

# The Effect of Labor Migration on the Diffusion of Democracy: Evidence from a Former Soviet Republic\*

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## Abstract

Migration contributes to the circulation of goods, knowledge, and ideas. Using community and individual-level data from Moldova, we show that the emigration wave that started in the late 1990s strongly affected electoral outcomes and political preferences in Moldova during the following decade, eventually contributing to the fall of the last Communist government in Europe. Our results are suggestive of information transmission and cultural diffusion channels. Identification relies on the quasi-experimental context studied and on the differential effects arising from the fact that emigration was directed both to more democratic Western Europe and to less democratic Russia.

Key words: Emigration, political institutions, elections, social networks, information transmission, cultural diffusion.

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# 1 Introduction

When people cross borders, they bring with them new goods, new knowledge, and new ideas.<sup>1</sup> Prior to World War II, people who migrated had only limited options for interacting with their homelands unless they chose to return (Hirschman, 1970).<sup>2</sup> Recent literature, however, suggests that today knowledge and ideas increasingly circulate in the direction opposite to the direction of migration, that is, from destination to origin. The availability of cheap communication and transport is making migration-driven flows of knowledge and ideas an increasingly important force.

This paper investigates the effect of labor migration on democratization and political outcomes at home, using data from the former Soviet Republic of Moldova. It builds on the idea that migrants absorb new political norms, practices, and information abroad, which they transmit to their home communities through direct and indirect contacts with relatives, friends and other members of their home-based social networks. Ultimately, these immaterial cross-border flows have the potential to change political preferences and strengthen the constituency for political change at home, especially in regions where information acquisition is difficult or costly.

Our objective is to empirically identify the political spillover effects of labor migration on those who stay behind. In particular, we test whether Moldovan municipalities with migrants in democratic countries experience an increase in political support for more democratic and liberal parties in elections. As other former Eastern Bloc countries, Moldova became independent in 1991 and experienced a volatile democratic transition, especially when the Communist Party returned to power in 2001. A few years before, the Russian financial crisis of 1998 strongly affected Moldova's economy and sparked a large emigration wave, with Moldovans emigrating first modestly and then massively to both Western Europe and Russia. After one decade of mass emigration, a coalition of pro-democracy and pro-European parties took over in 2009. The "Alliance for European Integration" changed the political path of Moldova, making the country a poster child in terms of

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<sup>1</sup> For example, Nunn and Qian (2011) analyze the effects of the introduction of potatoes from the Americas on population and urbanization in Europe. Acemoglu et al. (2001) emphasize the role of colonial settlers and institutions to explain comparative development, while Acemoglu et al. (2011) study the institutional spillovers of the French occupation of parts of Western Europe after 1789. Hornung (2014) studies the human capital externalities from Huguenot immigration to Prussia, while Moser et al. (2014) study the emigration of Jewish scientists from Nazi Germany to the US.

<sup>2</sup> In Hirschman's (1970) view, exit and voice were substitute ways for expressing political discontent, with more exit implying less voice. Hirschman illustrated his theory using the example of East Germany. His conclusion was that the emigration waves of the 1950s and 1960s had weakened the reformist voices, eventually strengthening the repressive communist regime (see also Hirschman, 1993). Similar analyses have been proposed with regard to autocratic regimes such as Cuba, or for countries such as Mexico, where emigration served as safety valve, relaxing domestic pressure to reform and, thus, delaying social and political change. See Hansen (1988) on Mexico and Colomer (2000) on Cuba.

economic and political reforms in the region (and eventually leading to rapid improvements in civil liberties and press freedom). This political development culminated in the ratification of the EU-Moldovan association agreement of 2014.<sup>3</sup> This paper posits that exposure to Western political values and practices through emigration to Western European countries played an instrumental role in bringing about political and democratic change in Moldova.

Moldova shares many traits with other transition and developing countries, but provides a unique laboratory to identify the political spillover effects of labor migration. First and foremost – and unlike most migrant-sending countries – Moldova has two main migration corridors to destinations with very different democratic traditions and political ideologies. About 40% of emigrants have left for democratic countries in Western Europe, while 60% went to work in less democratic countries in the East, in particular Russia. This divergence allows us to identify destination-specific political spillovers, as migrants to Western Europe arguably transmit different information and norms than migrants to Russia. The scope of political spillovers of emigration may be as important in other settings with just one main migration corridor (e.g., emigration from Mexico to the US). The bipolar pattern of emigration from Moldova, however, allows us to isolate political spillovers from other migration-related effects such as income effects of monetary remittances. We exploit the large variation in political regimes across destination countries to test for destination-specific effects of emigration on electoral outcomes.

Our identification strategy relies on the quasi-experimental setting under which the episode of emigration we analyze took place. There was hardly any emigration out of Moldova before the Russian financial crisis of 1998. Within just a few years after the crisis, more than 300,000 Moldovans left the country. We can hence condition on pre-migration voting behavior to difference out time-constant electoral preferences. We also document that Moldova is a relatively homogenous country and that the direction of migration flows (West versus East) varies greatly across observationally similar communities. No systematic spatial pattern exists once we control for observable community characteristics, in particular for factors driving the destination choice of the first migrants who departed at the end of the 1990s. It thus seems that small differences in pre-migration community characteristics can bring about large differences in migration patterns. Networks formed by early migrants were influential for the destination choice of subsequent migrants, which explains clustering

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<sup>3</sup> During a speech in the German Bundestag in November 2013, German Chancellor Angela Merkel said: “In spite of some domestic turmoil, the Republic of Moldova has perhaps demonstrated the greatest political will of all Eastern partners to adopt and implement reforms.”

of migrants from the same community in certain destinations. This observation is consistent with the idea that, conditional on pre-migration conditions, networks introduce a considerable quasi-random component in the direction of migration flows that is unrelated to levels or trends in electoral preferences.

Our main challenge is that migrants' destination choices could have been driven by political preferences, or by a confounder that drives both migration and voting patterns. Political self-selection at the individual level (Hirschman's "exit effect") is unlikely to explain a negative relationship between westward migration and the share of votes for the Communist Party (our main dependent variable). If anything, the departure of liberal-minded voters to the West should increase, not decrease, the share of votes for the Communist Party in a given community. Political self-selection at the community level (i.e., communities that have characteristics that make them both more likely to send migrants to Western Europe and to vote against the Communist Party) is more serious an issue. To address this problem, we control for electoral preferences before migration started and effectively analyze the change in Communist votes between 1998 and 2009. We can therefore rule out any time-constant confounder including time-constant electoral preferences. In this sense, our strategy is akin to a differences-in-differences approach, as we explain changes in Communist votes by changes in the prevalence of migration to the West and East. We also show that, conditional on community characteristics, pre-migration electoral preferences cannot explain the direction of migration flows to the West or East.

To deal with time-varying confounders, we adopt a stepwise identification strategy. First, we control for a wide range of pre-migration community characteristics. Most importantly, we control for the drivers of early emigration to the East and West, since the first migrants played a crucial role for the destination choice of subsequent migrants from the same communities.<sup>4</sup> We also control for community-specific economic shocks as measured by satellite data on night-time light intensity. Second, to address spatially concentrated confounders, we only evaluate the relationship between migration and voting patterns within districts and show that our point estimates are fully robust to including fixed effects for increasingly smaller geographical areas. Third, we show that communities with westward and eastward migration followed the same trends in electoral preferences around the time and a few years after migration had started. This late divergence is consistent with the time

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<sup>4</sup> The two main drivers were access to ethnic networks and proximity to the border with Romania. The presence of a Russian minority in a community facilitated early emigration to Russia while being closer to a Romanian border-crossing facilitated emigration to the West.

pattern of international communications and, therefore, with an interpretation of the results in terms of information transmission (as we discuss in Section 6).

We find a strong and robust effect of migration patterns on electoral preferences and outcomes. The magnitude of the effect is large. A one percentage point increase in the community prevalence of westward migration reduces the Communist vote share by about 0.6 percentage points. This result is remarkable as it suggests that the “exit effect” (the departure of liberal-minded voters) is more than offset by political spillovers from abroad. To the extent that political self-selection is a reality, it also follows from the above that our point estimate is a lower bound of the effect of emigration on the voting patterns of those left behind. Our counterfactual simulations suggest that westward migration significantly contributed to put an end to the Communists’ rule in the elections of 2009.

We also provide suggestive evidence that the effect of emigration works through information transmission and cultural diffusion channels. The effect of westward migration is stronger in communities in which a larger share of the population grew up during the Soviet era or has relatively low levels of education, that is, where information and norms from the West have a larger informational value. We also document heterogeneous effects across Western destinations, with the effect of westward migration being driven by emigration to the sub-set of European countries with the highest democratic standards.

Finally, we complement our community-level analysis with an individual-level analysis using data from two sources: the Moldova Political Barometer, a political opinion survey with direct information on individual preferences on socio-political issues, and an exit poll survey conducted during the elections of 2010, which included a migration module that we commissioned for this study. The results show that the observed change in electoral outcomes is accompanied by a change in political preferences and support our interpretation in terms of information transmission and cultural diffusion channels.

As regards the external validity of our finding, Moldova may not be representative of all developing countries witnessing emigration. But it is a typical example of a newly founded state that is torn between two opposing political and economic systems, Russia and the European Union, a choice also faced by other former Eastern Bloc countries such as Belarus, Georgia, Serbia or Ukraine after the collapse of the Soviet Union. History has seen many similar critical junctures that changed the path of institutional development (e.g., Acemoglu and Robinson, 2012; Aidt and Franck, forthcoming). Our results suggest that in a globalized world migration may have become an

increasingly important factor affecting the economic and political trajectory of nations. In this sense, exit and voice could be complementary in bringing political change and jointly contribute to the global diffusion of democracy.

***Related literature:*** The paper builds on three strands of literature. First, there is growing evidence that diaspora networks promote bilateral exchanges of goods, capital, and ideas. For example, Rauch and Trindade (2002) finds that ethnic Chinese networks reduce information asymmetries and promote bilateral trade. In a similar vein, Kerr (2008) illustrates how migration networks facilitate the diffusion of innovation.<sup>5</sup> With respect to political institutions, Spilimbergo (2009) uses cross-country comparisons to show that foreign-trained individuals promote democracy in their home countries, but only if foreign education was acquired in a democratic country. Docquier et al. (2014) extend the analysis to migration in general and find that openness to migration (as measured by the total emigration rate to OECD destinations) improves institutional quality at home. At the micro level, Batista and Vicente (2011) document that households in Cape Verde with a current or return migrant, particularly those with a migrant to the US, have a higher demand for political accountability. Pérez-Armendáriz and Crow (2010) find that individuals in Mexico in households with a migrant in the US or Canada are more likely to vote. Chauvet and Mercier (2014) also focus on political participation and report a similar result for Mali. Pfütze (2012) studies Mexico's local elections and shows that municipalities with many migrants in the US are more likely to vote for opposition parties. In general, these studies suffer from the fact that they cannot control for pre-migration political preferences and outcomes and/or from the fact that they cannot rely on heterogeneous destinations in terms of political institutions.

Second, recent work from sociologists, anthropologists, and economists shows that crossing borders and being exposed to new socio-political environments can significantly alter an individual's attitudes, beliefs, and values including political preferences (Cain et al., 1991; Berry, 1997; Careja and Emmenegger, 2012; Cameron et al., 2015). Clingingsmith et al. (2009) analyze the social consequences of the Muslim pilgrimage to Mecca. They find that this relatively short experience leads to a persistent change towards more religious tolerance in Pakistani pilgrims' attitudes, beliefs, and practices at home. In short, emigration is a transformative experience for the migrant with potential spillovers for the home community (Levitt, 1998). Relatedly, institutions can have profound

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<sup>5</sup> Docquier and Rapoport (2012) review this literature with a focus on high-skilled migration. Migration has also been shown to contribute to the transmission of fertility norms (Fargues, 2007; Beine et al., 2013; Bertoli and Marchetta, 2015).

effects on people's political preferences. Alesina and Fuchs-Schündeln (2007) show that 40 years of Communist rule made East Germans significantly more favorable to government intervention than their West German compatriots. In the same vein, Aghion et al. (2010) show that corrupt governments in former socialist countries reduce levels of social trust and social capital, which can drive people to demand more regulation and redistribution. Most recently, Fuchs-Schündeln and Schündeln (2015) find that an individual's support for democracy increases with the length of time spent under democracy. We extend this literature by showing that even indirect exposure (through contacts with migrants) to new social norms and information can trigger significant changes in political attitudes.

Third, recent research has documented the importance of media access for electoral outcomes. DellaVigna and Gentzkow (2010) conclude that access to a diverse set of news media can have a substantial effect on election results. Enikolopov et al. (2011) find that access to an independent TV channel in Russia reduced the vote share of Vladimir Putin's ruling party by eight percentage points. In the context of Moldova, we find that information transmitted through migrants can also have large effects on electoral preferences and be an additional vector of democratization.

## **2 Moldova as an ideal case study**

### **2.1 Political background**

Moldova is a formal parliamentary democracy. The country gained independence from the Soviet Union in 1991 and has been politically stable besides a four-month war on the breakaway region of Transnistria in 1992.<sup>6</sup> Between independence and 2013, the country saw seven parliamentary elections: 1994, 1998, 2001, 2005, 2009 (April and July), and 2010.

Shortly after independence, the Communist Party was banned. Nevertheless, state-oriented parties, in particular the Socialist Party and the Agrarian Party, firmly dominated politics in the mid-1990s. The Communist Party was re-allowed to enter the political stage at the end of the 1990s. After the economic hardship that followed the Russian financial crisis of 1998, the Communists won a landslide victory in the snap elections of 2001 by promising a strong hand and Soviet-era living standards. In the years that followed, Moldova's Freedom House scores worsened, the judiciary lost parts of its independence, and the freedom of the press gradually eroded (Quinlan, 2004).<sup>7</sup> Despite

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<sup>6</sup> Transnistria is a small strip of land to the East of the Dniester river, which is now effectively a Russian protectorate. It is excluded from our empirical analysis.

<sup>7</sup> Remarkably, parliamentary elections in this period continued without manipulations (OSCE, 1998, 2001, 2005, 2009).

some reforms and the adoption of a new, more EU-friendly foreign policy agenda in the mid-2000s, the Communist Party remained a largely nationalist and state-centered formation, nostalgic of Soviet times. The elections of 2009 and 2010 marked a watershed in Moldova's political history. In April 2009, the Communist Party failed to win the three-fifths parliamentary majority necessary to elect the country's president. Following allegations of vote fraud, anti-government protestors took to the streets, looted the parliament and raised flags of the European Union on several government buildings. Without a presidential majority in parliament, new elections were held in July 2009 that saw the victory of the "Alliance for European Integration", a liberal four-party coalition. Because the Alliance also lacked a presidential majority, another election was held in November 2010, resulting in further losses for the Communist Party.

Since then, the Alliance has consolidated its power, elected a president, and started to implement economic and political reforms. A recent progress report by the European Commission (2012) highlights that Moldova has improved in many areas, including institutional quality, freedom of the press, and investment climate.<sup>8</sup> The country also topped the list of reformers in the World Bank's 'Doing Business' Report 2012 and most recently, in June 2014, signed a far-reaching association agreement with the European Union. In line with political scientists (Mungiu-Pippidi and Munteanu 2009; Marandici, 2010, Crowther, 2011), we therefore interpret voting against the Communist Party (i.e., for a liberal opposition party) as voting for political and democratic change. That said, it should be noted that by no means all members of the "Alliance for European Integration" are dedicated reformers and genuinely embrace democratic values. Despite the recent improvements in institutional quality, corruption remains widespread and Moldova still has a long way to go to become a full democracy.

As we detail below, two factors make Moldova a particularly well-suited case study. First, unlike most migrant-sending countries, Moldova has two main migration corridors to destinations of very different democratic traditions and political ideologies. Migrants leave both for the West and East and large-scale migration started only after 1998. We take advantage of this pattern to identify destination-specific effects of emigration. Second, Moldovans had very limited access to information from the West before emigration took place, and continued to have restricted access to Western

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<sup>8</sup> A 2011 Freedom House report stated that "Moldova's civil liberties rating improved from 4 to 3 due to a more balanced and diverse media environment, a reduction in government hostility toward civil society groups, and a lack of interference with political gatherings." (<http://www.freedomhouse.org/report/freedom-world/2011/moldova>). Moldova's press freedom score as reported by Reporters Without Borders also increased – from 22 in 2008, ranked 98 worldwide, to 16 in 2011, ranked 53 worldwide. This gives Moldova the best position among all post-Soviet states outside the European Union ([http://en.rsf.org/spip.php?page=classement&id\\_rubrique=1043](http://en.rsf.org/spip.php?page=classement&id_rubrique=1043)).

media until the late 2000s. This setting makes informational spillovers from abroad an important potential channel for the observed changes in the preferences of the Moldovan electorate.

