–522.

Marshall, Barbara, *The new Germany and migration in Europe*, Manchester University Press, 2000.

Mayda, Anna Maria, "Who Is against Immigration? A Cross-Country Investigation of Individual Attitudes toward Immigrants," *The Review of Economics and Statistics*, 2006, *88* (3), 510–530.

McKenzie, David and Hillel Rapoport, "Network effects and the dynamics of migration and inequality: Theory and evidence from Mexico," *Journal of Development Economics*, 2007, *84* (1), 1–24.

Mukhina, I., *The Germans of the Soviet Union* BASEES/Routledge series on Russian and East European Studies, Routledge, 2007.

Munshi, Kaivan, "Networks in the Modern Economy: Mexican Migrants in the U.S. Labor Market," *Quarterly Journal of Economics*, 2003, *118* (2), 549–599.

Orleck, Annelise, *The Soviet Jewish Americans* Brandeis series in American Jewish history, culture, and life, Greenwood Press, 1999.

Pirozhkov, Sergei I., *Trends in Ukrainian Migration and Short-term Work Trips*, RAND Center for Russian and Eurasian Studies, 1996.

Politico, "The most important issues facing the EU—according to voters," 2019.

Prasad, Eswar and Michael Keane, "Consumption and Income Inequality in Poland During the Economic Transition," *IMF Working Papers*, 02 1999, *99.*

Pytliková, Mariola, "Migration Flows from the Perspective of Sending and Receiving Countries." PhD dissertation, Aarhus University, Aarhus School of Business 2006.

Rieber, Alfred J., *Forced Migration in Central and Eastern Europe, 1939–1950* Journal of communist studies and transitional politics, Routledge, 2000.

Rosenberg, Victor, "Refugee Status for Soviet Jewish Immigrants to the United States," *Touro Law Review*, 2015, *19* (2).

Rummel, Rudolph, *Death by Government: Genocide and Mass Murder Since 1900*, Routledge, 1997.

Russian Census, "1989 All-Union Census," State Committee for Statistics, 1989.

Sarvimäki, Matti, Roope Uusitalo, and Markus Jäntti, "Habit Formation and the Misallocation of Labor: Evidence from Forced Migrations," *Journal of the European Economic Association*, 2022, *20* (6), 2497–2539.

Schroeter, Leonard, "Soviet Jews and Israeli citizenship: The nationality amendment law of 1971," *Soviet Jewish Affairs*, 1971, *1* (2), 25–34.

Staikova, Evelina, "Emigration and immigration: Bulgarian dilemmas," *SEER: Journal for Labour and Social Affairs in Eastern Europe*, 2013, *16* (4), 403–415.

Taborsky, Edward, "Czechoslovakia's Abnormal 'Normalization'," *Current History*, 1973, *64* (381), 207–229.

Tolts, Mark, "A Half Century of Jewish Emigration from the Former Soviet Union," in Mikhail Denisenko, Salvatore Strozza, and Matthew Light, eds., *Migration from the Newly Independent States*, Societies and Political Orders in Transition, Springer, December 2020, pp. 23–53.

Tóth, P.P., *Haza csak egy van?: menekülők, bevándorlók, új állampolgárok Magyarországon (Is there only one home country? Refugees, immigrants, new citizens in Hungary)*, Püski, 1997.

UNHCR, "UNHCR Projected Global Resettlement Needs," 2022.

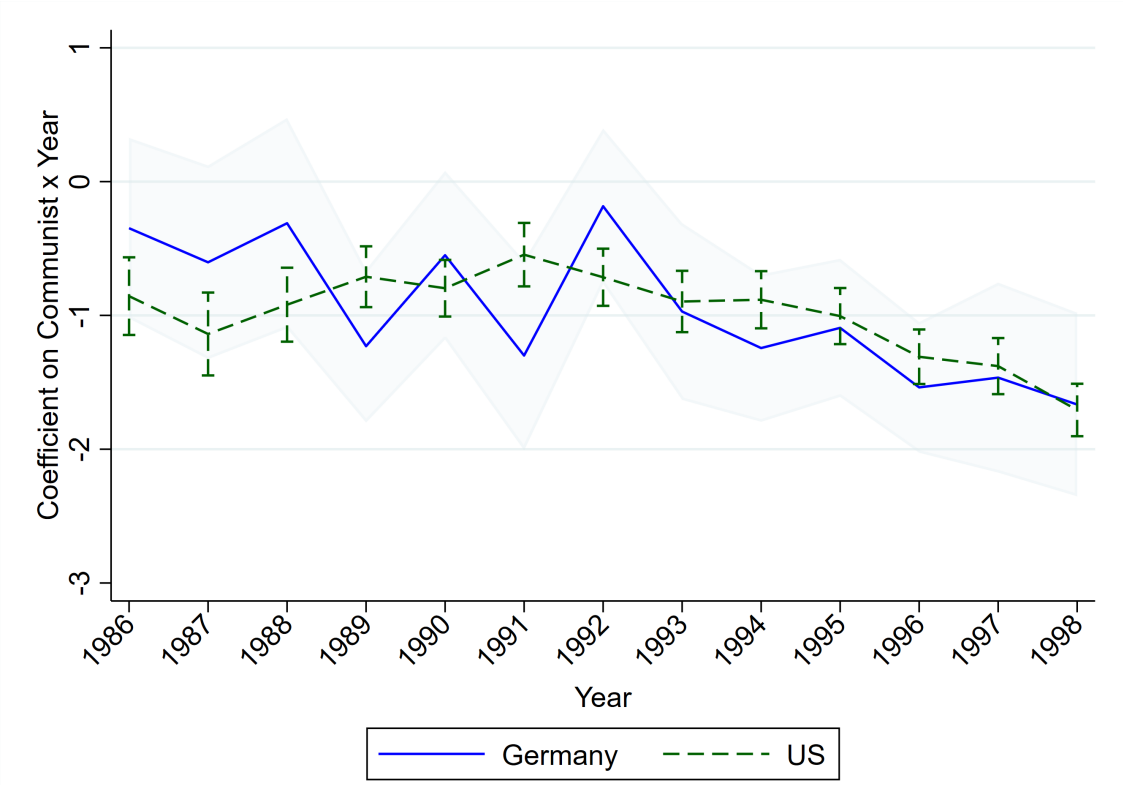
US Congress, "Refugee Act of 1980," 1980.

Zaionchkovskaya, Zhanna A., *Migration Patterns in the Former Soviet Union*, RAND Center for Russian and Eurasian Studies, 1996.