## 2.2 A quasi-experimental setting

Moldova's emigration took off only after 1998, when the country was severely and unexpectedly hit by the Russian financial crisis.<sup>9</sup> As a result of the crisis, Moldova's currency depreciated sharply, agricultural exports froze, and output fell by 32.5% year-on-year (Radziwill et al., 1999). All parts of the population were adversely affected and Moldovans started to emigrate in large numbers. The Russian financial crisis hit Moldova more severely than Russia. Russia, which started with a much higher GDP per-capita, recovered quickly and saw strong economic growth in 1999 and the years thereafter. Moldova's economy, however, was still shrinking in 1999 and grew only modestly in 2000. As a result, working abroad, including in Russia, became attractive for many Moldovans.

The shift from low (virtually zero) migration prevalence to high migration prevalence is apparent from Figure 1, which is based on data from the Moldovan Labor Force Survey available from 1999 onwards. The same trend is observable using immigration figures of destination countries. The figures confirm that Moldova had very little out-migration throughout the 1990s. As of 1998, for example, only 15 Moldovan immigrants were registered in Italy, but this number increased to 40,000 by 2004. A similar explosive growth in Moldovan immigration occurred in other popular destination countries such as Greece, Portugal and Spain.<sup>10</sup> By 2009, more than 300,000 Moldovans had left the country on a temporary or permanent basis, out of a population of 3.6 million (Luecke et al., 2009).<sup>11</sup>

Whether migrants from a given community leave for the West or the East largely depends on the destination choice made by the first migrants from that community. This is because migrant networks induce a high degree of path dependency in migration flows by providing information on jobs abroad and lower the costs of migration for subsequent migrants. As a result, migrants from a specific origin tend to cluster at specific destinations (Munshi, 2003; McKenzie and Rapoport, 2010).

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<sup>9</sup> It should be noted, however, that large parts of Moldova's Jewish community emigrated to Israel, the United States, and Germany directly after the collapse of the Soviet Union. Jewish migrants left permanently with their families and did not maintain strong ties with Moldova. This small wave of emigration, therefore, differs substantially from the subsequent wave of labor migration that started in the late 1990s (Moşneaga et al., 2006).

<sup>10</sup> As of 1998, the number of Moldovan residents in Portugal, Greece and Spain was virtually zero (given as 0, 944 and 96, respectively), but increased drastically afterwards. Data for Italy is from the Ministero Dell'Interno, for Portugal from the Instituto Nacional de Estatistica, for Greece from the Hellenic Statistical Authority and for Spain from the OECD. For Russia, no statistics on Moldovan immigration is available.

<sup>11</sup> In comparison, internal migration is much less widespread. According to the 2004 population census, only six percent of the population changed their residence within Moldova in the five-year period prior to the census. The vast majority of them moved to Chisinau or Balti, the only two major cities in the country.

This observation also holds for Moldova, where local migrant networks are a main driver of individual migration decisions (Görlich and Trebesch, 2008).

Two factors primarily influenced the destination choice of the first migrants. The first factor was access to ethnic networks (Krause, 2000; Moşneaga, 2009). Russian and Gagauz minorities in a community facilitated the departure to Russia and Turkey, while ethnic Moldovans could draw on Romanian ancestry and successfully apply for a Romanian passport, which considerably eased departure towards Western Europe. The second factor was the web of personal contacts that resulted from trading across the Moldovan-Romanian border (Sandu et al., 2006).<sup>12</sup> The Romanian border had been closed during Soviet times and its opening in the early 1990s offered ample arbitrage opportunities. The resulting “shuttle trade” flourished and gave Moldovan merchants access to a growing network of Romanian migrants who were working in Western Europe (Michalon, 2009; Arambaşa, 2009). Appendix 1 shows supporting evidence and analyzes the determinants of migration patterns in detail.

For identification, we exploit the fact that migration patterns vary greatly across observationally similar and neighboring communities. Figures 2 and 3 show the distribution of overall migration prevalence and the share of westward migrants among all migrants. While there is some spatial clustering of observed migration patterns (Figure 2), no systematic spatial pattern exists for the residual variation that is left after controlling for observable pre-migration community characteristics (which are described in Section 4.3), in particular the factors that drove the destination choice of the first migrants (Figure 3). This finding is consistent with the idea that, conditional on observables, migrant networks introduce a considerable quasi-random component in the direction of migration flows. Migrant networks can cause small differences in pre-migration community characteristics, unrelated to levels or trends in electoral preferences, to bring about large differences in migration patterns.

### 2.3 Emigration and access to information from the West

During Soviet times, Moldova was virtually cut off from the rest of the world and had little exchange through migration, travel, media, or books. Moldovans were exposed to decades of anti-capitalist, anti-Western propaganda. Even after 1991, they had only limited access to free media, in particular with regard to television, by far the most important source of information. Internet, radio, and print

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<sup>12</sup> Cross-border trade was halted when Romania joined the European Union in 2007. The result was stronger border enforcement and stricter visa and customs regulations (Arambaşa, 2009).

media played only a subordinated role (Open Source Center, 2008).<sup>13</sup> Moldovans received no terrestrial signal of Western TV and the three main television channels were state-controlled throughout the 2000s (Moldova 1, NIT and Prime TV). These channels did not provide independent coverage and focused on countries of the former Soviet Union, while the few small opposition channels were subject to continuous intimidation by the government (IJC, 2009). Until today, “Vremya”, a direct successor of the main news show of the USSR, remains the most popular news show in Moldova (Open Society Foundations, 2012). As a result, large parts of Moldova’s population have not had access to unbiased information and have been systematically misinformed (IDIS Viitorul, 2009). In 2005, only 15% of respondents agreed to the statement that “media are free [...] with no government censorship” according to the Moldovan Political Barometer.

At the same time, all available evidence suggests that information transmitted by migrants became increasingly important during the period of this study. Based on a nationally representative sample of 4,000 households, Luecke et al. (2009) report that more than 90 percent of emigrants in 2008 communicated with their families at least once a month, more than two thirds of them even at least once a week. Virtually all migrants (97%) used the phone, while email or internet telephony played no important role until after 2010. The patterns of communication are very similar for migrants to the West and migrants to the East. Figure 1 shows that the volume of incoming calls to Moldova steadily increased with the number of migrants until 2006 but skyrocketed afterwards. The steep increase is likely due to the large reduction in international calling rates and the quick spread of mobile telephony.<sup>14</sup> The growth in cross-border telephony is particularly large for main migrant destination countries such as Italy. According to bilateral data from Telegeography, calls from Italy to Moldova increased from close to zero in 1998 to 150 million minutes in 2009. This is equivalent to almost 3,000 minutes per migrant in Italy per year, or around 60 minutes per week on average. In addition, migrants frequently visit their families in Moldova, on average twice a year (Luecke et al., 2009).

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<sup>13</sup> 71% of respondents in the 2005 Moldovan Political Barometer stated that television was their main source of political information, 50% also stated that television was the source they trusted most (Open Source Center, 2008). Internet usage has been negligible until very recently. In 2008, only three percent of the population had access to the internet, most of them living in the capital Chisinau (Open Society Foundations, 2012).

<sup>14</sup> According to World Bank data in the WDI and the ICT Handbook, the increase in the volume of international calls between 2004 and 2008 coincides with a three-fold increase in mobile cellular subscriptions per 100 people (from 21 in 2004 to 67 in 2008) and a more than 50 percent drop in mobile telephony costs as well as in international calling rates.

### 3 Descriptive evidence

#### 3.1 Data and stylized facts

Our main outcome variable is the share of Communist votes in the parliamentary election of July 2009, which marked the fall of the Communist government. The main unit of analysis is the community and we consider all Moldovan communities except those in the breakaway region of Transnistria for which no data is available. Communities are typically small and rural, with an average population size of 3,793 inhabitants (median of 2,126 inhabitants). Only 45 out of the 848 communities in our sample are classified as urban. Vote shares at the community level are based on official election results as documented by the Central Election Commission.<sup>15</sup> We only consider votes cast by the resident population in Moldova and exclude the few out-of-country votes cast by migrants in Moldovan embassies and consulates abroad.<sup>16</sup> The electorate votes for political parties, not individual candidates. Parties publish the list with the names of their 103 candidates in advance (the parliament has 101 seats, 2 candidates are in reserve). The candidates are the same across communities and a member of parliament does not represent a specific territorial constituency.

The main explanatory variables are the prevalence of emigration to the West and East, which are measured as the share of westward and eastward migrants in the total population of each community (as percent). Information on emigration comes from the 2004 population census, which is one of the very few censuses worldwide with detailed information on individuals who are temporarily or permanently absent and reside abroad. Absent persons include individuals who may have lived abroad for several years as long as they had maintained family relations with the household of origin. As it was highly unusual for entire families to emigrate in the early 2000s (Luecke et al., 2009), remaining household members could provide information on migrants abroad. The census should therefore give an accurate picture of migration patterns up to 2004.

We classify destination countries as West or East based on their democracy levels. Countries with a Polity IV score higher than Moldova's are defined as Western countries. Countries with a score lower or equal to Moldova's are defined as Eastern countries (see Appendix 3 for different definitions of the West and East). This classification closely reflects destination countries' geographical position

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<sup>15</sup> There have been no reports of grave irregularities during Moldovan parliamentary elections, but we cannot fully dismiss the possibility of minor vote fraud. However, for vote fraud to explain our findings the Communists should have been less able to manipulate votes in communities with westward migration and more able to do so in communities with eastward migration. This assertion would, however, only strengthen the case that emigration affects political preferences.

<sup>16</sup> In the parliamentary election of July 2009, only 17,544 migrants participated in out-of-country voting. As out-of-country votes are listed separately, we can exclude them for our analysis.

relative to Moldova, hence the terms West and East. The most important destinations in the West are Italy (mostly Northern Italy, see Luecke et al., 2007) and other Roman-language countries; the most important destination in the East is by far Russia (see Table A1 in the appendix).

Figure 4 plots migration prevalence in 2004 against the share of Communist votes in the parliamentary election of July 2009. There is no systematic relationship between overall migration and Communist votes at the community level (upper panel). But the picture looks different once we distinguish between emigration to the West and East. The share of Communist votes (i.e., the share of votes for more democratic opposition parties) decreases with the level of westward migration (middle panel) and increases with the level of eastward migration.

### 3.2 Anecdotal evidence from qualitative interviews

To inform our understanding of the mechanisms at work, we conducted a series of non-structured interviews with return migrants and political observers in Moldova as well as with Moldovan migrants currently living in Western Europe. We asked what kind of information on politics and institutions migrants shared with their family and friends in Moldova and whether such information transfers mattered.

The general lesson from these interviews is that many migrants in the West perceived themselves as “teaching” their family and friends on how Western Europe “works”. Many interviewees portrayed those left behind as politically indifferent and uninformed, in particular in poor rural areas. Several migrants stated that they had made outright electoral recommendations to those they talked to back home. For example, one migrant in Italy told us that she had intentionally called up her family and neighbors before the July 2009 elections telling them not to be deceived by electoral gifts from Communist campaigners such as vodka or sacks of potatoes.

Corruption was one of the main political issues mentioned. Migrants told us that living in Western Europe had made them less likely to tolerate corruption and that they had encouraged their peers in Moldova not to pay bribes<sup>17</sup> and to support parties with an anti-corruption agenda instead. Several migrants reported that they had communicated a broad “vision of Europe” and of modern societies, emphasizing positive characteristics such as economic prosperity, entrepreneurship and the free movement of people (due to the Schengen area). We could not uncover evidence for strategic voting. No interviewee alluded to the idea that visa access or temporary work permits had played a role for

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<sup>17</sup> Similarly, Kubal (forthcoming) documents that migrants who have returned from Western Europe to Ukraine partly adopt socio-legal practices from their destination countries and transmit them to their families.

their political preferences or vote recommendations. In sum, the qualitative interviews strongly suggest that information transmitted by migrants in the West may have played an important role for voting decisions in communities with an uninformed electorate.

## 4 Empirical strategy

### 4.1 Basic specification

Our basic empirical specification to estimate the relationship between migration patterns and Communist votes is

$$Communist_{ij2009} = \alpha + \beta West_{ij2004} + \gamma East_{ij2004} + PremigrationVotes'_{ij}\delta + X'_{ij}\lambda + \mu_j + \varepsilon_{ij}$$

where  $i$  indexes communities and  $j$  districts. The dependent variable is the share of votes for the Communist Party in the parliamentary election of July 2009.  $West_{ij2004}$  and  $East_{ij2004}$  denote the share of a community's population that has emigrated to the West and to the East as measured by the population census in 2004. As there was barely any emigration from Moldova before the Russian financial crisis of 1998,  $West_{ij2004}$  and  $East_{ij2004}$  can also be interpreted as changes in the prevalence of migration between 1998 and 2004.  $PremigrationVotes_{ij}$  is one of our most important control variables. It captures the electoral preferences of each community before migration took off. For the parliamentary elections of both 1994 and 1998, we control for the vote share of the four major parties including the vote share of the Communist Party. In the sense that we explain changes in Communist votes by changes in the prevalence of migration to the West and East, our estimation strategy is akin to a differences-in-differences approach.  $X_{ij}$  is a vector of other control variables at the community level which we introduce in detail below.  $\mu$  is a vector of district-level fixed effects.

Our main coefficients of interest are  $\beta$  and  $\gamma$ . In accordance with destination-specific transfers of information and norms, we expect  $\beta$ , the coefficient of westward migration, to be negative and  $\gamma$ , the coefficient of eastward migration, to be positive. However, we expect the relationship between eastward migration and Communist votes to be weaker than for westward migration, as the socio-political environment of Moldova is more similar to the East than to the West. We estimate the model with ordinary least squares and cluster standard errors at the district level to take into account that election results of communities in the same district are likely to be correlated.

To arrive at causal estimates, the ideal experiment would randomize who migrates and to which destination. The coefficients of westward and eastward migration would then provide unbiased and

causal estimates of destination-specific political spillovers on those who stay behind. Such an experiment is, however, practically not feasible.

To deal with the observational nature of our data, we need to address two main challenges for identification: first, political self-selection of migrants, discussed in Section 4.2, and second, confounding factors that drive both migration and voting patterns, discussed in Section 4.3. As argued above, potential problems related to political self-selection and confounding factors should be of particular importance for the destination choice of the first migrants who set the path for subsequent migrants. However, they should be of less importance for the destination choice of the bulk of the migrants who followed suit. Path dependency is also what makes us confident that migration patterns in 2009 are very similar to those observed in 2004.

## 4.2 Political self-selection

Those who choose to migrate arguably differ in their electoral preferences from those who stay behind. At the same time, migrants to the West may differ in their electoral preferences from migrants to the East. To understand the implications of political self-selection, we distinguish between selection at the level of individuals and communities.

At the level of individuals, political self-selection refers to the exit effect described by Hirschman. If migrants are relatively less supportive of the Communist Party than the average voter in a community, their departure will *increase* the Communist vote share in that community (as the local electorate would lose opposition voters). The increase in Communist votes will be particularly strong if liberal opinion leaders who affect electoral preferences of other community member leave the country. The exit effect would hence drive the coefficients of westward and eastward migration upwards because they will capture both political spillovers on those who stay behind and the exit of opposition voters from the electorate. By contrast, if migrants are relatively more supportive of the Communist Party than the average voter, their departure will *decrease* the Communist vote share and drive the coefficients of westward and eastward migration downwards.

We cannot observe how migrants would have voted in the parliamentary election of July 2009 had they not migrated. Depending on how migrants are politically self-selected, the coefficients therefore provide a biased estimate of political spillovers.<sup>18</sup>

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<sup>18</sup> Gugushvili (2011) finds that individuals in the former Soviet republics of Armenia, Azerbaijan, and Georgia are more likely to move to Western Europe when they are dissatisfied with the democratic development of their home country.