Online Appendix for "Persecution and Migrant Self-Selection: Evidence from the Collapse of the Communist Bloc" by Ran Abramitzky, Travis Baseler, and Isabelle Sin

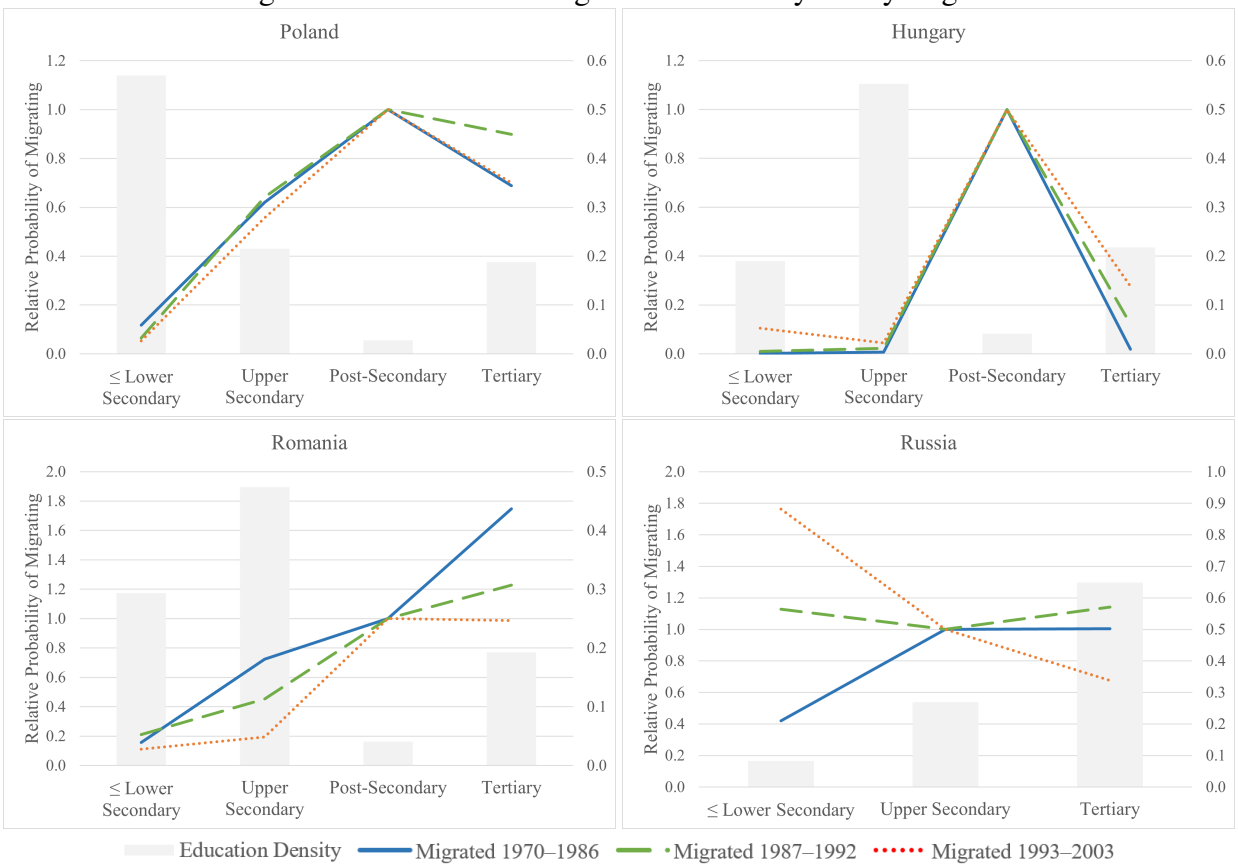
A Additional Tables and Figures

Figure A1: Education Differences for Communist Bloc Immigrants by Year of Arrival, Germany and US



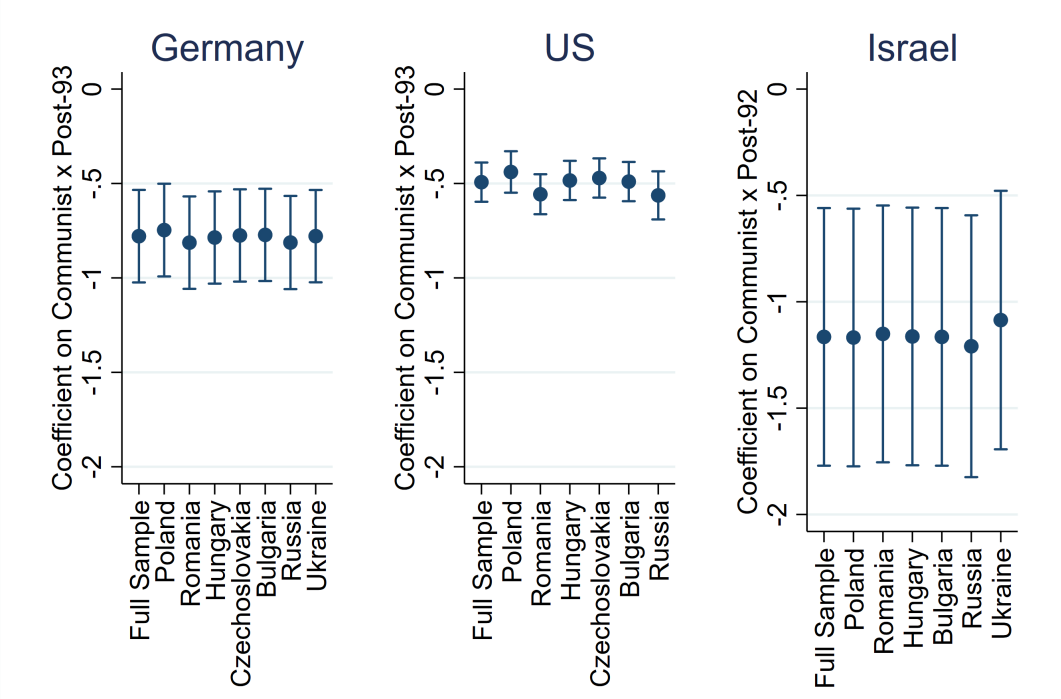
Notes: Data: German Census 2011 and US Census 2000 + 2001–2011 ACS (US 1990 Census and Israeli Censuses do not provide individual arrival year). Arrivals after 1998 are excluded. The omitted category in each regression is arrivals from 1962–1985. 95% confidence interval for US estimates shown with green capped spikes and for German estimates with blue shaded area.

Figure A2: Education-Emigration Profiles by Policy Regime



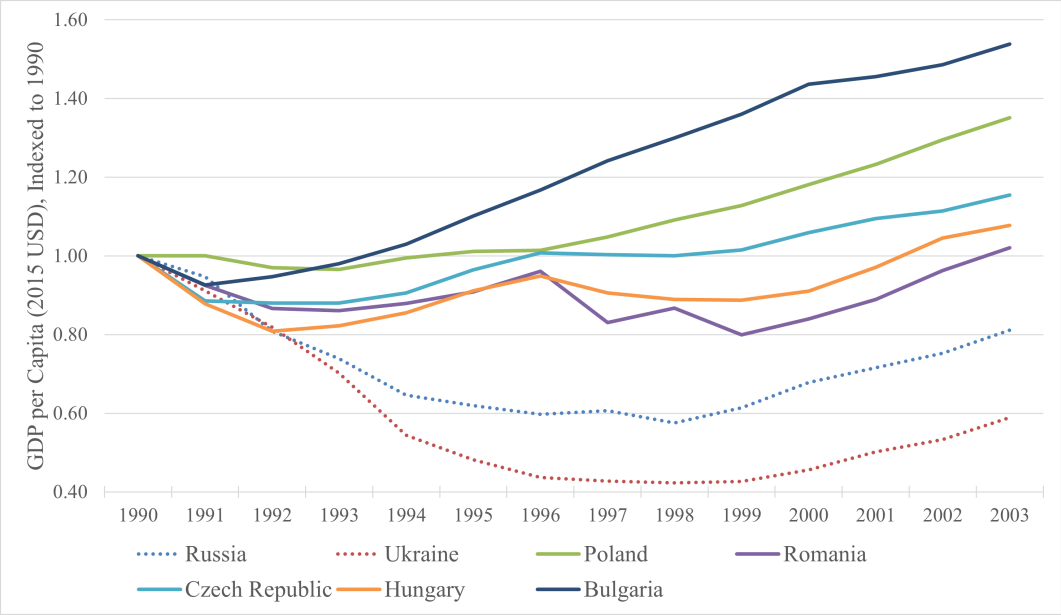
Notes: Each line shows the estimated probability of migrating during a given policy regime for individuals aged 25–45 at the beginning of the time period (for example, Poles aged 25–45 living in Poland in 1970). Migration rates are normalized by the rates for post-secondary education (or upper secondary in Russia). ISCED level 4 (post-secondary) is not separately identifiable in the Russian census. Gray bars show the distribution of educational attainment for each origin-country cohort, with percentages shown on the secondary vertical axis.

Figure A3: Sensitivity of Education Differences to Dropping One Origin Country at a Time



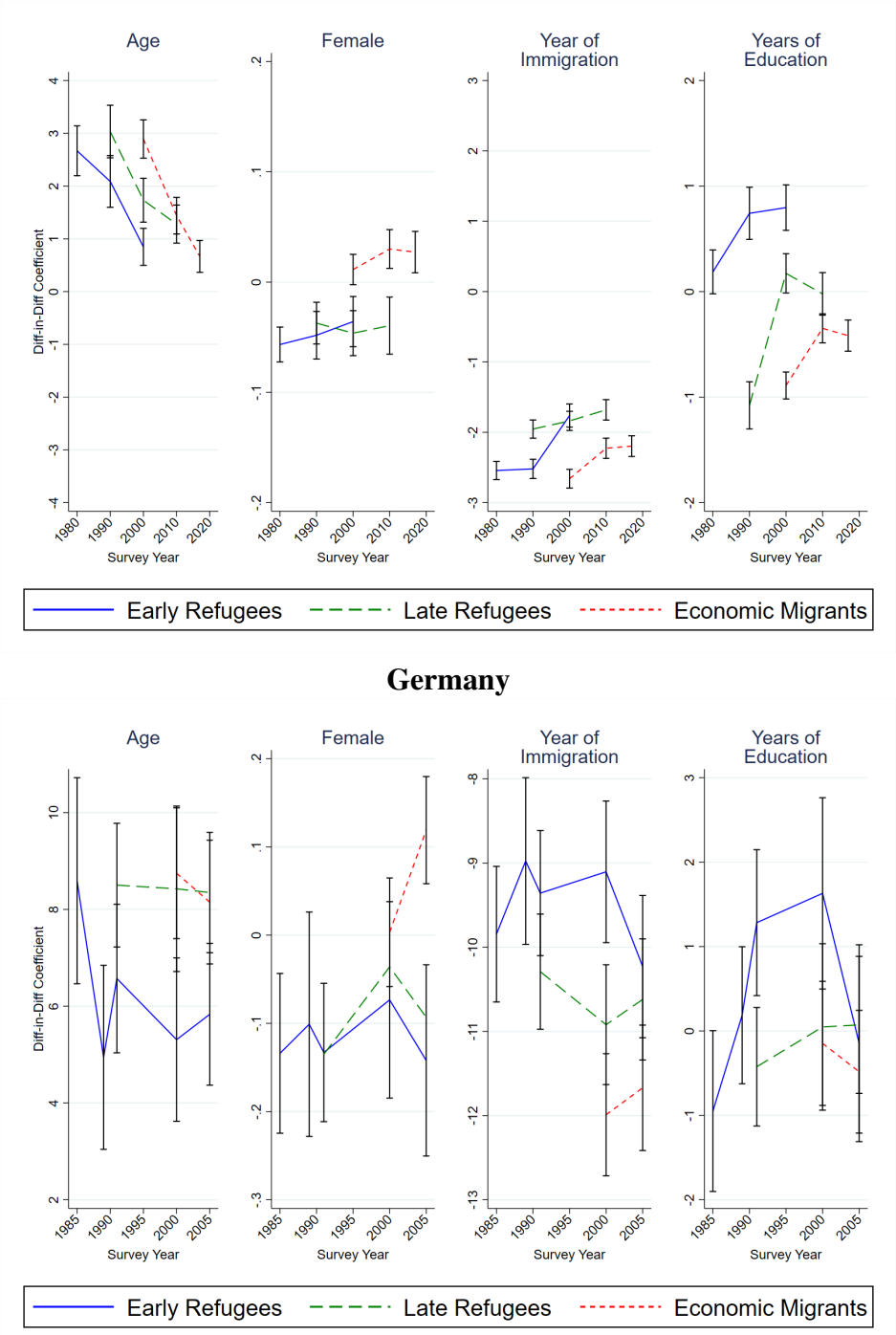
Notes: Each chart shows the point estimate on $Post93_i$ from Equation 3, with years of education as the outcome. US censuses do not separately identify Ukrainian immigrants. Israeli censuses code immigrants from Hungary and Czechoslovakia together.

Figure A4: Timeline of Post-Collapse Recessions in the Communist Bloc



Notes: Data from World Development Indicators (World Bank).

Figure A5: Selective Attrition Appears Modest and Common Across Cohorts



Notes: Each plot shows average characteristics of Communist Bloc immigrants relative to Western European immigrants. All regressions control for county-of-birth fixed effects. Early refugee cohort includes arrival years 1975–1980. Late refugee cohort includes arrival years 1987–1990. Economic migrant cohort includes arrivals years 1995–2000. 95% confidence intervals shown in black.

Table A1: Summary Statistics

	(1) Native-Born	(2) W. European Immigrant	(3) Satellite Immigrant	(4) Soviet Immigrant
Immigrants in Germany				
Age at Immigration	-	31.7	32.0	36.1
Female = 1	0.50	0.45	0.55	0.54
Married = 1	0.58	0.72	0.78	0.82
Years of Education	13.5	12.5	13.6	12.9
Tertiary Degree = 1	0.18	0.29	0.17	0.20
Employed = 1	0.80	0.72	0.73	0.74
Works in High-Skill Job = 1	0.37	0.32	0.22	0.14
Subpopulation Observations	323,000	17,700	54,860	134,180
Subpopulation Size	37,083,750	193,173	511,353	914,191
Immigrants in US				
Age at Immigration	-	33.0	34.5	36.9
Female = 1	0.51	0.47	0.51	0.55
Married = 1	0.67	0.80	0.79	0.82
Years of Education	13.2	12.9	13.7	14.8
Tertiary Degree = 1	0.26	0.36	0.35	0.55
Employed = 1	0.73	0.71	0.74	0.67
Works in High-Skill Job = 1	0.28	0.34	0.26	0.33
Speaks English Well = 1	1.00	0.86	0.74	0.69
Subpopulation Observations	2,891,611	118,959	47,064	50,645
Subpopulation Size	121,893,259	507,391	228,491	254,942
Immigrants in Israel				
Age at Immigration	-	33.4	39.2	38.6
Female = 1	0.50	0.56	0.54	0.55
Married = 1	0.77	0.82	0.83	0.77
Years of Education	11.1	12.7	11.6	13.4
Tertiary Degree = 1	0.23	0.38	0.25	0.43
Employed = 1	0.69	0.64	0.66	0.73
Works in High-Skill Job = 1	0.27	0.30	0.21	0.18
Subpopulation Observations	377,150	4,549	10,296	59,651
Subpopulation Size	1,270,494	13,968	23,504	213,693

Notes: Sample includes immigrants arriving between 1962 and 2003. Tertiary degree refers to ISCED level 5A. High-skill job refers to ISCO-09 groups 1–3.