What do we know about the political self-selection of Moldovan migrants? First, emigration from Moldova is typically motivated by economic, not political considerations (Luecke et al., 2007). Second, migrants share the demographic profile of the typical opposition voter. The average migrant is 35 years old, much younger than the average Communist voter (48 years) and close to the average age of opposition voters (40 years). Moreover, more than 60 percent of migrants have completed more than secondary education, compared to 65 percent among opposition voters and only 48 percent among Communist Party voters.<sup>19</sup> Migrants to the West, who are younger and more educated than the average migrant (Luecke et al., 2007), have a socioeconomic profile that makes them particularly unlikely to support the Communists. Third, the share of Communist votes cast by migrants at Moldova's embassies abroad was only 12 percent in 2005, much lower than the overall Communist vote share of 46 percent.<sup>20</sup> At least for westward migration, it is therefore reasonable to conclude that the exit effect runs into the opposite direction of political spillovers from abroad. The coefficient of westward migration should hence be considered a conservative estimate of political spillovers.

At the community level, political self-selection of migrants is a more serious concern. It is possible that individuals from more liberal-minded communities migrate to the West, while individuals from more Communist-oriented communities migrate to the East. The migration coefficients would then simply reflect reverse causality.

To address this problem, we exploit the fact that there was hardly any emigration before 1999. We can control for the pre-migration electoral preferences of each community by using the results from the parliamentary elections of 1994 and 1998, which were the first national elections after Moldova's independence in 1991. Both elections were widely regarded as free and fair (OSCE, 1998). The parliamentary election of 1998 took place just a few months before the unexpected Russian financial crisis hit Moldova and triggered the first wave of emigration. For each of the parliamentary elections of 1994 and 1998, we control for the vote share of the four major parties.<sup>21</sup> The share of Communist votes in 1998 and 2009 is highly correlated (the correlation coefficient is 0.74). The large persistence suggests that pre-migration electoral preferences are a meaningful measure of a community's general

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<sup>19</sup> Migrants' demographic characteristics come from the 2008 Labor Force Survey. The demographic characteristics of Communist and opposition voters come from the official exit poll of the parliamentary election of July 2009.

<sup>20</sup> Similarly, in July 2009, the share of Communist votes among migrant votes was nine percent compared to an overall share of 45 percent. No data is available for the parliamentary election of 2001. Only few Moldovans residing abroad cast their vote. The results are therefore unlikely to be representative of the migrant population.

<sup>21</sup> In both elections, more than 70 percent of the electorate cast their vote and the four major parties accounted for more than 75 percent of all votes. We should therefore capture the broad spectrum of pre-migration electoral preferences.

electoral preferences. We also include the voter turnout in 1998 as a proxy for the general interest in politics (information on voter turnout in 1994 is not available at the community level). By conditioning on pre-migration election results, we effectively analyze the change in Communist votes between 1998 and 2009. Hence, we can rule out that time-constant electoral preferences explain the relationship between migration and voting patterns.<sup>22</sup>

We find little evidence for political self-selection of migrants at the community level. Table A3 in the appendix shows that, conditional on observable community characteristics, pre-migration electoral preferences are *not* systematically associated with the size and direction of migrant flows at the community level. In particular, we do not find that communities with a higher pre-migration preference for democratic opposition parties have more migrants in the West and those with a higher pre-migration preference for the Communist or Socialist Party more migrants in the East.

One may also be concerned about political self-selection of migrants at the level of households, not individuals or communities. However, the same arguments as above apply. First, if a member of a liberal household leaves for the West and the remaining members continue voting for opposition parties, the exit effect predicts an increase in the share of Communist votes in that community – which would bias the coefficient of westward migration against political spillovers from abroad. Second, by definition the election results of a community reflect the sum of electoral preferences of households in that community. Controlling for pre-migration election results should therefore capture all relevant pre-existing differences in electoral preferences within a community.

### 4.3 Confounding factors

The second main challenge for identification are confounding factors that drive both migration and voting patterns. By looking at changes in Communist votes over time, we already eliminate any time-constant confounders. Our discussion therefore focuses on the role of time-varying confounders.

We employ three strategies to deal with time-varying confounders. First, we use fixed effects for Moldova’s 35 districts to eliminate any time-varying (and time-constant) heterogeneity at the district level and exploit only variation within districts. Moldovan districts are very small. The average district covers only 967 square kilometers (373 square miles) and is home to 26 communities. In addition, Moldovan districts follow the same boundaries as the former regional administrative units of the Moldavian Soviet Socialist Republic (*raions*). In Soviet times, raions were the basic territorial unit

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<sup>22</sup> Note that in an econometric sense this is only true if we estimate our specification in first differences as we do in our robustness checks in Appendix 2. To capture more heterogeneity of initial political preferences, however, our main specification conditions not only on the share of Communist votes but also on the vote share of other parties.

around which economic life was organized. We expect many transformations that have occurred after the collapse of the Soviet Union to affect communities within districts in a similar way. District-level fixed effects should therefore capture potential confounding processes related to observed and unobserved district characteristics. They should also account for geographical features such as proximity of certain districts to the border with Romania and the Ukraine, which may be subject to cross-border spillovers not related to migration.

Second, we control for a wide range of community characteristics. The idea behind this strategy is that observationally similar communities are subject to similar shocks and respond to these shocks in a similar way. In general, Moldovan communities are remarkably similar, particularly within the same district. There is little variation in economic activity across communities and most areas focus on agricultural production according to data from the Moldovan Ministry of Economy and Trade. The main reason for this similarity is that Moldova is small (about the size of Maryland) and was planned to be a rural economy with no industrial capacity during Soviet times. Moldova's only industrial activities are located in the breakaway region of Transnistria, which is not included in our sample.

That said, we try to control for as many dimensions of community heterogeneity as possible. We use census data to control for population size, age structure, and the skill level and distribution of the adult population.<sup>23</sup> Most importantly, we also control for the main drivers of the destination choice made by the first migrants: access to ethnic networks and distance to the Romanian border. Specifically, we use the population shares of the four most important ethnic minorities (Ukrainians, Russians, Gagauz, and Bulgarians, with Moldovans being the reference category) as well as the degree of ethnic fractionalization. As ethnic composition may have affected the evolution of electoral preferences, too, we also include squared terms of the different ethnicities' population shares.<sup>24</sup> Distance to the Romanian border is measured by the distance to the nearest Moldovan-Romanian border crossing that was open in 1998. We also include a dummy for district capitals and a dummy for the capital Chisinau and the city of Balti. These two cities are the only major cities and home to virtually all universities located in Moldova. As a proxy for remoteness, we use community's distance to the district capital, the economic and political center of a district.

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<sup>23</sup> All demographic data come from the population census in 2004. They are measured for the original overall population including migrants. Therefore, our demographic variables are representative and not affected by emigration. In theory, emigration may have affected enrolment of children in schools. In practice, however, emigration should not have had any meaningful effect on overall educational attainment in 2004 – just five years after migration took off in Moldova.

<sup>24</sup> According to the census, language patterns closely follow ethnic patterns. By controlling for ethnicity, we therefore also control for knowledge of (foreign) languages. It should also be noted that most Moldovans can communicate in Russian.

Third, we control for community-specific economic shocks. Our concern is that differential intensity of economic shocks could create spurious correlation between migration and voting patterns in a context where migration is credit-constrained (McKenzie and Rapoport, 2007; Bryan et al., 2014). For example, it could be that households in communities most hardly hit by the crisis could only afford to send migrants to the East while at the same time asking for more redistribution through voting for the Communist Party. In contrast, it is possible that households in communities with lower-intensity shocks could afford to finance longer-range and in general more costly migration to the West while at the same time opposing to more redistribution by voting against the communists. In the absence of economic data at the community level for the 1990s and early 2000s, we rely on satellite data on night-time light intensity. Light intensity as measured from outer space is a meaningful proxy for local economic activity on the ground as almost all consumption and production activities at night require lights (Henderson et al., 2012). Using high-resolution satellite images from the Defense Meteorological Satellite Program's Operational Linescan System, we measure the average light intensity on the administrative territory of each community. We take this measure for 1992, the first year for which satellite images are available, and 1999, the year following the Russian financial crisis. The difference in light intensity between 1992 and 1999 proxies the severity of a community's economic shock caused by the economic transition after Moldova's independence in 1991 and the Russian financial crisis.

Figure A1 in the appendix shows the drastic changes in night-time light. In 1992, many parts of the country were well-lit at night. By 1999, however, most Moldovan communities had become dark. Over the same period, Moldova's gross domestic product had fallen by 40 percent. Table A3 in the appendix shows that the adverse economic shocks of the 1990s indeed pushed many Moldovans abroad. Communities with a reduction in night-time light intensity between 1992 and 1999 had a significantly higher prevalence of emigration in 2004. Importantly, however, economic shocks cannot explain the direction of migration flows to the West or the East.<sup>25</sup> Finally, Table A4 in the appendix demonstrates that night-time light intensity is indeed a good proxy for economic activity at the community level. Light intensity is a highly significant predictor of local per-capita tax revenues, unemployment rates and the per-capita number of shops in 2009, a year for which economic indicators at the community level are available.

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<sup>25</sup> We also find that communities that experienced a steeper economic decline during the 1990s were more likely to vote for the Communist Party in the parliamentary election of 2001 (results available upon request).

## 5 Results

### 5.1 Migration patterns and electoral preferences

Table 1 summarizes the main results (for full regression results see Table A5 in the appendix). The first three columns investigate the relationship between migration patterns and Communist votes in the parliamentary election of July 2009. The columns gradually expand the set of control variables and check the robustness of our results against potentially important confounders.

Column 1 controls for community heterogeneity in terms of size, location, as well as demographic and ethnic composition. The results are suggestive of destination-specific political spillovers. Communities with westward migration vote significantly less for the Communist Party. The departure of one percent of the community population to the West is associated with a decrease in the share of Communist votes by about 0.7 percentage points. This result is remarkable as it implies that the departure of a (presumably) largely non-Communist electorate to the West, which would *increase* the share of Communist votes through the exit effect, is more than offset by political spillovers from abroad. We find the opposite, but weaker association for emigration to the East. A one-percentage point increase in the prevalence of eastward migration increases the share of Communist votes by about 0.4 percentage points.<sup>26</sup>

Column 2 additionally controls for pre-migration election results. The results of the parliamentary elections of the 1990s are an important predictor of election results in 2009. Yet, they barely affect the size and significance of the coefficients of westward and eastward migration. This finding is consistent with the previous finding that pre-migration election results cannot predict migration patterns. Thus, political self-selection at the community level or a time-constant confounder in general does not explain the association between migrants' destinations and Communist votes.

Column 3 adds community-specific measures of economic shocks over the course of the 1990s as measured by night-light intensity. This is our preferred specification and we continue to use it as the baseline specification in the rest of the paper. If economic shocks during the 1990s shaped the evolution of both migration and voting patterns, their inclusion in the model should affect the migration coefficients. Both coefficients, however, remain stable reflecting the previous result that

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<sup>26</sup> Our estimates of the relationship between migration patterns in 2004 and Communist votes in 2009 may be biased upwards as we attribute the effects to the migration prevalence in 2004, which was about 26 percent lower than in 2009. If we rescale the coefficients accordingly, the coefficient of westward migration is reduced to -0.52 and the coefficient of eastward migration to 0.33. However, the true bias is likely to be smaller because the magnitude of the marginal effect of emigration on Communist votes decreases with the level of emigration (see Section 6.2).

light intensity is not associated with migrants' destination choice. Hence, economic shocks are unlikely to confound the effect of migration patterns on Communist votes.

As discussed above, the migration coefficients reflect the sum of the exit effect of migrants from the electorate and political spillovers on those who stay behind. For westward migration, these two effects likely go into opposite directions, making us underestimate the size of political spillovers from the West. As we explain in detail in Appendix 2, we can bound the effect of political spillovers by making assumptions on how migrants would have voted had they stayed in Moldova. If we assume that all westward migrants would have been opposition voters, the emigration of one percent of a community's population to the West reduces the share of Communist votes *among those who stay behind* by 1.11 percentage points. Even this estimate may still be biased downwards as we assume that liberal-minded migrants would not have influenced the electoral preferences of other community members before their departure. In the presence of such peer effects, however, the exit effect and hence our underestimation of the size of political spillovers would be even larger. Our baseline coefficient of westward migration should therefore be interpreted as a conservative estimate of the political spillovers from westward migration. Appendix 2 presents detailed results on the potential size of political spillovers for different assumptions on the voting behavior of westward and eastward migrants.

The remaining columns of Table 1 show the relationship between migration patterns and vote shares of the four opposition parties that jointly formed the ruling coalition after the elections. The Liberal Democratic Party and the Liberal Party win votes in communities with westward migration. The Liberal Party attracts considerably fewer votes in communities with eastward migration. Votes for the other two parties are not significantly associated with migration patterns.

In Appendix 3, we perform a number of robustness checks. We show that our results are robust to (i) the inclusion of additional control variables such as the demographic characteristics of migrants, (ii) alternative econometric specifications such as estimation in first differences, and (iii) alternative definitions of the West. In particular, the coefficient of westward migration becomes even more negative when we drop Italy, the main destination of Moldovan migrants to the West and arguably not an ideal-type democracy. In Section 6.1, we also show that the results are mostly driven by emigration to the most advanced democracies.

## 5.2 Testing for time-varying unobserved confounders

A remaining challenge for causal interpretation is an unobserved time-varying confounder. Such a confounder must work at the sub-district level as the district fixed effects already wipe out any unobserved shock at the district level. In addition, the stability of the migration coefficients across columns 1 to 3 of Table 1 implies that a confounder must be much more strongly associated with migration and voting patterns in the 2000s than election results and economic shocks in the 1990s. We assess this possibility in two tests.

### *Migration patterns and electoral preferences over time*

The first test for time-varying unobserved heterogeneity investigates the relationship between Communist votes and migration patterns over time. The first part of Table 2 examines the relationship between migration patterns and Communist votes in all parliamentary elections since 2001. Of particular interest is the parliamentary election of 2001. It was the first parliamentary election after the Russian financial crisis, which triggered the departure of the first migrants, and the election that brought the Communist Party back to power. In 2001, the level of emigration was still low (see Figure 1) and most of the migrants captured in the census in 2004 had not left yet. Hence, if it is migration and not a confounder that drives our result, there should be no association between Communist votes in 2001 and migration patterns in 2004.

Column 1 shows that migration patterns in 2004 are indeed not significantly associated with Communist votes in 2001. This finding strengthens the common trend assumption of our identification strategy. It also suggests that the destination choice of the first migrants, which laid the basis for the migration patterns in 2004, was not systematically related with the evolution of electoral preferences in the aftermath of the Russian financial crisis.

Migration patterns are not significantly related to Communist votes in 2005 either (column 2), although the level of emigration was already high. Two reasons may explain this result. First, the intensity of communication between migrants and their families and friends in Moldova was still low as suggested by the volume of international calls from and to Moldova (see Figure 1). Between 2005 and 2009, however, the volume of international calls increased by a factor of four. The fall in communication costs during that period likely increased communication and information flows from abroad. Second, the 2005 result does not necessarily indicate the absence of political spillovers. As explained above, the migration coefficients reflect both the exit effect and destination-specific political spillovers. For westward migration, these two effects arguably go into opposite directions.

Hence, political spillovers may well have been present in 2005 but not yet large enough to overcompensate for the exit effect. Indeed, if one neutralizes the exit effect by assuming that all westward migrants would have voted for the opposition parties (see Appendix 2 for details on the methodology), the coefficient of westward migration becomes significantly negative and its magnitude increases from -0.18 to -1.10.

Only in the more recent elections of 2009 and 2010 are migration patterns significantly associated with voting behavior (columns 3-5). The coefficient (and marginal effect) of westward migration becomes larger over time, rising from -0.40 in April 2009 to -0.85 in November 2010. This result is consistent with the qualitative evidence presented above that migrants in the West increasingly raised their voice after the disputed elections in April 2009, which marked the political deadlock between the Communist Party and the opposition, and encouraged their families and friends in Moldova to vote for the more democratic opposition parties. Similarly, the coefficient of eastward migration slightly increases from 0.27 in April 2009 to 0.39 in July 2009. However, it is no longer significantly different from zero in November 2010. Thus, if there were political spillovers from eastward migration, they appear to be weaker and instable.

The second part of Table 2 goes beyond parliamentary elections and looks at Communist votes in local elections over the period 1999-2007. The municipal election of 1999 is particularly suitable to test for the existence of a confounder as it took place in the immediate aftermath of the Russian financial crisis, just when the first migrants left Moldova. The set of explanatory variables is the same as in our baseline regression. However, as vote shares are not available, the dependent variable is a dummy indicating whether a Communist mayor was elected. Results from a linear probability model strongly suggest that there were no initial differences in electoral preferences between communities with different subsequent migration patterns (column 6). The point estimates of both migration coefficients are essentially zero. The same holds true for the municipal elections of 2003, supporting our common trend assumption (column 7). It is only in the local elections of 2007 that communities with westward migration diverge and become less likely to elect a Communist mayor (column 8). A one-percentage point increase in emigration to the West decreases the probability of electing a Communist mayor by about two percentage points. This result is important as we observe political spillovers of westward migration already before the global financial crisis of 2008.

Overall, the findings reported in Table 2 further limit the range of potentially relevant confounders. Any remaining confounder must have affected migration patterns well before 2004 and electoral preferences only thereafter with a lag of several years.

### *Spatially concentrated time-varying confounders*

The second test for time-varying unobserved heterogeneity builds on the idea that an unobserved confounder would likely be spatially concentrated and affect neighboring communities in a similar way. Indeed, spatial clustering has been observed for changes in political variables such as electoral preferences (e.g., Kim et al., 2003) as well as for changes in economic variables such as unemployment rates (e.g., Overman and Puga, 2002). Local fixed effects should at least partially capture a spatially concentrated confounder and then reduce the size of the migration coefficients. They should increasingly do so the smaller the geographical area they are based on. In the absence of such a confounder, however, local fixed effects should not significantly affect the size of the coefficients.

To test these implications, we introduce local fixed effects that are based on a geographical grid of quadratic cells and much finer than the district-level fixed effects. We start with cells sized 30x30 kilometers (18.6x18.6 miles) and then reduce the cell size to 15x15 kilometers (9.3x9.3 miles). This procedure increases the number of local fixed effects from 35 with district fixed effects to 52 using 30x30 kilometer cells and 162 using 15x15 kilometer cells. The average number of communities in each cell is 16 using 30x30 kilometer cells and five using 15x15 kilometer cells. Figure A2 in the appendix illustrates the different resolutions of the grid on a map of Moldovan districts. The finer the grid, the more unobserved (time-varying and time-invariant) heterogeneity we expect to capture. Compared to our baseline specification, the grid should make communities more comparable in terms of (i) local labor markets and economic shocks, (ii) political movements and exposure to political campaigns, (iii) access to and influence from social networks including early migrant networks, (iv) exposure to weather fluctuations or natural disasters, and (v) local reception of different media channels. To deal with the arbitrary boundaries created by the grid, we shift the grid by random distances and iterate the analysis a hundred times.

Table A8 in the appendix reports the coefficients and standard errors of the first iteration as well as the average coefficient over the 100 iterations for the two grid resolutions. The coefficients of both westward and eastward migration are remarkably robust to the use of fixed effects for grid cells. The average size of the coefficients drops only slightly. We use a simple t-test to compare the differences between the estimated coefficients of westward migration to the baseline coefficient of -0.63 (column 3 of Table 1). In none of the 200 total iterations can we reject the hypothesis that the difference is significantly different from zero. It is particularly remarkable that the size of the estimated coefficients is completely robust to increasing the grid resolution from 30x30 kilometer to

15x15 kilometer cells. For eastward migration, only nine of the 200 estimated coefficients are significantly different from the baseline coefficient. We are therefore confident that the coefficients of westward and eastward migration are not biased by a spatially concentrated confounder.

The two tests strongly support a causal interpretation of the effects of emigration on Communist votes. To challenge a causal interpretation, an unobserved confounder must (i) be time-varying, (ii) much more strongly associated with migration and voting patterns in the 2000s than election results and economic shocks in the 1990s, (iii) affect electoral preferences several years later than migration flows, (iv) be specific to a community or not affect neighboring communities in a similar way, and (v) account for the opposing effects of westward and eastward migration. While we cannot rule out such a confounder, we consider its existence implausible. Moreover, the baseline coefficient of westward migration likely underestimates the size of political spillovers as it also reflects the exit of opposition voters from the electorate. The mere departure of liberal-minded voters to the West should increase, not decrease, the share of Communist votes in a given community.

### 5.3 How large is the effect?

To better understand the quantitative importance of our results, this subsection performs a simple counterfactual analysis of the effects of emigration on election results in July 2009. Our back-of-the-envelope calculations are based on the point estimates from the baseline specification (column 3 of Table 1). For simplicity, we assume that migrants would have had the same electoral preferences and voter turnout as their home communities.

Table A9 in the appendix presents the observed and counterfactual nation-wide shares of Communist votes and the resulting changes in the number of parliamentary seats for different scenarios. The first part of the counterfactual analysis holds the level of migration constant, but changes the direction of migration flows. We first assume that all migrants to the West had migrated to the East instead. The Communist Party would have won an additional vote share of three percentage points. With 51 out of 101 seats, it would have gained the absolute majority in parliament, so there would have been no change in government. We find the opposite result if all migrants to the East had migrated to the West instead. The migrant population in the West would have tripled, stripping the Communist Party of even more votes (five percentage points less) and resulting in a landslide victory of the opposition.

The second part of the counterfactual analysis changes the level of migration flows. We first examine the case with no migration to the West and unchanged migration to the East. The Communist Party

would have gained two percentage points more votes and only been one seat short of staying in power. We find the opposite result for the case with no migration to the East and unchanged migration to the West. The Communist Party would have lost about two percentage points of votes.

These counterfactual results suggest that the political consequences of emigration have considerably contributed to the end of Communist rule in Moldova in 2009.<sup>27</sup>

## 6 What explains political spillovers of emigration?

In this section, we provide suggestive evidence that the political spillovers from westward migration are the result of transfers of information and norms from abroad. We also rule out three alternative explanations: strategic voting, monetary remittances, and return migration.

### 6.1 Transfer of information and norms

We first examine whether there is effect heterogeneity that is consistent with information and norm transfers. We then supplement the community-level evidence with an analysis of individual-level data on political preferences from a public opinion poll.

If political spillovers operate through the transfer of information and norms, they should rise with the level of democracy abroad even within the West. There is very little variation within the West in the Polity IV score which we use to define Western and Eastern destinations. We therefore rely on the Economist Intelligence Unit's index of democracy that allows distinguishing between "full" and "flawed" Western democracies (see Kekic, 2006, for details). Flawed Western democracies include Italy, Romania, Israel, Cyprus, Bulgaria and Poland. As column 1 of Table 3 shows, the effect of westward migration is driven by emigration to full, not flawed Western democracies. A one-percentage point increase in emigration to full Western democracies reduces Communist votes by about 1.3 percentage points. The equivalent marginal effect for emigration to flawed Western democracies is -0.33 and not significant. Hence, even within the West, our evidence is consistent with the transfer of democratic information and norms.

These results are important because they address potential concerns regarding the selection of migrants. As Table A10 in the appendix shows, Moldovan migrants to the West tend to be more educated, older and female and they remit higher amounts of money than migrants to the East.

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<sup>27</sup> It is important to emphasize that we do not consider general equilibrium effects such as the effect of emigration on the political system. For example, the political platform of the Communist Party (or other parties) may have responded to migration-induced changes in the electoral preferences of the median voter. To the extent that the Communist Party has made its political platform more liberal in response to such changes, our partial equilibrium analysis is therefore likely to underestimate the overall political effects of emigration to the West.

However, there are hardly any differences in the characteristics between migrants to full and migrants to flawed Western democracies. The distribution of skills, age and remittances is essentially the same. In addition, the distribution of Moldovan migrants across sectors and occupations is very similar within Western destinations (Biroul Național de Statistică, 2009). The only observable difference is that relatively more women migrate to flawed democracies, which is due to the fact that Italy is a particularly popular destination for women. Differences in migrant characteristics are therefore unlikely to explain the heterogeneous effects within the West (as is also suggested by our robustness check in Appendix 3).

We also investigate other dimensions of effect heterogeneity. If political spillovers work through the transfer of information and norms, they should be strongest in areas where information asymmetries are large. We expect the spillover effects to be more pronounced in rural areas, which are typically less exposed to external influences and media. Indeed, if we exclude the 45 urban localities from the sample, the coefficient of westward migration increases to -0.73 (column 2 of Table 3). More importantly, we expect information and norms from the West to be most relevant in communities in which relatively more voters grew up in Soviet times and were exposed to Soviet propaganda. Similarly, they should also be more relevant in communities with a lower average level of education. We therefore split our sample at the median of the share of the population that was older than 21 years when the Soviet Union collapsed in 1991 and at the median of the share of the population with higher education. The effect of westward migration on Communist votes is indeed larger in older and less educated communities (columns 3-6 of Table 3).

As a more direct test for the transfer of information and norms, we analyze whether westward migration also changes socio-political views, not only electoral preferences. We draw on data from the Moldovan Political Barometer, a nationally representative public opinion poll that has been conducted biannually since 2001. To exploit the time dimension, we pool all waves conducted before the government changed in July 2009 that record the location of each interview. This leaves us with eight waves, conducted between April 2002 and March 2009. These years span almost the entire period during which the Communist Party was back in power. The sample includes 8,350 individuals from 321 different communities. Our outcomes are based on five politics-related questions that have been repeatedly asked over the years: whether an individual (i) is satisfied with life in general, (ii) has trust in the government, (iii) has trust in local media, (iv) would like the state to play an increased role to improve socio-economic conditions, and (v) would vote for the Communist Party should there be elections next Sunday.

We estimate an individual's views with a linear probability model controlling for sex, age, education, and ethnicity as well as the same set of community-level variables including district-level fixed effects as in the baseline specification. To capture the change in views over time, we introduce an interaction term between westward/eastward migration and the year in which the interview took place.

Table 4 shows that individuals in communities with westward migration significantly change their views over the years. They are increasingly less satisfied with life, put less trust in the government and local media, and are more skeptical of state intervention. These findings are consistent with the argument that the transfer of information and norms changes the reference point of those who stay behind and ultimately affects their political preferences. We also reproduce our main result. Those who live in communities with westward migration are increasingly less likely to vote Communist. We observe no changes for individuals who live in communities with eastward migration, possibly because the news and views transmitted by eastward migrants are less likely to contain new information. Indeed, due to the joint Soviet legacy and easy access to pro-Russian media, Moldovans may already have been well-informed about the situation in Russia.

The results from the public opinion poll are important because they are based on a representative sample of the adult population, not on a sample of active voters. This suggests that the relationship between westward migration and voting patterns works through changes in electoral preferences and not through changes in the incentives of individuals with given electoral preferences to cast their vote. This conclusion can also be drawn from column 6 of Table 4 showing that individuals from communities with westward migration do not change their propensity to vote over the years.<sup>28</sup>

## 6.2 Strategic voting

Political spillovers could also be the result of strategic voting. Irrespective of their political convictions, voters may change their voting behavior to strategically support a party that is more likely to protect their migrant relatives abroad and the flow of remittances. Communities with migrants in the West may then vote for the Alliance of European Integration because these parties are more likely to seek integration with Western Europe, possibly easing visa requirements and

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<sup>28</sup> We also investigate the relationship between voter turnout and migration patterns at the community level. Column 1 of Table A11 in the appendix regresses the voter turnout in the parliamentary elections of July 2009 on westward and eastward migration using our baseline specification. Both types of migration are associated with a significant reduction in voter turnout, reflecting the absence of migrants from the electorate. Migrants are typically not registered and therefore remain on voter lists. Column 2 shows that our main results are robust to controlling for voter turnout in the election of July 2009.

lowering the costs of sending remittances. By contrast, communities with migrants in the East may vote for the Communist Party to secure good relations between Moldova and Russia.

Our previous result on differential effects within the West provides strong evidence against strategic voting. In case of strategic voting, communities with migrants in full Western democracies should have the same electoral preferences as communities with migrants in flawed Western democracies. This is especially so as there are hardly any differences in migrant characteristics within the West. In particular, the economic benefits derived from migration to the West do not differ as migrants to flawed Western democracies send about the same amounts of remittances as migrants to full Western democracies (see Table A10 in the appendix). Yet, and inconsistent with strategic voting, only communities with migrants in full Western democracies vote significantly less for the Communist Party. The previous results from the public opinion poll (Table 4) are not consistent with strategic voting, either. They clearly indicate that westward migration is also associated with changes in socio-political views, not only electoral preferences.

The curvature of the relationship between migration and voting patterns offers another way to test for strategic voting. The desire to protect migrants should increase at least proportionally with the level of migration and the resulting dependency on remittances flows. We test this prediction in column 7 of Table 3 by adding squared terms of the prevalence of westward and eastward migration to our baseline specification. However, the magnitude of the marginal effect of emigration on Communist votes decreases with the level of emigration. Again, this result points to the transfer of information and norms as relevant transmission channel: As more and more migrants leave for a given destination, an additional migrant should be less likely to transfer new information and norms.

### 6.3 Monetary remittances

Monetary remittances represent another potential transmission channel. Remittances can affect political preferences because they increase the disposable income of recipient households and also change income inequality.

Our result on differential effects within the West is a strong argument against monetary remittances as relevant transmission channel. Both the incidence of migration as measured by the socio-economic characteristics of migrants and the level of remittances are very similar across Western destinations (see Table A10 in the appendix). Monetary remittances from the West should thus have no differential effects on income and income inequality, irrespective of whether they originate from

full or flawed Western democracies. Therefore monetary remittances cannot explain why political spillovers are much stronger for emigration to full rather than flawed Western democracies.

Likewise, monetary remittances are unlikely to account for the differential effects of westward and eastward migration. To explain our main result, remittances from the East should *increase* and remittances from the West *decrease* support for the Communist Party. With respect to income, we cannot think of a plausible reason why remittances should have a non-monotonic relationship with Communist votes. Of course, there may be differences in consumption patterns and endowment levels between households with a migrant in the East and households with a migrant in the West. However, these differences cannot explain why remittance from the West would have the *opposite* income effect than remittances from the East. With respect to income inequality, the Communists should gain, not lose, votes in communities with westward migration. This is because Moldovan migrants in Western Europe remit on average about 50 percent more money than migrants in Russia (Luecke et al., 2007). Moreover, migrating to the West is costly, mainly due to visa restrictions, and was therefore more widespread among initially richer households.<sup>29</sup> As a result, remittances from the West should have made relatively rich households richer, increasing income inequality and the demand for redistribution by the majority of voters without a migrant abroad. The Communist Party, which favors redistributive policies, should then have become more popular in communities with westward migration – which is exactly the opposite of what political spillovers would predict.

#### 6.4 Return migration

We finally consider return migration as potential transmission channel. To address this possibility, we commissioned two questions in an exit poll of the parliamentary election of November 2010. Individuals were asked whether they themselves had ever lived abroad for at least three months since 1991 and if so where, and whether family members had ever lived abroad and if so where. We are thus able to distinguish between return migrants and non-migrants in the electorate.

The exit poll was conducted with 7,344 individuals in 71 communities.<sup>30</sup> Due to time constraints the exit poll only distinguished between destinations in the European Union, the Commonwealth of Independent States (an association of former Soviet republics including Russia), and the rest of the world. We classify the European Union as West and the two remaining regions as East.

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<sup>29</sup> By contrast, eastward migration is cheap and accessible to poorer households as would-be migrants can relocate without a visa and only need to board a train to Russia (Luecke et al., 2007).

<sup>30</sup> Respondents were asked to tick the party they had voted for in a private cabin and drop the questionnaire in a box. The results should therefore not be manipulated or biased because of revealed electoral preferences.

We estimate an individual's decision to vote for the Communist Party using a linear probability model. Table 5 summarizes the results. Column 1 controls for an individual's sex, age, education, and ethnicity. Column 2 adds community fixed effects to capture unobserved heterogeneity between communities.

Returnees from the West are seven percentage points less likely to vote for the Communist Party than individuals who have not been abroad. Returnees from the East, however, do not vote differently. The findings are almost identical for individuals with a family member abroad. Individuals with a family member in the West are eight percentage points less likely to vote Communist. The magnitude of this association is comparable to the association between higher education and voting Communist. We find no significant association between having a family member in the East and Communist votes.<sup>31</sup>

We also use the exit poll to look at the relationship between a community's migration prevalence and Communist votes for the sub-samples of (i) individuals with a family member in the West, (ii) individuals with a family member in the East, and (iii) non-migrant individuals with no family member abroad. If political spillovers from westward migration indeed operate through the transfer of information and norms, community-level exposure to the West should be less informative for individuals with family in the West (as they would receive this information directly from their migrants) and more informative for individuals with family in the East or no family abroad. Indeed, the community prevalence of westward migration is not significantly associated with Communist votes for the former group (column 3), but negatively and significantly with the latter two groups (columns 4 and 5).