Table A2: Demographic and Educational Trends in Western and Eastern Europe, 1970–2000.

	Western Europe			Eastern Europe		
	1970s	1990s	Change	1970s	1990s	Change
Demographics						
Population (millions)	283	304	0.07	424	469	0.11
Rural Population (%)	29	26	-2.9	39	34	-4.8
Population Ages 15–64 (%)	63	67	3.4	65	66	1.3
Fertility Rate (births per woman)	2.1	1.5	-0.6	2.3	1.6	-0.7
Life Expectancy at Birth (years)	73	78	4.6	69	69	0.6
Educational Attainment						
Lower Secondary or Better	8.9	11.3	2.4	8.1	13.9	5.7
Upper Secondary or Better	3.7	6.0	2.3	0.8	6.7	6.0
Post-Secondary or Better	1.3	1.3	0.0	0.3	3.3	2.9

Notes: Data taken from World Development Indicators. Each column shows the population-weighted average by decade, and the change from the 1970s average to the 1990s average. Population change expressed as a percent change from 1970s. Educational attainment statistics refer to population ages 25+. Western Europe includes UK and excludes Germany.

Table A3: Returns to Education, by Country and Minority Status

	(1) Employed	(2) High-Skill Job	(3) High or Medium Skill Job	(4) Log Income
Destination Countries				
Germany	0.010	0.022	0.014	0.027
	(0.001)	(0.001)	(0.001)	(0.001)
United States	0.014	0.049	0.016	0.081
	(0.001)	(0.001)	(0.001)	(0.001)
Israel	0.006	0.024	0.006	0.043
	(0.001)	(0.000)	(0.001)	(0.001)
Communist Bloc				
Hungary (Refugee Periods)	0.003	0.068	0.031	
	(0.000)	(0.000)	(0.000)	
Romania (Refugee Periods)	-0.010	0.038	-0.005	
	(0.000)	(0.000)	(0.000)	
Poland (Refugee Periods)	0.013	0.064	0.037	
	(0.000)	(0.000)	(0.000)	
Hungary (Economic Migrant Period)	0.028	0.075	0.052	
	(0.000)	(0.000)	(0.000)	
Romania (Economic Migrant Period)	0.012	0.056	0.024	
	(0.000)	(0.000)	(0.000)	
Poland (Economic Migrant Period)	0.023	0.054	0.028	
	(0.000)	(0.000)	(0.000)	
Russia (Economic Migrant Period)	0.027			
	(0.000)			
Communist Bloc: Minorities				
Hungary (Refugee Periods)	0.004	0.038	0.043	
	(0.001)	(0.001)	(0.001)	
Romania (Refugee Periods)	-0.000	0.028	0.006	
	(0.000)	(0.000)	(0.000)	
Romania (Economic Migrant Period)	0.024	0.040	0.036	
	(0.000)	(0.000)	(0.000)	
Poland (Economic Migrant Period)	0.026	0.024	0.026	
	(0.000)	(0.000)	(0.000)	
Russia (Economic Migrant Period)	0.045			
	(0.000)			

Notes: Sample includes individuals aged 25–65 at time of survey. Samples for Germany, US, and Israel include Communist Bloc immigrants; samples for Communist Bloc include natives. Minorities are those with a non-majority ethnicity, religion, or mother tongue (this is not identifiable in every census). High and medium skill jobs correspond to ISCO-08 groups 1-3 and 4-8 respectively. Each cell shows the coefficient on years of education recovered from a regression of a labor market outcome on years of education and a survey-year fixed effect. Controls include experience (age – years of education – 6), experience squared, and gender. Robust standard errors in parentheses.

Table A4: Economic Migrants Were Less Educated Than Late Refugees Across the Entire Education Distribution, With the Percentage Drop Being Most Pronounced for Tertiary Degrees

	(1) ISCED-3B or Better	(1) ISCED-3A or Better	(2) ISCED-4 or Better	(3) ISCED-5B or Better	(4) ISCED-5A or Better
Immigrants in Germany					
Communist x Post-93	-0.071***	-0.049***	-0.044***	-0.042***	-0.028**
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Communist x Post-87	-0.016	-0.096***	-0.102***	-0.114***	-0.092***
	(0.015)	(0.017)	(0.017)	(0.016)	(0.015)
Observations	529,736	529,736	529,736	529,736	529,736
Dep. Var. Mean 1987–1992	0.75	0.29	0.27	0.22	0.12
%Δ in Comm.	-0.09	-0.17	-0.16	-0.19	-0.23
Immigrants in US					
Communist x Post-93		-0.007*	-0.072***	-0.089***	-0.102***
		(0.004)	(0.007)	(0.007)	(0.007)
Communist x Post-87		-0.026***	-0.066***	-0.052***	-0.056***
		(0.004)	(0.007)	(0.007)	(0.007)
Observations		3,108,279	3,108,279	3,108,279	3,108,279
Dep. Var. Mean 1987–1992		0.40	0.37	0.32	0.19
%Δ in Comm.		-0.02	-0.19	-0.28	-0.54
Immigrants in Israel					
Communist x Post-92		-0.024	-0.126***		-0.197***
		(0.025)	(0.038)		(0.036)
Communist x Post-90		0.139***	0.206***		0.207***
		(0.024)	(0.037)		(0.035)
Observations		451,646	451,646		451,646
Dep. Var. Mean 1990–1991		0.93	0.76		0.53
%Δ in Comm.		-0.03	-0.17		-0.37

Notes: Each column shows a regression of a dummy variable = 1 if the person attained that ISCED level of education or better. See Table 2 column 6 for the baseline specification. Dependent variable means shown for Communist Bloc immigrants arriving in the late refugee period. %Δ in Comm. shows the % change in the dependent variable from the late refugee to economic migrant period. *** p<0.01, ** p<0.05, * p<0.1