These results provide suggestive evidence that the observed relationship between westward migration and Communist votes is due to spillovers on those who stay behind and not the return of migrants to the electorate.

## 7 Conclusion

The fact that knowledge diffuses locally rather than globally (Jaffe, Trajtenberg and Henderson, 1993) has been seen as evidence that an important part of knowledge is tacit. This was recognized by sociologists and economists well before the diffusion of knowledge could be tracked through patent citations. For example, Polanyi (1966) or Arrow (1969) suggested that knowledge diffusion requires

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<sup>31</sup> Likewise, our community-level analysis does not find a significant association between eastward migration and Communist votes in the parliamentary election of November 2010 (column 5 of Table 2).

direct forms of human interaction. Hence, one would expect the international diffusion of knowledge to be affected by the pattern of international migration; and indeed, recent research has confirmed this conjecture (Kerr, 2008).

The circulation of knowledge and ideas is not restricted to the technological realm. Rather, social norms and political preferences also diffuse through direct human interactions and the cross-border movement of people magnifies their diffusion across borders. Such transfers of ideas and values have been termed “social remittances” when they occur from the destination to the origin country of migrants (Levitt, 1998). In a recent essay, Rodrik (2014) noted that “perhaps the single most important source of ideas and policy innovation are practices that prevail elsewhere” and used the concept of “emulation” to qualify process of their international diffusion. In Rodrik’s words, political remittances have a strong emulation potential, especially in a globalized context with democratized access to communication and travel.

This paper suggests that migrants can be an important vector of such emulation. Using administrative and individual survey data from Moldova, a former Soviet Republic, we investigate the effect of labor migration on political outcomes at home. For identification, we rely on destination-specific effects and on the quasi-experimental context in which the episode of emigration we analyze took place.

The main challenge for identification is that migrants’ destination choice, in particular the choice made by the first migrants (who then form migrant networks generating chain migration) could have been driven by political preferences or by a confounder that drives both migration and voting patterns at the community level. Our results cannot be explained by individual self-selection of migrants on political grounds (i.e., the fact that migrants with stronger preferences for democracy opt for more democratic destinations). If anything, the exit effect should increase, not decrease, the share of Communist votes in communities with significant emigration to the West. To address political selection and a confounder at the community level, we control for pre-migration political preferences and a large range of other community characteristics including the intensity of the economic crisis that triggered emigration from Moldova (as measured by changes in levels of nighttime light intensity). To challenge a causal interpretation, we show that a remaining confounder must (i) be time-varying, (ii) be much more strongly associated with migration patterns and electoral preferences than important control variables, (iii) affect electoral preferences several years after migration took place, (iv) not affect neighboring communities in a similar way, and (v) account for

the opposing effects of westward and eastward migration. While we cannot rule out such a confounder, we consider its existence implausible.

We document a significant and robust negative effect of emigration to the West on the share of votes for the Communist Party in the Moldovan elections of 2009-10. Counterfactual simulations suggest that emigration to the West significantly contributed to bringing down the last ruling Communist government in Europe, twenty years after the fall of the Berlin wall. Finally, our results are suggestive of a preferences transmission mechanism, as attested by the presence of democratic spillovers to members of households without any migrant or by the fact that the effect of emigration on electoral outcomes is stronger in older and less educated communities, where the potential for new information to make a difference is presumably greater. Adding credence to this interpretation, the results appear to be driven by emigration to the sub-set of European countries with the highest democratic standards.

This paper therefore suggests that labor migration to democracies contributes to the global diffusion of democracy. Obviously, there have been instances in recent history where emigration to Western democracies did not bring a democratic dividend to the home countries, at least not yet. Decades of Cuban immigration to the U.S. or of Iranian immigration to the West arguably did little to promote democracy in Cuba or Iran. The factors that explain the democratic effects of emigration may have to do with the extent to which migrants can retain close ties and freely communicate with their home communities, as suggested in this paper, but also, possibly, with the cultural distance between home and host countries, the degree of social integration of immigrants in the host societies, or with the circumstances that led to emigration in the first place.

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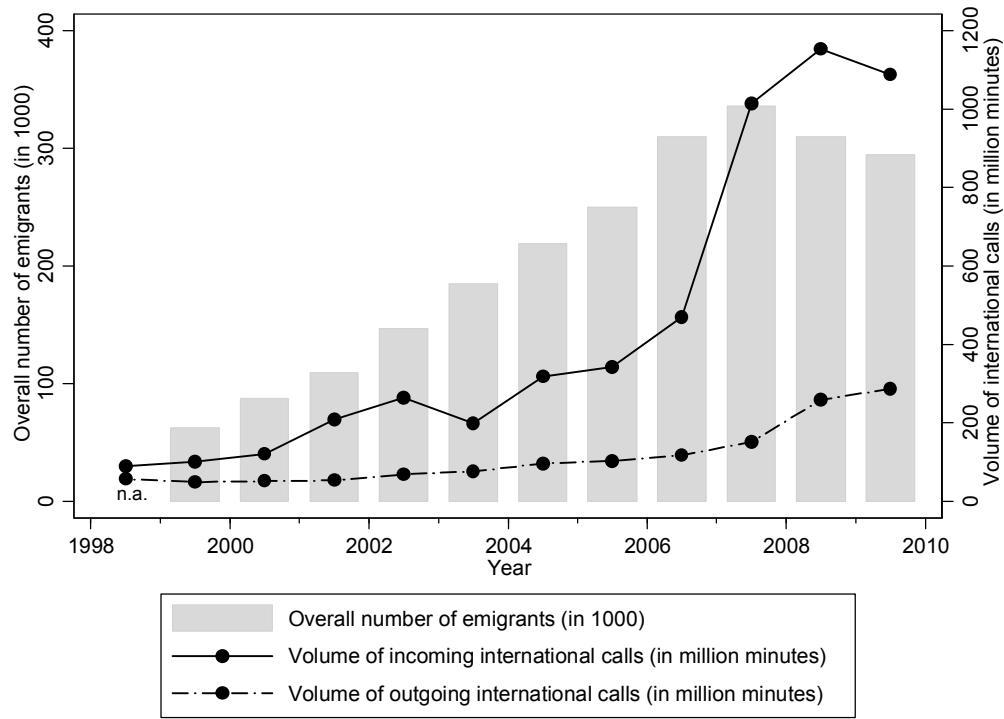
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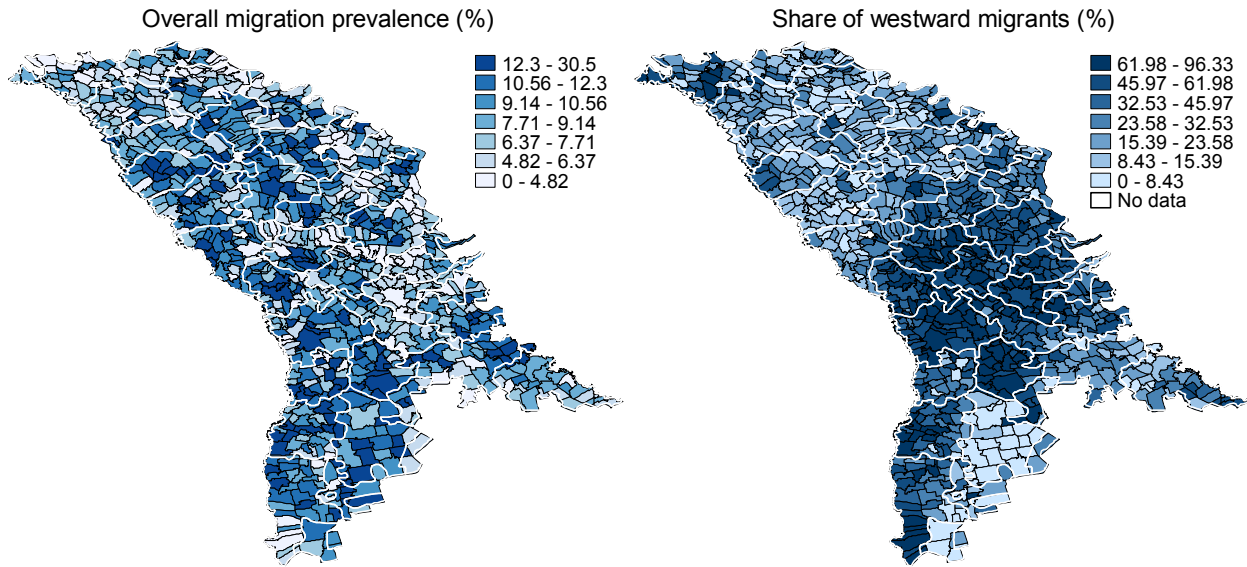
## Figures

Figure 1: Number of emigrants in stocks (bars) and volume of international phone calls to and from Moldova (lines), 1998-2010



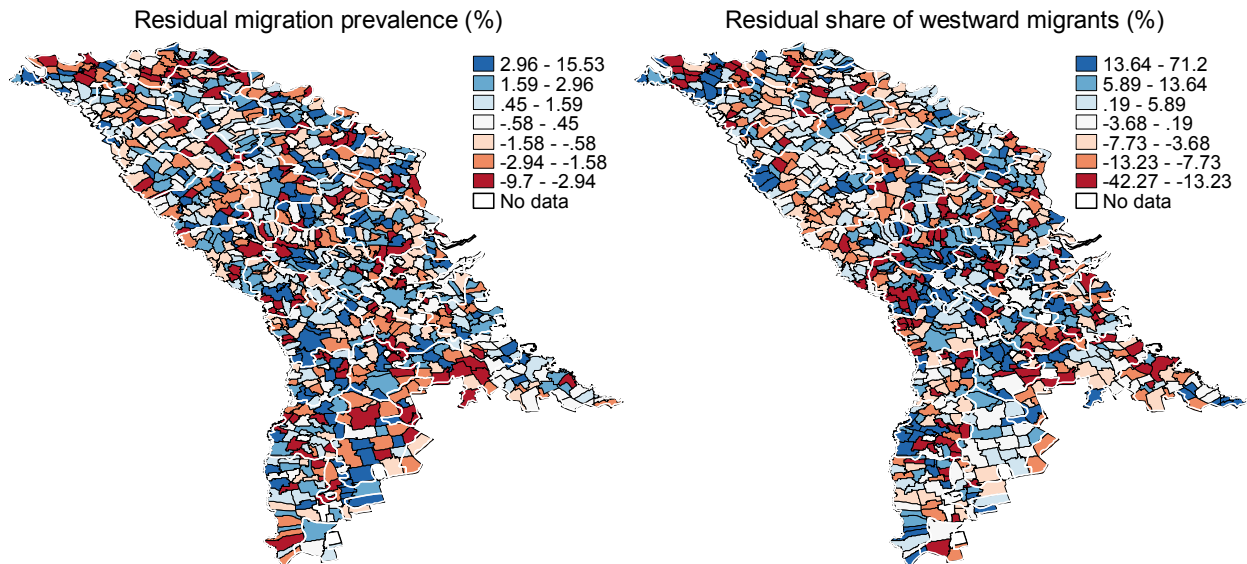
Bars represent the overall number of emigrants in stocks (in 1000). Data come from yearly waves of the Moldovan Labor Force Survey. Pre-2006 numbers of emigrants are adjusted to account for a change in the sampling method of the Moldovan Labor Force Survey. Data on emigration from Moldova before 1999 are not available. The first wave of the Moldovan Labor Force Survey was conducted in 1999, just after the unexpected Russian financial crisis hit Moldova in late 1998 and triggered the first big wave of emigration. Information on destination countries is not available in pre-2006 waves. The same trend in the number of migrants is observable using data on Moldova immigrants from major destination countries. In 1998, for example, only 15 Moldovan immigrants were registered in Italy. This number increased to 40,000 by 2004. A similar development occurred in other destination countries such as Greece, Portugal and Spain (see footnote 10 for sources and more details). Lines represent the volume of international calls (in million minutes). Data come the International Traffic Database compiled by Telegeography.

Figure 2: Observed spatial patterns of emigration from Moldova: Overall migration prevalence and share of westward migration across communities



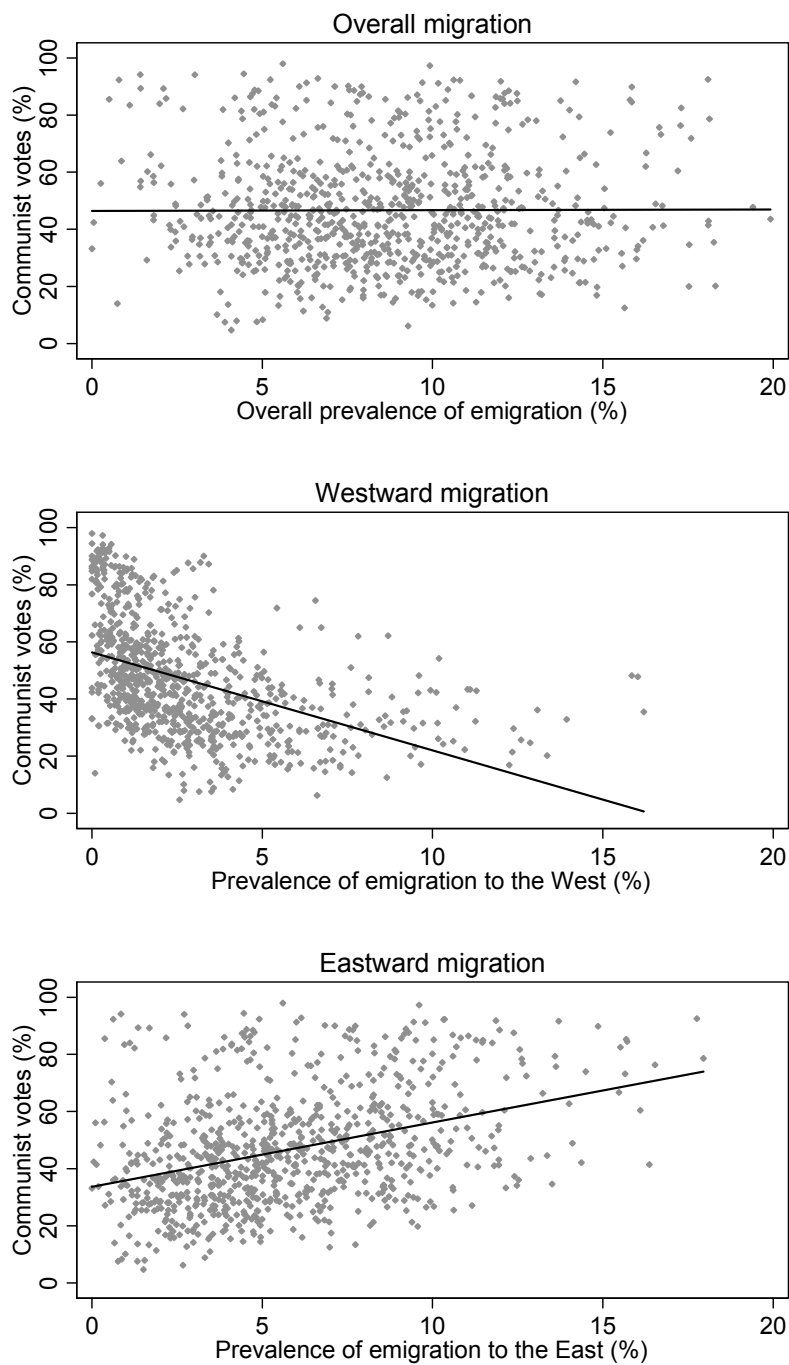
This figure shows a map of the observed overall migration prevalence (left panel) and the share of westward migrants (right panel) across Moldovan communities, based on the 2004 population census. Overall migration prevalence is the share of migrants as percent of the total population. The share of westward migrants is measured in percent of all migrants in the community. District borders are drawn in white.

Figure 3: Residual variation in spatial patterns of emigration from Moldova



This figure shows a map of the residual variation in emigration patterns across Moldovan communities, after controlling for the full set of community-level variables of our baseline specification (column 3 of Table A5 in the appendix). The left panel shows residuals from a regression using overall migration prevalence as dependent variable (column 1 of Table A3 in the appendix). The right panel shows residuals from a regression using the share of westward migrants as dependent variable (column 2 of Table A3).

Figure 4: Emigration in 2004 and share of Communist votes in July 2009 across communities



The figure shows the relationship between overall migration prevalence (upper panel), migration prevalence to the West (middle panel), migration prevalence to the East (lower panel) and the share of Communist votes across 848 Moldovan communities. The horizontal axis measures the share of migrants as percent of the total population (based on the 2004 population census). The vertical axis measures the share of Communist votes in the parliamentary elections of July 2009 (based on official election results). We only include votes cast in Moldova. Votes cast by migrants abroad are excluded.

## Tables

Table 1: Migration patterns and results of the July 2009 parliamentary election

	Share of votes for the Communist Party (%)			Share of votes for opposition parties (%)			
	Basic controls	Plus pre-migration election results	Plus night-time light (full model)	Liberal Democratic Party	Liberal Party	Democratic Party	Party Alliance Our Moldova
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Prevalence of emigration to the West (%)	-0.70*** (0.20)	-0.63*** (0.18)	-0.63*** (0.18)	0.40*** (0.13)	0.24** (0.11)	0.08 (0.12)	-0.16 (0.15)
Prevalence of emigration to the East (%)	0.44** (0.17)	0.39** (0.16)	0.39** (0.16)	-0.07 (0.09)	-0.17** (0.07)	-0.07 (0.08)	-0.01 (0.11)
Basic controls	yes	yes	yes	yes	yes	yes	yes
Pre-migration election results	-	yes	yes	yes	yes	yes	yes
Night-time light	-	-	yes	yes	yes	yes	yes
District fixed effects	yes	yes	yes	yes	yes	yes	yes
Number of observations	848	848	848	848	848	848	848
R <sup>2</sup>	0.78	0.82	0.82	0.56	0.66	0.42	0.37

The table reports OLS estimates for 848 Moldovan communities. The dependent variables are the vote shares of different parties in the July 2009 parliamentary election at the community level (in percent). The set of basic controls includes community-level variables capturing population size, age structure, ethnic composition, skill level and distribution of the population, a dummy for district capitals and the cities of Chisinau and Balti, the distance to the district capital and the next Romanian border crossing. Table A5 in the appendix shows the full regression results. Standard errors clustered at the district level in parentheses. \*\*\* denotes statistical significance at the 1 percent level, \*\* at the 5 percent level, and \* at the 10 percent level.

Table 2: Migration patterns and Communist votes over time, 2001-2010

	Share of Communist votes in parliamentary elections (%)					Communist mayor (dummy)		
	2001	2005	April 2009	July 2009	2010	1999	2003	2007
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Prevalence of emigration to the West (%)	-0.30 (0.30)	-0.18 (0.34)	-0.40** (0.20)	-0.63*** (0.18)	-0.85*** (0.17)	-0.00 (0.01)	-0.00 (0.01)	-0.02** (0.01)
Prevalence of emigration to the East (%)	0.00 (0.14)	-0.13 (0.16)	0.27* (0.14)	0.39** (0.16)	0.20 (0.20)	0.00 (0.01)	-0.00 (0.01)	0.00 (0.01)
Full set of controls	yes	yes	yes	yes	yes	yes	yes	yes
District fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Number of observations	848	848	848	848	848	822	848	848
R <sup>2</sup>	0.79	0.52	0.68	0.82	0.82	0.22	0.19	0.18

The table reports OLS estimates for 848 Moldovan communities. The dependent variables are the vote shares of the Communist Party in the parliamentary elections between 2001 and 2010 at the community level (in percent) (columns 1-5) and a binary indicator whether a Communist mayor was elected in the municipal elections of 1999, 2003, and 2007 (columns 6-8). The full set of controls includes community-level variables capturing population size, age structure, ethnic composition, skill level and distribution of the population, a dummy for district capitals and the cities of Chisinau and Balti, the distance to the district capital and the next Romanian border crossing as well as pre-migration election results and night-light intensity. Standard errors clustered at the district level in parentheses. \*\*\* denotes statistical significance at the 1 percent level, \*\* at the 5 percent level, and \* at the 10 percent level.

Table 3: Heterogeneity of the effect of migration patterns on Communist votes

	Heterogeneity within the West	Only rural communities	By share of population who grew up in the Soviet Union (were older than 21 years in 1991)		By share of population with higher education		Non-linear specification
			below median	above median	below median	above median	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Prevalence of emigration to the West (%)		-0.73*** (0.18)	-0.37* (0.23)	-0.89*** (0.31)	-0.66*** (0.19)	-0.41* (0.25)	-1.29*** (0.49)
Prevalence of emigration to the East (%)	0.39** (0.16)	0.52*** (0.14)	0.75*** (0.21)	0.08 (0.19)	0.52** (0.23)	0.32 (0.25)	0.93*** (0.32)
Prevalence of emigration to full Western democracies (%)	-1.32*** (0.36)						
Prevalence of emigration to flawed Western democracies (%)	-0.33 (0.22)						
(Prevalence of emigration to the West) <sup>2</sup>							0.05* (0.03)
(Prevalence of emigration to the East) <sup>2</sup>							-0.03** (0.02)
Full set of controls	yes	yes	yes	yes	yes	yes	yes
District fixed effects	yes	yes	yes	yes	yes	yes	yes
Number of observations	848	803	424	424	424	424	848
R <sup>2</sup>	0.82	0.81	0.81	0.82	0.78	0.87	0.82

The table reports OLS estimates. The dependent variable is the vote share of the Communist Party in the July 2009 parliamentary election at the community level (in percent). Column 1 distinguishes between full and flawed democracies within Western destinations based on the classification provided by the Economist Intelligence Unit's index of democracy of 2006 (the index is not available for earlier years). Full Western democracies include Portugal, Greece, Spain, France, Germany, the Czech Republic, Great Britain, Ireland, the United States, Belgium, Austria, Canada, Switzerland and the Netherlands. Flawed Western democracies include Italy, Romania, Israel, Cyprus, Bulgaria and Poland. Moldova is also classified as flawed democracy. Column 2 excludes urban communities from the sample and is thus based on 803 rural communities only. For columns 3 and 4 as well as 5 and 6, the total sample is split at the median of the respective variable. The full set of controls includes community-level variables capturing population size, age structure, ethnic composition, skill level and distribution of the population, a dummy for district capitals and the cities of Chisinau and Balti, the distance to the district capital and the next Romanian border crossing as well as pre-migration election results and night-light intensity. Standard errors clustered at the district level in parentheses. \*\*\* denotes statistical significance at the 1 percent level, \*\* at the 5 percent level, and \* at the 10 percent level.

Table 4: Migration patterns and individual political preferences over time, 2002-2009

	Vote for the Communist Party	Satisfied with life in general	Trust in government	Trust in local media	In favor of government intervention in the economy	Would vote in elections
	(1)	(2)	(3)	(4)	(5)	(6)
Prevalence of emigration to the West (%)	0.014** (0.006)	0.009* (0.005)	0.018*** (0.006)	0.011 (0.007)	0.006 (0.007)	0.006 (0.011)
Prevalence of emigration to the East (%)	-0.008 (0.005)	-0.002 (0.004)	-0.008 (0.005)	-0.002 (0.007)	-0.003 (0.004)	-0.017** (0.008)
Years since 2002	-0.004 (0.005)	0.014** (0.006)	-0.019*** (0.006)	0.022** (0.010)	0.002 (0.006)	0.021* (0.011)
Prevalence of emigration to the West * years	-0.003** (0.001)	-0.002*** (0.001)	-0.002** (0.001)	-0.003** (0.001)	-0.003* (0.001)	-0.000 (0.002)
Prevalence of emigration to the East * years	0.001 (0.001)	-0.001 (0.001)	0.001 (0.001)	-0.000 (0.002)	0.001 (0.001)	0.003* (0.001)
Individual characteristics	yes	yes	yes	yes	yes	yes
Community characteristics	yes	yes	yes	yes	yes	yes
District fixed effects	yes	yes	yes	yes	yes	yes
Number of observations	5,480	8,350	8,350	8,350	8,350	8,350
R <sup>2</sup>	0.14	0.03	0.09	0.05	0.03	0.03

The table reports OLS estimates for 8,350 individuals using data from several rounds of the Moldovan Political Barometer, a regular public opinion poll on socio-political issues. The sample is based on a pooled cross-section of all rounds conducted between April 2002 and March 2009. The dependent variables are whether an individual would have voted for the Communist Party should there be elections next Sunday (column 1), is satisfied with life in general (column 2), has trust in the government (column 3), has trust in local media (column 4), would like the state to play an increased role to improve socio-economic conditions (column 5), and would vote should there be elections next Sunday (column 6). The set of individual characteristics includes age, sex, education level and ethnicity. The set of community characteristics includes variables capturing population size, age structure, ethnic composition, skill level and distribution of the population, a dummy for district capitals and the cities of Chisinau and Balti, the distance to the district capital and the next Romanian border crossing as well as pre-migration election results and night-light intensity. Marginal effects from a probit model are very similar and available upon request. Standard errors clustered at the community level in parentheses. \*\*\* denotes statistical significance at the 1 percent level, \*\* at the 5 percent level, and \* at the 10 percent level.

Table 5: Individual-level migration patterns and Communist votes in 2010 (exit poll)

	Individual controls	Plus community fixed effects	Only individuals with family in the West	Only individuals with family in the East	Only non- migrants without family abroad
	(1)	(2)	(3)	(4)	(5)
Returned emigrant from the West	-0.087*** (0.014)	-0.068*** (0.014)			
Returned emigrant from the East	0.014 (0.016)	0.010 (0.014)			
With close family member in the West	-0.121*** (0.013)	-0.079*** (0.016)			
With close family member in the East	0.007 (0.015)	0.001 (0.013)			
With close family members in both the West and East	-0.077*** (0.012)	-0.072*** (0.013)			
Prevalence of emigration to the West (%)			-0.013 (0.010)	-0.031*** (0.006)	-0.021*** (0.007)
Prevalence of emigration to the East (%)			0.014 (0.009)	0.001 (0.004)	0.001 (0.005)
Individual characteristics	yes	yes	yes	yes	yes
Community fixed effects	-	yes	-	-	-
Number of observations	7,344	7,344	1,194	2,327	3,051
R <sup>2</sup>	0.18	0.22	0.17	0.21	0.21

The table reports OLS estimates for 7,344 individuals using data from an exit poll conducted during the parliamentary election of November of 2010. The dependent variable is a binary variable indicating whether an individual voted for the Communist Party. The set of individual characteristics includes age, sex, education level and ethnicity. The set of community characteristics includes variables capturing population size, age structure, ethnic composition, skill level and distribution of the population, a dummy for district capitals and the cities of Chisinau and Balti, the distance to the district capital and the next Romanian border crossing as well as pre-migration election results and night-light intensity. Marginal effects from a probit model are very similar and are available upon request. Standard errors clustered at the community level in parentheses. \*\*\* denotes statistical significance at the 1 percent level, \*\* at the 5 percent level, and \* at the 10 percent level.

## For Online Publication: Appendix

### **Appendix 1: Determinants of migration to the East and West**

This appendix analyzes the determinants of migration patterns at the community level using exactly the same set of explanatory variables as in our baseline specification in the main analysis (column 3 of Table 1). Table A3 below summarizes the results. The dependent variables are the overall prevalence of emigration (column 1), the share of westward migrants among all migrants (column 2), the prevalence of westward migration (column 3), and the prevalence of eastward migration (column 4).

A first important result is that pre-migration electoral preferences are not systematically associated with the size and direction of migrant flows. In particular, more liberal communities do not have more migrants in the West and more Communist communities do not have more migrants in the East. Conditional on observable community characteristics, there is no evidence for political self-selection of migrants at the community level.

Second, we find that adverse economic shocks pushed many Moldovans abroad, as is widely acknowledged in the literature. A reduction in night-time light intensity between 1992 and 1999 is associated with a significant increase in the prevalence of emigration. Importantly, however, adverse economic shocks cannot explain whether migrants left Moldova for the West or the East. Changes in night-time light intensity are not significantly related with the share of westward migrants among all migrants. This result is in line with the idea that, as a result of migrant networks, it should primarily be the destination choice of the first migrants that affects the destination choice of subsequent migrants.

Third, we can confirm that the drivers of the destination choice of the first migrants are crucial determinants of migration patterns in 2004. Russian and Gagauz minorities facilitate migration flows to the East, while a high share of ethnic Moldovans, the reference category, is positively associated with migration flows to the West. In addition, communities that are closer to a Moldovan-Romanian border crossing see significantly more migration to the West. The marginal effect is large: A 35 kilometer decrease in distance is associated with a one-percentage point increase of a community's population in the West (even after controlling for district-fixed effects that already pick up large parts of the border effects). Hence, small differences in pre-migration community characteristics have the potential to bring about large differences in migration patterns.

We also find that westward migration is more prevalent in larger communities and in communities with lower dependency ratios and a more educated population. These findings reflect that westward migration is more costly to finance than eastward migration and therefore more accessible to better-off individuals who live in such communities (Luecke et al., 2007).

## **Appendix 2: Disentangling political spillovers from the exit effect**

As discussed in Section 4.2, the baseline coefficients of westward and eastward migration capture both political spillovers on those who stay behind and the exit of migrants from the electorate. This appendix attempts to assess to which degree the exit effect may bias the interpretation of the migration coefficients as political spillovers. To do so, we run the following thought experiment: We make extreme assumptions on how migrants would have voted had they stayed in Moldova. We then send all migrants back to their home communities and add their hypothetical votes to the observed votes of their communities assuming that migrants would have had the same voter turnout as the non-migrant community population. Finally, we re-run our baseline specification (column 3 of Table 1) using the hypothetical vote share of the Communist Party as new dependent variable. By definition, the exit effect is now neutralized as migrants remain part of the electorate. We consider three different scenarios, which are summarized in Table A6 below.

In scenario 1, there is no political self-selection: All migrants are assumed to have voted like the average stayer in their home communities in July 2009 (column 1). The coefficients of westward and eastward migration are thus exactly the same as the coefficients of our baseline specification. However, the assumption of no political self-selection is not realistic. Given their demographic profile, migrants, particularly those to the West, are likely to have been less supportive of the Communist Party than the average voter before migration. The coefficients should therefore provide an underestimation of political spillovers from the West and an overestimation of political spillovers from the East.

In scenario 2, all migrants would have voted for opposition parties (column 2). Under this extreme assumption, the coefficient of westward migration provides an upper bound for political spillovers from the West because, in contrast to the baseline coefficient, it can no longer be driven upwards by the departure of opposition voters. Indeed, the coefficient of westward migration now drops to -1.11. This is almost double the magnitude of the baseline coefficient of -0.63, which still includes the exit effect (i.e., the fact that the Communist vote share increases due to the departure of opposition voters). These two coefficients define the plausible range of the magnitude of political

spillovers of westward migration. The emigration of one percent of a community's population to the West reduces the share of Communist votes *among those who stay behind* by a minimum of 0.63 (if migrants would have voted as the average stayer) and a maximum of 1.11 percentage points (if migrants would have been opposition voters). Our baseline coefficient of westward migration should therefore be interpreted as a conservative estimate of the political spillovers from abroad.

The opposite is true for the coefficient of eastward migration. Under the assumption that all migrants would have voted for opposition parties, the coefficient of eastward migration provides a lower bound for the political spillovers of eastward migration. Because it can no longer be driven upwards by the departure of opposition voters, the coefficient of eastward migration becomes negative and drops to -0.48, compared to the baseline coefficient of 0.39. Again, these two coefficients mark the range in which the magnitude of political spillovers of eastward migration is most likely to be located. As the range includes zero, we cannot conclude with certainty that there exist political spillovers from eastward migration. What we can conclude, however, is that political spillovers are likely to be much larger for westward than for eastward migration.

For completeness, we also show the unlikely scenario 3, in which all migrants would have voted for the Communist Party (column 3). Only when we make this unrealistic assumption do we no longer find that political spillovers of westward migration decrease the share of Communist votes.