Table A5: Robustness of Results to Subgroup Choices and Policy Definitions

Outcome: Years of Education	1980–1999 Arrivals Only	Exclude Under-30 Arrivals	Exclude Under-35 Arrivals	Exclude Jewish Arrivals	Exclude New EU Members	Dropping 25–65 Age Restriction	Late Ref. Period = 1989–1992	Excluding Natives
Immigrants in Germany								
Communist x Post-93	-0.567***	-0.882***	-1.120***	-0.782***	-0.662***	-0.632***	-0.796***	-0.424***
	(0.135)	(0.169)	(0.228)	(0.125)	(0.148)	(0.048)	(0.137)	(0.099)
Communist x Post-87	-0.441**	-0.352	-0.752	-0.590***	-0.638***	-0.533***	-0.372**	-0.496***
	(0.185)	(0.259)	(0.474)	(0.150)	(0.174)	(0.043)	(0.150)	(0.108)
Observations	480,200	473,174	423,171	528,091	523,456	1,186,150	529,736	206,740
Dep. Var. Mean	13.14	13.02	12.92	13.12	13.14	12.48	13.14	13.14
Immigrants in US								
Communist x Post-93	-0.380***	-0.497***	-0.463***	-0.518***	-0.408***	-0.357***	-0.720***	-0.415***
	(0.055)	(0.065)	(0.084)	(0.053)	(0.053)	(0.033)	(0.061)	(0.053)
Communist x Post-87	-0.344***	-0.776***	-0.596***	-0.756***	-0.520***	-0.343***	-0.472***	-0.584***
	(0.062)	(0.067)	(0.089)	(0.054)	(0.056)	(0.032)	(0.063)	(0.053)
Observations	3,024,517	3,032,842	2,979,364	3,104,552	3,050,419	6,288,000	2,491,704	216,668
Dep. Var. Mean	14.0	14.0	14.0	14.0	14.0	12.8	14.0	14.3
Immigrants in Israel								
Communist x Post-92		-0.933**	-0.992**	-0.894**		-0.148		-1.281***
		(0.382)	(0.502)	(0.442)		(0.161)		(0.308)
Communist x Post-90		2.128***	2.196***	-0.931*		1.736***		1.902***
		(0.377)	(0.487)	(0.557)		(0.156)		(0.296)
Observations		437,029	423,892	103,185		1,716,125		74,496
Dep. Var. Mean		13.2	13.1	13.7		11.3		13.2

Notes: See Table 2 column 6 for the baseline specification. All regressions control for country-of-birth and survey-year fixed effects, and 5-year age-bin fixed effects interacted with a gender dummy. When defining the late refugee period as 1989–1992, we drop the 1990 US census because it aggregates arrival years 1987–1990 into a single code. Dependent variable means shown for all Communist Bloc immigrants.

*** p<0.01, ** p<0.05, * p<0.1

Table A6: Differences in Education Explain Some, but Not All, of the Differences in Outcomes Across Immigrant Cohorts

	(1)	(2)	(3)	(4)	(5)
	Employed	High-Skill Job	High or Medium Skill Job	Log Income	Speaks English Well
Immigrants in Germany					
Communist x Post-93	0.007	-0.028**	-0.023*		
	(0.012)	(0.011)	(0.012)		
Communist x Post-87	0.002	-0.015	-0.007		
	(0.016)	(0.014)	(0.017)		
Observations	529,736	529,736	529,736		
Dep. Var. Mean	0.740	0.168	0.570		
Immigrants in US					
Communist x Post-93	0.011*	-0.013**	0.009	-0.131***	-0.100***
	(0.006)	(0.006)	(0.006)	(0.017)	(0.005)
Communist x Post-87	-0.002	-0.020***	-0.004	-0.098***	-0.106***
	(0.006)	(0.006)	(0.006)	(0.016)	(0.005)
Observations	3,108,279	3,108,279	3,108,279	2,691,691	3,108,279
Dep. Var. Mean	0.70	0.30	0.69	10.00	0.71
Immigrants in Israel					
Communist x Post-92	0.023	0.035	0.010	-0.044	
	(0.033)	(0.032)	(0.034)	(0.090)	
Communist x Post-90	0.041	-0.150***	-0.029	-0.150*	
	(0.032)	(0.031)	(0.033)	(0.082)	
Observations	451,646	451,646	451,646	299,323	
Dep. Var. Mean	0.73	0.19	0.55	9.34	

Notes: All regressions control for a years-of-education fixed effect interacted with gender. See Table 2 coumn 6 for the baseline specification without education controls. Dependent variable means shown for all Communist Bloc immigrants.

*** p<0.01, ** p<0.05, * p<0.1

Table A7: Changes in Education Were Similar for USSR and Satellite Migrants

	Full Sample (1962–2003)		Before USSR Recovery (1962–1999)	
Outcome: Years of Education	Satellite	USSR	Satellite	USSR
Immigrants in Germany				
Communist x Post-93	-0.769***	-0.785***	-0.664***	-0.571***
	(0.133)	(0.126)	(0.149)	(0.136)
Communist x Post-87	-0.584***	-0.545**	-0.619***	-0.617***
	(0.152)	(0.212)	(0.152)	(0.212)
Observations	395,554	474,878	386,131	435,908
Dep. Var. Mean	13.63	12.87	13.60	12.85
Immigrants in US				
Communist x Post-93	-0.547***	-0.507***	-0.493***	-0.357***
	(0.066)	(0.060)	(0.070)	(0.063)
Communist x Post-87	-0.709***	-0.775***	-0.664***	-0.730***
	(0.063)	(0.071)	(0.063)	(0.071)
Observations	12,206,191	12,206,191	12,206,191	12,206,191
Dep. Var. Mean	13.68	14.81	13.61	14.80
Immigrants in Israel				
Communist x Post-92	-1.279***	-0.878***		
	(0.435)	(0.310)		
Communist x Post-90	1.863***	2.314***		
	(0.398)	(0.300)		
Observations	391,995	441,350		
Dep. Var. Mean	11.6	13.4		

Notes: Columns 3 and 4 exclude immigrants arriving after 1999 (the beginning of economic recovery in the USSR). See Figure A4 for recession and recovery timelines by country. Excluding arrivals after 1999 is not possible in Israeli, where the 2008 census groups 1992–2008 arrivals into a single code. Dependent variable means shown for all Communist Bloc immigrants.

*** p<0.01, ** p<0.05, * p<0.1

Table A8: Increases in Wage Inequality Following Post-Communist Economic Restructuring Do Not Appear to Be Driving Results

	Group Experiencing Greater Wage Decompression		
Outcome: Years of Education	Men	Under-35	Soviet Union
Immigrants in Germany			
High Decompression x Communist x Post-93	-0.193	0.230	-0.014
	(0.212)	(0.258)	(0.066)
High Decompression x Communist x Post-87	-0.074	-0.328	0.042
	(0.265)	(0.492)	(0.168)
Communist x Post-93	-0.934***	-1.053***	-0.771***
	(0.154)	(0.222)	(0.133)
Communist x Post-87	-0.632***	-0.455	-0.587***
	(0.191)	(0.468)	(0.152)
Observations	529,736	529,736	529,736
Immigrants in US			
High Decompression x Communist x Post-93	0.049	-0.048	0.077
	(0.085)	(0.104)	(0.068)
High Decompression x Communist x Post-87	-0.203**	-0.120	-0.142*
	(0.082)	(0.105)	(0.078)
Communist x Post-93	-0.456***	-0.475***	-0.539***
	(0.069)	(0.083)	(0.066)
Communist x Post-87	-0.789***	-0.720***	-0.650***
	(0.069)	(0.087)	(0.062)
Observations	3,108,279	3,108,279	3,108,279
Immigrants in Israel			
High Decompression x Communist x Post-92	0.381	-0.579	0.301
	(0.542)	(0.621)	(0.296)
High Decompression x Communist x Post-90	-0.152	-0.216	1.819***
	(0.540)	(0.622)	(0.262)
Communist x Post-92	-0.953**	-0.959**	-1.449***
	(0.410)	(0.488)	(0.424)
Communist x Post-90	2.112***	2.051***	0.518
	(0.400)	(0.490)	(0.388)
Observations	1,636,468	1,636,468	1,636,468

Notes: See Table 3 for notes on sample and variable definitions. Each column interacts arrival-year cohort dummies with an indicator for one of three sub-populations that experienced greater wage decompression following post-Communist economic restructuring: male workers, young (under-35) workers, and workers from the Soviet Union (compared to Satellite countries). All regressions include cohort dummies, which are not shown.