Overall, this exercise provides strong evidence that political spillovers from emigration to the West indeed reduce support for the Communist Party in migrants' home communities and are no artifact of the compositional change of the electorate. Under reasonable assumptions on the direction and degree of political self-selection of migrants, the baseline coefficient of westward migration is a conservative estimate of the true size of political spillovers from the West. The baseline coefficient of eastward migration may, however, overestimate the size of political spillovers from the East.<sup>35</sup>

### **Appendix 3: Robustness checks**

We perform a number of checks to assess the robustness of the baseline coefficients of westward and eastward migration. Table A7 below summarizes the results. Column 1 adds 5th-order polynomials of all control variables including pre-migration election results. In case the linear approximation used in the baseline specification is not valid, important confounding variables may still cause biased estimates of the coefficients of interest. 5th-order polynomials of the control

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<sup>35</sup> These results are also useful to assess the potential consequences of return migration. If anything, the coefficients are likely to underestimate the electoral consequences of emigration in case of return migration.

variables would account for potential non-linearities in the relationship between community characteristics before migration took off and the evolution of migration and voting patterns thereafter. However, including the polynomials does not significantly change our coefficients of interest.

Column 2 includes the share of Communist votes in the parliamentary election of 2001, the year in which the Communist Party returned to power, as an additional regressor. Hence, we only analyze the change in electoral preferences for the period 2001-2009, during which the Communist Party had a firm grip on power in Moldova. Again, the coefficients of interest are not affected.

Column 3 controls for the demographic composition of migrant flows in terms of age, sex and education. In principle, the absence of certain types of individuals alone may already affect electoral preferences irrespective of the destination of migrants, e.g. through a change in gender roles in communities with a high female migration prevalence. To attribute the political effects of emigration to political spillovers from abroad, they should be unrelated to different pre-departure characteristics of migrants to the West and East. This is a valid concern for the case of Moldova because westward and eastward migrants differ somewhat in their demographic characteristics. Westward migrants are relatively more educated and female than eastward migrants (compare Table A10). However, our results are fully robust to the inclusion of the demographic characteristics of migrants. If anything, the coefficient of westward migration becomes larger as the demographic characteristics partially capture migrants' electoral preferences and thus weaken the impact of the exit effect on the coefficient.

Next, we define the West without Italy, the most important destination of Moldovan migrants in Western Europe, and not necessarily an ideal-type democracy. In line with our finding that our results are mostly driven by emigration to the most advanced democracies, the effect of westward migration becomes even more pronounced (column 4). We also consider an alternative definition of the West based on the rule-of-law index from the World Bank Governance Indicators 2004. The ranking of destination countries relative to Moldova, however, is largely the same and our results do not change (column 5).

Finally, we assess the robustness of our model to using different econometric specifications. So far, we have relied on a specification with lagged outcomes as regressors rather than using first differences. We have done so for two reasons. First, the structure of our dataset is not a classic panel. The dependent variable is measured at different points in time than the explanatory variables. Taking

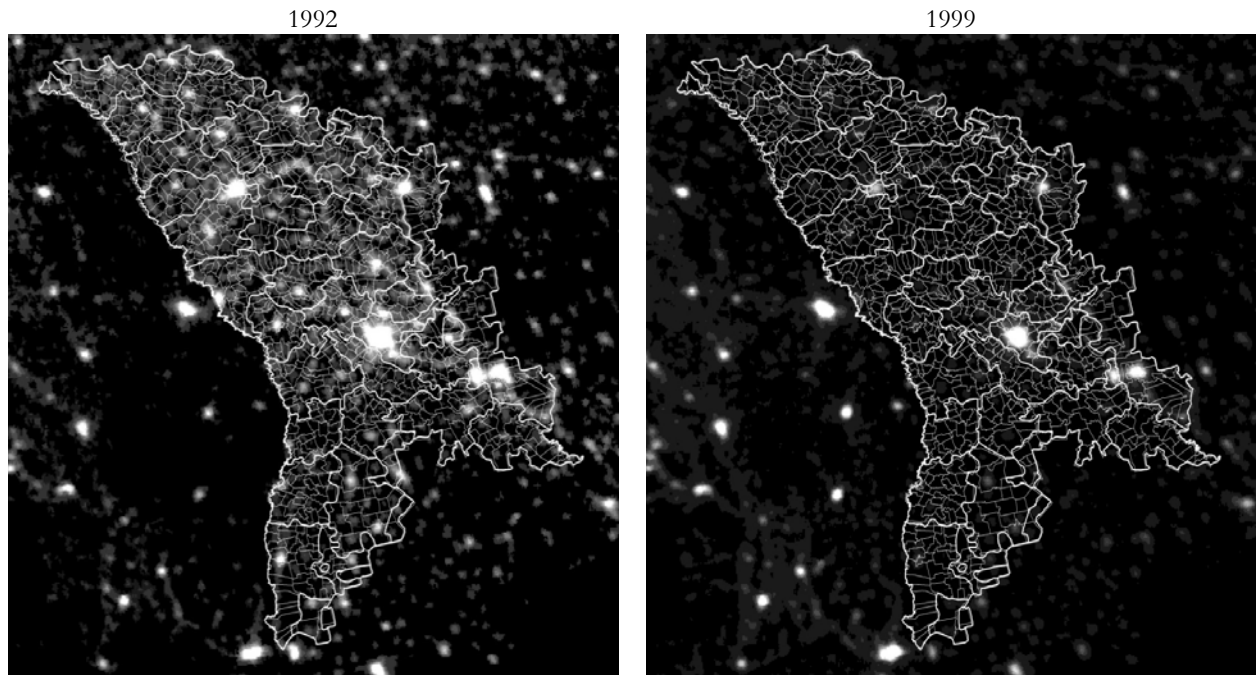
differences would therefore require taking differences over different periods. Additionally, some explanatory variables are not observed at different points in time, which would not allow us to take differences. Second, first differencing would imply taking the differences between Communist votes in 1998 and 2009. Controlling for different dimensions of pre-migration electoral preferences in form of the vote shares of other parties would not be possible. At the same time, however, first differencing avoids potential endogeneity problems that may arise from the use of lagged outcomes as regressors in parametric models. In column 6, we therefore present the results of a first-difference specification. The coefficient of westward migration remains unaffected, but the coefficient of eastward migration ceases to be significant at usual significance levels.

In another specification we use the overall migration prevalence and the share of westward migrants among all migrants instead of the prevalence of emigration to the West and East (column 7). The coefficient of overall migration prevalence is close to zero and insignificant while the coefficient of the share of westward migrants is negative and highly significant, which is in line with the previous results.

Finally, we follow Spilimbergo (2009) and use a continuous measure of the level of democracy abroad instead of splitting migrants' destinations into Western and Eastern countries (column 8). The level of democracy abroad is defined as the weighted average of democracy scores in destination countries, where a country's weight is given by the share of migrants in that country among all migrants from the same community. An interaction term between overall migration prevalence and the level of democracy abroad then measures the degree of exposure to democracy abroad. The interaction term is negative and highly significant. Hence, the magnitude of the marginal effect of emigration on Communist votes increases with the level of democracy abroad.

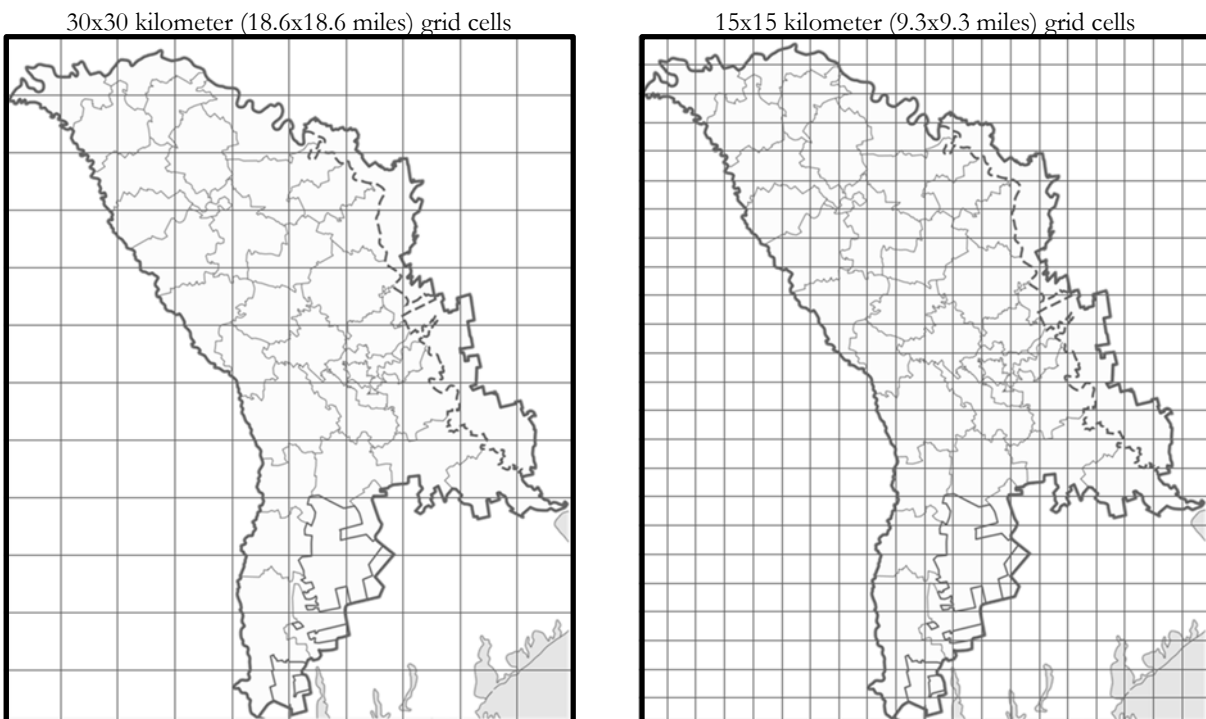
## Appendix figures

Figure A1: Night-time light intensity of Moldovan communities in 1992 and 1999



The images are based on data from the Defense Meteorological Satellite Program's Operational Linescan System. District borders are drawn in white.

Figure A2: Moldovan districts on a grid with 30x30 and 15x15 kilometer cells



## Appendix tables

Table A1: Number of Moldovan emigrants to the West and East in 2004

Emigrants to the West				Emigrants to the East			
Country	Democracy score	Number of emigrants	Share of emigrants	Country	Democracy score	Number of emigrants	Share of emigrants
Italy	10	53,010	52.83%	Russia	6	153,361	88.79%
Romania	9	10,515	10.48%	Ukraine	6	8,582	4.97%
Portugal	10	9,467	9.43%	Turkey	7	8,228	4.76%
Greece	10	5,584	5.56%	Belarus	-7	356	0.21%
Spain	10	3,868	3.85%	South Korea	8	174	0.10%
France	9	3,504	3.49%	Serbia	6	121	0.07%
Israel	10	2,634	2.62%	Kazakhstan	-6	119	0.07%
Germany	10	1,906	1.90%	Other countries	≤8	1,777	1.03%
Czech Republic	10	1,787	1.78%				
Great Britain	10	1,399	1.39%				
Ireland	10	1,235	1.23%				
United States	10	1,184	1.18%				
Cyprus	10	855	0.85%				
Bulgaria	9	698	0.70%				
Belgium	10	660	0.66%				
Austria	10	505	0.50%				
Canada	10	387	0.39%				
Poland	10	234	0.23%				
Switzerland	10	215	0.21%				
Netherlands	10	142	0.14%				
Other countries	≥9	556	0.55%				
Total West		100,345	100.00%	Total East		172,718	100.00%

The table shows the distribution of Moldovan emigrants across destination countries based on Moldova's population census of 2004. Destination countries are classified as West if they have a higher level of democracy (as measured by the 2004 Polity IV score) than Moldova. Countries are classified as East if they have a lower or equal level of democracy than Moldova. Moldova's 2004 Polity IV score is 8.

Table A2: Summary statistics of community-level variables

Variable	Obs.	Mean	Std. dev	Min	Max
Overall prevalence of emigration (%)	848	8.69	3.77	0	30.49
Prevalence of emigration to the West (%)	848	2.84	2.67	0	16.21
Prevalence of emigration to the East (%)	848	5.86	3.45	0	29.74
Share of westward migrants among all migrants (%)	847	32.67	23.22	0	94.62
Communist Party July 2009 (%)	848	46.75	19.77	4.70	97.97
Communist Party 2005 (%)	848	51.49	13.58	10.78	91.97
Communist Party 2001 (%)	848	49.91	17.81	4.67	97.03
Communist Party 1998 (%)	848	29.51	19.83	1.51	94.50
Democratic Party 1998 (%)	848	18.71	11.72	0.62	82.87
Democratic Convention 1998 (%)	848	18.67	14.62	0	74.45
Party of Democratic Forces 1998 (%)	848	8.54	7.22	0	75.18
Voter turnout 1998 (%)	848	79.62	9.67	41.19	100
Democratic Agrarian Party 1994 (%)	848	53.79	22.36	1.49	96.68
Socialist Party 1994 (%)	848	12.04	20.43	0	96.36
Peasants and Intellectuals Bloc 1994 (%)	848	9.45	8.25	0	56.48
Alliance Pop. Christian Dem. Front 1994 (%)	848	6.98	6.35	0	56.81
Community size 0-1500	848	0.28	0.45	0	1
Community size 1501-3000	848	0.42	0.49	0	1
Community size > 3000	848	0.30	0.46	0	1
District capital	848	0.04	0.19	0	1
Distance to district capital (km)	848	14.74	8.76	0	87.31
Distance to Romanian border crossing (km)	848	54.99	29.07	1.52	151.24
Chisinau/Balti	848	0.00	0.05	0	1
Population 0-14 years (%)	848	21.18	3.20	10.62	34.60
Population 15-34 years (%)	848	30.04	3.78	18.62	41.23
Population 65 years and older (%)	848	12.36	4.71	2.92	29.71
Population with higher education (%)	848	15.72	6.06	4.03	47.45
Population with primary or no education (%)	848	53.78	10.65	11.32	85.79
Ratio high-skilled/low-skilled	848	0.33	0.28	0.05	4.19
Ethnic Russians (%)	848	2.16	6.48	0	95.18
Ethnic Ukrainians (%)	848	8.41	19.39	0	93.21
Ethnic Gagauz (%)	848	3.02	14.61	0	97.88
Ethnic Bulgarians (%)	848	1.87	8.90	0	91.74
Ethnic fractionalization	848	0.16	0.18	0.01	0.79
Change night-time light 1992-1999	848	-4.82	3.27	-22.41	0.87

The table presents summary statistics for the main community-level variables used in our analysis. Data on migration patterns as well as demographic, ethnic and socio-economic composition of the population come from Moldova's population census of 2004 and are based on the total population including emigrants. All electoral variables are based on official results of parliamentary elections. The variable based on night-time light measures the difference between the average night-time light intensity on the territory of each community between 1992 and 1999. It is based on data from the Defense Meteorological Satellite Program's Operational Linescan System.