*** p<0.01, ** p<0.05, * p<0.1

Table A9: Family Reunification Profiles for Communist Bloc Immigrants in Germany

	Early Refugees	Late Refugees	Economic Immigrants
Summary Statistics			
Has Family at Origin, 1985–1991	0.15	0.14	-
Has Family at Origin, 2000–2005	0.02	0.03	0.05
Female	0.47	0.51	0.59
Married	0.75	0.81	0.83
Reunification Profiles			
Coefficient (years in Germany)	-0.008	-0.009	-0.008
	(0.001)	(0.002)	(0.002)
Intercept	0.197	0.154	0.091
	(0.030)	(0.002)	(0.016)
Reunification Profiles (with controls)			
Coefficient (years in Germany)	-0.006	-0.008	-0.008
	(0.001)	(0.002)	(0.002)

Notes: Data from pooled German Microcensuses of 1985, 1989, 1991, 2000, and 2005. Family at origin includes spouse or children 18 or younger. Reunification profiles estimated from a regression of whether the immigrant has family at the origin on the number of years since they arrived in Germany, with and without controls for county of origin and 5-year age-bin fixed effects. Robust standard errors in parentheses.

Table A10: Differences in Educational Attainment Around the Berlin Wall and the Collapse of Communism, Estimated on German Micro-Censuses

	(1)	(2)	(3)	(4)
	Outcome: Years of Education			
Communist x After Berlin Wall	1.108**	1.978		
	(0.590)	(1.353)		
After Berlin Wall	0.056	-0.202		
	(0.096)	(0.150)		
Communist x Post-93			-0.522***	-0.556**
			(0.141)	(0.237)
Communist x Post-87			-0.295*	-0.496**
			(0.170)	(0.223)
Observations	3,158,585	2,279,336	1,735,389	1,750,636
Ages in Sample	All	25–65	25–65	25–65

Notes: Data from pooled 1% German microcensus samples from 1985, 1989, 1991, 2000, and 2005. Column 1 estimates equation (4) on natives and immigrants of all ages arriving between 1955 and 1986. Column 2 restricts the sample to ages 25–65 and restricts the immigrant sample to those who immigrated at age 25 or older. Column 3 estimates equation (2) on a sample of German-born and Communist Bloc immigrants arriving between 1962 and 2003, aged 25–65 at the time of survey. Column 4 estimates equation (3), adding Western European immigrants arriving in the same period.

*** p<0.01, ** p<0.05, * p<0.1

Table A11: Gender Differences in Labor Market Outcomes and Language Skills

	(1)	(2)	(3)	(4)	(5)
	Employed	High-Skill Job	High or Medium Skill Job	Log Income	Speaks English Well
Immigrants in Germany					
Male x Communist x Post-93	-0.034	-0.029	0.031		
	(0.022)	(0.024)	(0.024)		
Male x Communist x Post-87	-0.060*	-0.044	-0.028		
	(0.031)	(0.030)	(0.032)		
Communist x Post-93	-0.035***	-0.081***	-0.048***		
	(0.013)	(0.016)	(0.015)		
Communist x Post-87	-0.036*	-0.087***	-0.036		
	(0.021)	(0.022)	(0.022)		
Observations	529,736	529,736	529,736		
Dep. Var. Mean	0.740	0.168	0.570		
Immigrants in US					
Male x Communist x Post-93	0.032***	-0.028**	0.030**	0.104***	-0.016*
	(0.012)	(0.013)	(0.012)	(0.036)	(0.009)
Male x Communist x Post-87	-0.035***	-0.081***	-0.050***	-0.074**	0.021**
	(0.011)	(0.012)	(0.011)	(0.033)	(0.008)
Communist x Post-93	0.013*	-0.070***	0.009	-0.165***	-0.110***
	(0.007)	(0.009)	(0.007)	(0.022)	(0.007)
Communist x Post-87	-0.037***	-0.092***	-0.048***	-0.210***	-0.098***
	(0.007)	(0.009)	(0.007)	(0.021)	(0.007)
Observations	3,108,279	3,108,279	3,108,279	2,691,691	3,108,279
Dep. Var. Mean	0.70	0.30	0.69	10.00	0.71
Immigrants in Israel					
Male x Communist x Post-92	-0.102	-0.078	-0.022	-0.166	
	(0.062)	(0.066)	(0.066)	(0.169)	
Male x Communist x Post-90	0.073	0.110*	0.072	0.547***	
	(0.061)	(0.064)	(0.064)	(0.158)	
Communist x Post-92	-0.065	-0.078	-0.019	-0.258*	
	(0.048)	(0.048)	(0.051)	(0.133)	
Communist x Post-90	0.137***	0.011	0.056	0.256**	
	(0.047)	(0.047)	(0.050)	(0.126)	
Observations	1,636,468	1,636,468	1,636,468	1,390,234	
Dep. Var. Mean	0.73	0.19	0.55	9.34	

Notes: See Table 3 for sample information. Dependent variable means shown for all Communist Bloc immigrants.
*** p<0.01, ** p<0.05, * p<0.1

B Additional History and Policy Details

This appendix expands on the background presented in Section 3.

Migration Restrictions in the Communist Bloc

Emigration was among the foremost concerns of Communist governments. Dowty (1987) writes, "A large-scale exodus would have constituted an unacceptable blow to Soviet self-esteem... That some Soviet citizens might prefer to live elsewhere, especially in the capitalist West, was highly threatening." Restrictions were ostensibly based on national security: "Simply by having lived and worked in the USSR, emigres are, in the Soviet view, bearers of sensitive information to enemy states" (Gitelman, 1982). The Soviet government thus worked to make emigration very difficult: "by 1928, illegal departure had become almost impossible," and "by 1936, there was virtually no legal emigration from the Soviet Union" (Dowty, 1987).[37]

These restrictions were enforced with an extensive system of border controls which formed part of the Iron Curtain separating the Communist Bloc from the West. Those who intended to flee to the West were often charged with "treason against the nation" as outlined in a distinct set of Soviet laws, wherein "penalties for violations are described in unusual detail" (Dowty, 1987). Throughout the existence of the Soviet Union, official emigration channels remained extremely limited. Soviet authorities viewed emigration "not as a right, but as a concession to reprehensible people" (Gitelman, 1982). As such, emigration was extremely difficult and risky: a "massive media campaign aims to convince Soviet citizens that emigration is a tragic mistake, at best, and the act of ingrates or traitors, at worst. For those who persist and go through the emigration process, it is very often humiliating, demeaning, costly, risky, and exhausting" (Gitelman, 1982).

Emigration rules in satellite states varied in their degree of restrictiveness, but the general picture was bleak. Describing the situation in the 1980s, Dowty writes, "Eastern bloc nations do not explicitly forbid emigration. The reality begins to emerge in a look at the actual requirements for leaving. Permission can be denied on a number of grounds, including national security and 'interests of the state.' So, while anyone can apply, the odds against success are extremely high. Sanctions against attempts to leave without permission are severe." (Dowty, 1987).

Czechoslovakia remained "rigidly Stalinist even when the Soviet Union was changing under Khrushchev" (Kort, 1996). Attempted reform in 1968 precipitated a Soviet-led invasion, leading to the so-called Brezhnev Doctrine that viewed reforms in any Communist country as a threat to the

[37]The end of World War II was accompanied by massive forced resettlement, including of ethnic Germans. Many fled to Germany; others were deported eastward. Germany does not generally collect information on immigration details prior to 1945, and in our analysis we restrict our focus to immigrants arriving after the construction of the Berlin Wall in 1961.

entire Communist system. After the Czechoslovak government relented to 25 protesters' demands for the right to emigrate in 1984, emigration applications soared (Dale, 2005). The Romanian Communist Party led by Nicolae Ceaușescu was notoriously repressive, and strictly enforced emigration bans (Kort, 1996). Would-be emigrants faced considerable harassment by the government, which joined Czechoslovakia in imposing an education tax on emigrants in 1981 (Dowty, 1987). In Bulgaria, emigration was banned and, after 1953, punishable by death: as a result, only 20,000 refugees left Bulgaria between 1950 and 1989 (Staikova, 2013). Until 1981, Poland was more liberal in allowing foreign travel, and, although emigration was still heavily restricted, about 20% of Polish tourists abroad did not return (Dowty, 1987). While emigration was restricted for most Polish citizens, the Polish government regularly pressed detainees—especially political activists—to leave the country (Dowty, 1987). The Hungarian state was also relatively liberal, and although migration was not permitted universally it was granted on a case-by-case basis, typically for family reunification purposes (Gödri et al., 2014). Approximately 430,000 Hungarians emigrated between 1945 and 1989 (Tóth, 1997).

Emigration from Communist Bloc countries took two forms: legal emigration under bilateral agreements with Western countries, and illegal escape. After the construction of the Berlin Wall in 1961, most escapees traveled through Yugoslavia, although several thousand successfully found a way through the Berlin Wall each year (Jarausch, 1994). These attempts were extremely risky, and at least 140 people died at the Wall between 1961 and 1989 (Hertle et al., 2011). Prospective escapees could also take advantage of periods of political instability: the USSR's invasion of Hungary in 1956 and of Czechoslovakia in 1968, as well as the declaration of martial law in Poland in 1981, prompted hundreds of thousands of departures.

Persecution in the Communist Bloc

The nature of state persecution in the Communist Bloc varied immensely. The pre-WWII era featured brutal campaigns against pre-revolution elites, wealthy peasants, religious groups, ethnic minorities, and political enemies of the Communist Party through campaigns such as the Red Terror from 1917–1922 and the Great Purge from 1936–1938 (Gregory, 2009, Harrison, 2011, 2014). Toward the end of WWII, the Volga Germans, Chechens, Ingush, Kalmyk, and Karachaev peoples were forcibly relocated to Kazakhstan and the eastern USSR (Rieber, 2000). Hundreds of thousands of German-speaking peoples who had fled west with the retreating German Army were later repatriated for forced labor (Rieber, 2000). During the post-WWII Stalinist era, an explicitly anti-Jewish campaign was launched, which closed all Jewish cultural facilities in 1948, and led to the murder of Jewish cultural figures in 1952. Although these campaigns were curtailed after

Figure B1: Map of Communist Bloc countries

Stalin's death, systematic persecution continued through the 60s, 70s, and 80s. Orleck writes in 1999, "The mid-1980s were as bleak a time for Soviet Jews as any period since the Six-Day War [in 1967]." Jews were barred from activities relating to foreign service, foreign trade, and research related to foreign cultures or defense, and from visible public offices such as in government or journalism. Jews encountered great difficulty entering institutions of higher education, reflected in the sharp drop in Jewish higher education enrollment between 1968 and 1976. Soviet propaganda sought to portray Jewish culture as dangerous to society, and Zionism as a "version of Fascism no better than the Hitlerite one" (Gitelman, 1982). Soviet Jews were sentenced to years of hard labor for advocating for emigration rights as late as 1986 (Orleck, 1999).

State persecution in the Satellites varied by country and time period. Nicolae Ceaușescu, the General Secretary of the Romanian Communist Party from 1965 until his execution in 1989, ran a totalitarian government of mass political and religious repression, state surveillance, and arrests. After the end of WWII, the government of Czechoslovakia revoked citizenship from minority ethnic groups in an attempt to establish the primacy of Czechs and Slovaks. After a brief attempt at liberalization (Alexander Dubček's "socialism with a human face") in 1968 prompted a Soviet invasion, the Czechoslovakian Communist Party returned to orthodox Soviet-style policies during its period of "Normalization" (Taborsky, 1973). After Hungary refused to accept approximately 500,000 ethnic Hungarians from Czechoslovakia, around 50,000 of them were sent to labor camps (Rieber, 2000). Communist Poland, though it never accepted Soviet domination (Kort, 1996), pursued its own campaign of ethnic cleansing from 1945 to 1948 (with an estimated death toll of

at least one million ethnic Germans) and violently suppressed political dissidents throughout its existence—with an estimated death toll of 22,000 between 1948 and 1987 (Rummel, 1997).

The Collapse of Communism

Major reforms began in the Soviet Union under Mikhail Gorbachev, who became General Secretary of the USSR in 1985. Among the most influential policy reforms were *perestroika*, or restructuring, and *glasnost*, or openness. These reforms aimed to move the Soviet Union gradually toward a more market-oriented economic system, decentralize political decision making, and permit a more open expression of ideas. Gorbachev's aim was not to provoke the end of Communism or to dissolve the Soviet Union: as Kort (1996) writes, "Gorbachev came to power determined to reform, and thereby to preserve, the Soviet system." Emigration restrictions were gradually eased: a policy reform in 1987 required exit visa cases to be decided within 1 month with a rationale to be given in the case of a denial. Still, emigration was permitted only if a person had close relatives living abroad, which made emigration much easier for ethnic minority groups (Denisenko, 2020). In 1988, restrictions on Jewish emigration were largely lifted, which led to mass Jewish emigration from Ukraine between 1988 and 1992 (Kort, 1996). By 1994 emigration out of Ukraine was largely economically motivated, and unrestricted emigration was finally legalized in 1992 (though it did not take effect until January of 1993) (Pirozhkov, 1996).

Reform in the satellite countries happened more suddenly. Many satellite governments initially resisted Gorbachev's agenda of reform, but could not stop waves of popular demands for liberalization and the end of one-party rule. The political successes of the Polish underground trade union Solidarity, combined with the apparent willingness of Soviet leaders to accommodate reform, led to a series of revolutions in each satellite state. Power was in most cases peacefully handed to a new government, with the exception of Romania, where Ceaușescu attempted to retain control until his execution. By the end of 1989, the Communist satellite governments had all ceded control, and emigration restrictions were removed entirely.

Table B1 shows estimates from Zaionchkovskaya (1996) and Pytliková (2006) of the total number of emigrants, by origin and destination country, who left the Communist Bloc between 1989 and 2000. During these 12 years, nearly 7 million people emigrated to the West. Germany was by far the top destination, receiving 4.3 million immigrants over this period, or 64% of the total. Israel and the United States each received nearly 1 million immigrants. Together, these three countries represent 88% of total migration flows over this period.

Table B1: Migration Flows From Communist Bloc, 1989–2000 (Thousands)

	Origin Country							
Destination	USSR	Poland	Romania	Czech.	Hungary	Bulgaria	**Total**	**Share**
Germany	1,911	1,323	511	240	219	139	4,344	0.64
Israel	869						869	0.13
US	420	205	67	14	13	24	743	0.11
Italy		44	122				166	0.02
Spain	27		103			26	157	0.02
Canada	1	81	39	9	8	8	145	0.02
Austria		53		38	27	8	125	0.02
Hungary			119	4			123	0.02
Greece	105					19	124	0.02
France		18					18	0.00
Finland	16						16	0.00
Total	3,350	1,725	962	304	267	224	6,831	1.00

Notes: Each cell shows the total migration between an origin-destination pair from 1989–2000, in thousands of migrants. Missing cells indicate no data. Source: Zaionchkovskaya (1996) and Pytliková (2006).

Immigration Policy in the West

Immigration Policy Before 1989

Two significant US immigration reforms of this period affected migrants other than asylum seekers. First, the Immigration Reform and Control Act of 1986 granted legal status to 3 million undocumented immigrants who arrived before 1982, but tightened restrictions on employers who were knowingly hiring undocumented immigrants. Second, the Immigration Act of 1990 created priority categories for employment-based visas, created the H-1B visa for college-educated foreigners, capped the number of unskilled immigrants, and created the diversity lottery.

In 1971, as a response to a group of Soviet Jews who had been denied exit visas, the Israeli Nationality Law was amended to grant citizenship to eligible Jews who had not yet migrated to Israel (Schroeter, 1971).

Immigration Policy After 1989

Changes in Germany. The most significant revision came into effect with the so-called *Asylum Compromise* which was voted into law by the Bundestag on June 23, 1993 after prolonged political debate, and came into force on July 2 of that year. The Compromise modified the German constitution to restrict the right to asylum. Applications from individuals who arrived in Germany via a "safe third country" or who came from a "safe country of origin" were deemed "manifestly unfounded" and could be speedily denied (Marshall, 2000). Every new Eastern European democ-

racy was considered a safe country, effectively shutting down the asylum channel for Communist Bloc migrants. The human rights group The Society for Threatened Peoples, speaking about the Asylum Compromise, said, "What this effectively means is that no refugee can come to Germany by land. Only those who arrive by air can apply for asylum, but they would need visas to get here, and as a rule German embassies do not issue visas to people seeking political asylum. Is the only remaining possibility a flight by private plane and then a parachute jump?"

Jewish immigrants were exempt from these new restrictions, and as a result continued to migrate to Germany predominantly from the former USSR countries throughout the 1990s (Marshall, 2000).

The most significant policy change affected immigrants to Germany other than asylum seekers and ethnic Germans was the January 1, 2000 citizenship law reform, which reduced the residency requirement for obtaining German citizenship from 15 to 8 years. Prior to this reform, naturalization was extremely rare in Germany, as applicants were required to maintain long periods of residency, give up their original citizenship, and pass screening by police investigators who rejected most applications (Kinzer, 1993).

Changes in the US. After 1989, applications for asylum were required to be filed from the home country. In February 1990, the Lautenberg Amendment lowered the burden of proof for Soviet Jews, Evangelical Christians, Ukrainian Catholics, and Ukrainian Autocephalous Orthodox Christians back to their pre-1989 levels. These groups, which the Amendment argued faced a "credible basis for concern" based on "historical circumstances," would not need to provide proof of a well-founded fear of persecution.

Social Assistance Provided to Immigrants

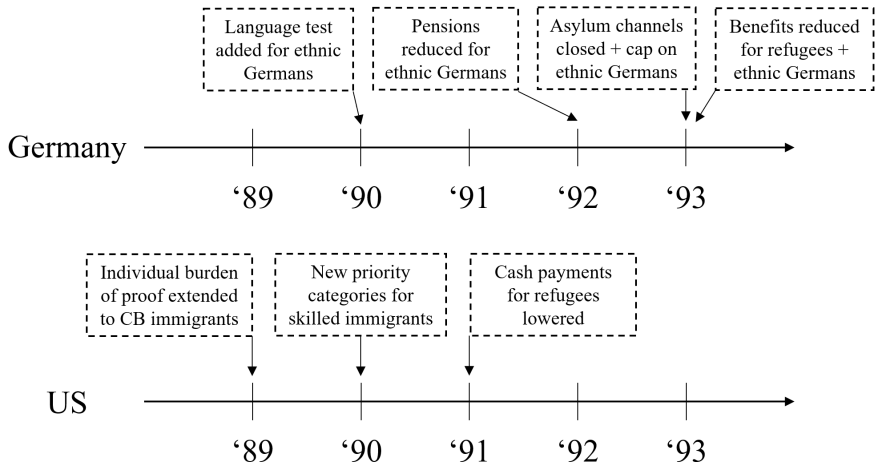
In 1992, pensions paid to ethnic Germans were reduced (Marshall, 2000). In 1993, unemployment benefits paid on arrival to ethnic Germans were suspended and replaced with a transition payment and language course stipend (Marshall, 2000). In 1995, Germany agreed to contribute DM 200 million to the Russian government to resettle ethnic Germans from Asia (especially Kazakhstan) to Russia in an attempt to discourage their migration to Germany (Marshall, 2000).

Refugees granted asylum in Germany receive a residence permit entitling them to work, although they faced sporadic work bans in the 70s, 80s, and 90s. After 5 years of living in Germany on a residence permit, refugees could apply for permanent residency subject to language fluency and self-sufficiency requirements. In November 1993, the Asylum Seeker Benefits Law reduced benefits paid to asylum seekers, for the first time separating entitlements from those offered to Germans and other immigrants.

US policy governing refugee resettlement assistance was set forth in the Immigration and Nationality Act of 1952, amended in 1965 and again in 1980 as The Refugee Act. Programs include cash assistance, medical assistance, basic needs support (such as housing, furnishings, food, and clothing), and language and job skill training (Bruno, 2011). In 1991, the duration of cash and medical assistance payments was lowered from 36 months to 8 months.

Figure B2 summarizes the major immigration policy changes in Germany and the US between 1989 and 1993.

Figure B2: Summary of Major Immigration Policy Changes in Germany and US, 1989–1993



Notes: Immigration policies in Israel were relatively constant over this period.