Table A3: Determinants of migration patterns at the community level

	Overall prevalence of emigration		Share of westward migrants among migrants		Prevalence of emigration to the West		Prevalence of emigration to the East	
	(1)		(2)		(3)		(4)	
	coef.	s.e.	coef.	s.e.	coef.	s.e.	coef.	s.e.
Communist Party 1998 (%)	0.00	(0.01)	-0.14	(0.08)	-0.01	(0.01)	0.01	(0.01)
Democratic Party 1998 (%)	0.01	(0.01)	0.05	(0.07)	0.01	(0.01)	-0.01	(0.01)
Democratic Convention 1998 (%)	0.03***	(0.01)	0.03	(0.09)	0.01*	(0.01)	0.02*	(0.01)
Party of Democratic Forces 1998 (%)	0.00	(0.02)	0.07	(0.10)	0.01	(0.01)	-0.01	(0.01)
Voter turnout 1998 (%)	-0.01	(0.02)	0.01	(0.09)	-0.00	(0.01)	-0.01	(0.01)
Democratic Agrarian Party 1994 (%)	-0.00	(0.01)	0.10*	(0.05)	0.01	(0.01)	-0.01	(0.01)
Socialist Party 1994 (%)	-0.00	(0.01)	0.11**	(0.05)	0.01	(0.01)	-0.01	(0.01)
Peasants and Intellectuals Bloc 1994 (%)	-0.02	(0.02)	0.25**	(0.12)	0.01	(0.01)	-0.03*	(0.02)
Alliance Pop. Christian Dem. Front 1994 (%)	-0.06**	(0.03)	0.13	(0.14)	-0.02	(0.01)	-0.05**	(0.02)
Change night-time light 1992-1999	-0.11*	(0.06)	-0.18	(0.26)	-0.05	(0.03)	-0.05	(0.05)
Community size 1501-3000	-0.19	(0.34)	3.16***	(1.24)	0.28	(0.19)	-0.48*	(0.26)
Community size > 3000	-0.59	(0.41)	6.53***	(1.34)	0.40*	(0.22)	-0.99***	(0.29)
District capital	-3.83***	(1.13)	2.28	(3.45)	-0.14	(0.62)	-3.69***	(0.97)
Distance to district capital (km)	-0.07***	(0.02)	0.09	(0.10)	-0.03**	(0.01)	-0.05***	(0.02)
Distance to Romanian border crossing (km)	-0.01***	(0.01)	-0.10	(0.10)	-0.02**	(0.01)	0.00***	(0.02)
Chisinau/Balti	-7.70*	(3.89)	8.26	(6.38)	-0.63	(1.37)	-7.07**	(3.40)
Population 0-14 years (%)	-0.27***	(0.06)	-0.65*	(0.37)	-0.15***	(0.04)	-0.12*	(0.07)
Population 15-34 years (%)	0.18**	(0.07)	-0.38	(0.37)	0.06	(0.05)	0.12**	(0.06)
Population 65 years and older (%)	-0.24***	(0.08)	-0.28	(0.33)	-0.03	(0.04)	-0.21***	(0.07)
Population with higher education (%)	0.07	(0.07)	0.59***	(0.20)	0.10***	(0.03)	-0.03	(0.06)
Population with primary or no education (%)	-0.01	(0.02)	-0.03	(0.09)	-0.00	(0.01)	-0.00	(0.02)
Ratio high-skilled/low-skilled	0.49	(1.77)	-3.63	(4.12)	-0.92	(0.88)	1.41	(1.43)
Ethnic Russians (%)	-0.03	(0.11)	-1.22***	(0.42)	-0.19***	(0.07)	0.16*	(0.09)
(Ethnic Russians) <sup>2</sup>	-0.00	(0.00)	0.01***	(0.00)	0.00***	(0.00)	-0.00**	(0.00)
Ethnic Ukrainians (%)	-0.06	(0.05)	-0.10	(0.24)	-0.07**	(0.04)	0.01	(0.05)
(Ethnic Ukrainians) <sup>2</sup>	0.00	(0.00)	0.00	(0.00)	0.00*	(0.00)	-0.00	(0.00)
Ethnic Gagauz (%)	-0.02	(0.05)	-0.72**	(0.32)	-0.11**	(0.04)	0.09	(0.06)
(Ethnic Gagauz) <sup>2</sup>	0.00**	(0.00)	0.00	(0.00)	0.00**	(0.00)	0.00	(0.00)
Ethnic Bulgarians (%)	-0.06	(0.05)	-0.01	(0.28)	-0.04	(0.03)	-0.01	(0.05)
(Ethnic Bulgarians) <sup>2</sup>	0.00	(0.00)	-0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Ethnic fractionalization	5.81***	(1.86)	-4.80	(12.36)	3.08**	(1.61)	2.73	(1.68)
Constant	13.46	(4.43)	50.22***	(18.20)	4.35	(2.34)	9.12	(3.88)
District fixed effects	yes		yes		yes		yes	
Number of observations	848		847		848		848	
R <sup>2</sup>	0.39		0.65		0.56		0.48	

The table reports OLS estimates of the determinants of migration patterns for 848 communities using the same set of explanatory variables as in our baseline specification in the main analysis (column 3 of Table 1). The prevalence of emigration is measured as the share of migrants as percent of the total population. The share of westward migrants among all migrants is measured in percent. Standard errors clustered at the district level in parentheses. \*\*\* denotes statistical significance at the 1 percent level, \*\* at the 5 percent level, and \* at the 10 percent level.

Table A4: Night-time light intensity as a proxy for economic conditions at the community level

	Per-capita tax revenues 2009	Unemployment rate 2009	Per-capita number of shops 2009
	(1)	(2)	(3)
Night-time light 2009	0.012*** (0.003)	-0.597*** (0.224)	1.06E-04*** (4.78E-05)
Community size 1501-3000	-0.025*** (0.009)	-2.769* (1.573)	-2.50E-04* (1.38E-04)
Community size > 3000	0.008 (0.013)	-1.723 (1.824)	0.001*** (0.000)
Chisinau/Balti	0.762*** (0.250)	1.210 (7.428)	-0.005* (0.003)
Constant	0.204*** (0.007)	21.186*** (1.300)	0.003*** (0.000)
Number of observations	848	848	848
R <sup>2</sup>	0.19	0.01	0.06

The table reports OLS estimates for 848 Moldovan communities. The dependent variables are the per-capita tax revenues (column 1), the unemployment rate (column 2), and the per-capita number of shops in 2009 (column 3). These variables are based on statistics published by the Moldovan Ministry of Economy and Trade. Standard errors clustered at the district level in parentheses. \*\*\* denotes statistical significance at the 1 percent level, \*\* at the 5 percent level, and \* at the 10 percent level.

Table A5: Full regression results of columns 1-3 of Table 1

	Basic controls		Plus pre-migration election results		Plus night-time light (full model)	
	(1)		(2)		(3)	
	coef.	s.e.	coef.	s.e.	coef.	s.e.
Prevalence of emigration to the West (%)	-0.70***	(0.20)	-0.63***	(0.18)	-0.63***	(0.18)
Prevalence of emigration to the East (%)	0.44**	(0.17)	0.39**	(0.16)	0.39**	(0.16)
Community size 1501-3000	-1.36	(1.01)	-1.93**	(0.99)	-1.94**	(0.99)
Community size > 3000	-2.66**	(1.16)	-2.28*	(1.20)	-2.27*	(1.20)
District capital	0.37	(2.34)	-1.18	(1.91)	-1.31	(2.03)
Distance to district capital (km)	0.00	(0.08)	-0.00	(0.07)	-0.00	(0.07)
Distance to Romanian border crossing (km)	0.03	(0.04)	0.04	(0.04)	0.04	(0.04)
Chisinau/Balti	8.15	(6.27)	5.61	(4.79)	5.45	(4.81)
Population 0-14 years (%)	-0.01	(0.20)	0.03	(0.18)	0.05	(0.19)
Population 15-34 years (%)	0.03	(0.22)	0.15	(0.20)	0.15	(0.20)
Population 65 years and older (%)	-0.06	(0.23)	0.18	(0.21)	0.19	(0.21)
Population with higher education (%)	-0.41***	(0.15)	-0.27*	(0.15)	-0.28*	(0.16)
Population with primary or no education (%)	0.14***	(0.05)	0.13***	(0.04)	0.13***	(0.04)
Ratio high-skilled/low-skilled	3.38	(3.73)	2.85	(3.00)	2.98	(3.06)
Ethnic Russians (%)	1.46***	(0.25)	0.97***	(0.19)	0.96***	(0.19)
(Ethnic Russians) <sup>2</sup>	-0.01***	(0.00)	-0.01***	(0.00)	-0.01***	(0.00)
Ethnic Ukrainians (%)	1.18***	(0.16)	0.66***	(0.14)	0.67***	(0.13)
(Ethnic Ukrainians) <sup>2</sup>	-0.01***	(0.00)	-0.00***	(0.00)	-0.00***	(0.00)
Ethnic Gagauz (%)	1.13***	(0.29)	0.71***	(0.23)	0.72***	(0.23)
(Ethnic Gagauz) <sup>2</sup>	-0.01**	(0.00)	-0.00*	(0.00)	-0.00*	(0.00)
Ethnic Bulgarians (%)	1.21***	(0.20)	0.65***	(0.13)	0.65***	(0.13)
(Ethnic Bulgarians) <sup>2</sup>	-0.01***	(0.00)	-0.00*	(0.00)	-0.00*	(0.00)
Ethnic fractionalization	-25.62***	(6.90)	-13.34**	(6.27)	-13.52**	(6.15)
Communist Party 1998 (%)			0.15***	(0.03)	0.15***	(0.03)
Democratic Party 1998 (%)			0.03	(0.04)	0.03	(0.04)
Democratic Convention 1998 (%)			-0.13***	(0.05)	-0.13***	(0.05)
Party of Democratic Forces 1998 (%)			-0.12	(0.07)	-0.12	(0.07)
Voter turnout 1998 (%)			0.00	(0.05)	0.00	(0.05)
Democratic Agrarian Party 1994 (%)			0.08**	(0.04)	0.08**	(0.04)
Socialist Party 1994 (%)			0.10**	(0.05)	0.10**	(0.05)
Peasants and Intellectuals Bloc 1994 (%)			-0.06	(0.06)	-0.06	(0.06)
Alliance Pop. Christian Dem. Front 1994 (%)			-0.13*	(0.07)	-0.13*	(0.08)
Change night-time light 1992-1999					-0.06	(0.15)
Constant	34.83**	(12.08)	22.89	(12.70)	21.89	(13.38)
District fixed effects	yes		yes		yes	
Number of observations	848		848		848	
R <sup>2</sup>	0.78		0.82		0.82	

The table reports the full OLS estimates of our baseline results summarized in Table 1. The dependent variable is the vote share of the Communist Party in the July 2009 parliamentary election at the community level (in percent). Standard errors clustered at the district level in parentheses. \*\*\* denotes statistical significance at the 1 percent level, \*\* at the 5 percent level, and \* at the 10 percent level.

Table A6: Migration patterns and Communist votes accounting for the exit of migrants from the electorate

<i>Assumed electoral preferences of emigrants to the West:</i>	Same as community	Non-Communist	Communist
<i>Assumed electoral preferences of emigrants to the East:</i>	Same as community	Non-Communist	Communist
	(1)	(2)	(3)
Prevalence of emigration to the West (%)	-0.63*** (0.18)	-1.11*** (0.15)	0.28* (0.17)
Prevalence of emigration to the East (%)	0.39** (0.16)	-0.48** (0.19)	0.99*** (0.17)
Full set of controls	yes	yes	yes
District fixed effects	yes	yes	yes
Number of observations	848	848	848
R <sup>2</sup>	0.82	0.81	0.82

The table reports OLS estimates for 848 Moldovan communities. The dependent variable is the hypothetical vote share of the Communist Party in the July 2009 parliamentary election at the community level (in percent), assuming that emigrants would not have left Moldova and remained part of their communities' electorate. We assume that migrants would have had the average voter turnout of their home communities. The full set of controls includes community-level variables capturing population size, age structure, ethnic composition, skill level and distribution of the population, a dummy for district capitals and the cities of Chisinau and Balti, the distance to the district capital and the next Romanian border crossing as well as pre-migration election results and night-light intensity. Standard errors clustered at the district level in parentheses. \*\*\* denotes statistical significance at the 1 percent level, \*\* at the 5 percent level, and \* at the 10 percent level.

Table A7: Robustness checks

	Fifth-order polynomials of all control variables	Control for share of Communist votes in 2001	Migrant characteristics	West: without Italy	West: better rule of law than Moldova	Estimation in first differences	Estimation with share of westward migrants among all migrants	Exposure to democracy abroad
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Prevalence of emigration to the West (%)	-0.54*** (0.21)	-0.76*** (0.15)	-0.86*** (0.15)	-1.22*** (0.21)	-0.63*** (0.18)	-0.87*** (0.26)		
Prevalence of emigration to the East (%)	0.45*** (0.16)	0.41*** (0.15)	0.43** (0.18)	0.40** (0.16)	0.39** (0.16)	0.20 (0.24)		
Overall prevalence of emigration (%)							0.03 (0.14)	4.74*** (0.85)
Share of westward migrants among all migrants (%)							-0.10*** (0.03)	
Democracy abroad								4.67 (7.94)
Overall prevalence of emigration * democracy abroad								-5.44*** (0.97)
Full set of controls	yes	yes	yes	yes	yes	-	yes	yes
District fixed effects	yes	yes	yes	yes	yes	-	yes	yes
Number of observations	848	847	847	848	848	848	847	848
R <sup>2</sup>	0.85	0.84	0.82	0.82	0.82	0.03	0.82	0.82

The table reports OLS estimates for 848 Moldovan communities. The dependent variable is the vote share of the Communist Party in the July 2009 parliamentary election at the community level (in percent). See Appendix 2 (robustness checks) for more details on the different columns. The full set of controls includes community-level variables capturing population size, age structure, ethnic composition, skill level and distribution of the population, a dummy for district capitals and the cities of Chisinau and Balti, the distance to the district capital and the next Romanian border crossing as well as pre-migration election results and night-light intensity. Standard errors clustered at the district level in parentheses. \*\*\* denotes statistical significance at the 1 percent level, \*\* at the 5 percent level, and \* at the 10 percent level.

Table A8: Migration patterns and Communist votes with fixed effects for geographical grid cells

	30x30km grid cells		15x15km grid cells	
	1st iteration	Average over 100 replications	1st iteration	Average over 100 replications
	(1)	(2)	(3)	(4)
Prevalence of emigration to the West (%)	-0.56*** (0.18)	-0.53	-0.61*** (0.22)	-0.50
Prevalence of emigration to the East (%)	0.42*** (0.14)	0.41	0.37*** (0.15)	0.29
Full set of controls	yes	yes	yes	yes
Grid cell fixed effects	yes	yes	yes	yes
Replications		100		100
Avg. number of grid cells		52		162
Number of observations	848		848	
R <sup>2</sup>	0.81		0.85	

The table reports OLS estimates for 848 Moldovan communities. The dependent variable is the vote share of the Communist Party in the July 2009 parliamentary election at the community level (in percent). The regressions include dummies for geographical grid cells of different sizes. Figure A2 in the appendix illustrate how the quadratic grid cells compare to the size of Moldovan districts. Columns 2 and 4 shift the grid in random directions and show average results after 100 iterations. The full set of controls includes community-level variables capturing population size, age structure, ethnic composition, skill level and distribution of the population, a dummy for district capitals and the cities of Chisinau and Balti, the distance to the district capital and the next Romanian border crossing as well as pre-migration election results and night-light intensity. Standard errors clustered at the district level in parentheses. \*\*\* denotes statistical significance at the 1 percent level, \*\* at the 5 percent level, and \* at the 10 percent level.

Table A9: Counterfactual results of the July 2009 parliamentary election

	Communist votes (%)		Communist seats in parliament	
	Level	Change w.r.t. observed result	Level	Change w.r.t. observed result
Observed result in July 2009 parliamentary elections	45.3		48	
1) Same level of emigration, but to different destinations				
a) Move migrants from West to East	48.3	+3.0	51	+3
b) Move migrants from East to West	40.4	-4.9	43	-5
2) No emigration to the West or/and East				
a) No emigration to the West, same level of emigration to the East	47.2	1.8	50	+2
b) No emigration to the East, same level of emigration to the West	43.5	-1.9	46	-2

The table reports counterfactual vote shares of the Communist Party and the resulting changes in the distribution of parliamentary seats for the July 2009 parliamentary election using different migration scenarios. With a total of 101 seats in parliament, one percent of the votes correspond roughly to one seat in parliament. An absolute majority of 51 seats is needed to form the government. The counterfactual analysis is based on the point estimates from the baseline specification (column 3 of Table 1). To arrive at nation-wide counterfactual election results, we weigh the predicted election results by the number of votes cast in each community. We assume that migrants would have had the average electoral preferences and voter turnout of their home communities. In the first type of scenario, we hold the level of migration flows constant, but change their direction. Scenario 1a) examines the case where all migrants to the West had gone to the East instead. Scenario 1b) examines the opposite case where all migrants to the East had gone to the West instead. In the second type of scenario, we change the level of migration flows. Scenario 2a) examines the case where all migrants to the West had never migrated and stayed in Moldova instead. Scenario 2b) examines the case where all migrants to the East had never migrated and stayed in Moldova instead.

Table A10: Migrant characteristics

	All migrants	Migrants to the East	Migrants to the West		
			All	Full democracies	Flawed democracies
<i>Education</i>					
Compulsary secondary education	36%	42%	26%	25%	26%
Additional secondary education	44%	44%	43%	42%	43%
Higher education	20%	14%	31%	32%	31%
<i>Age</i>					
15-24 years	30%	34%	21%	23%	20%
25-44 years	54%	51%	61%	62%	60%
45 years and older	16%	15%	18%	15%	20%
<i>Sex</i>					
Male	57%	64%	43%	59%	36%
Female	43%	36%	57%	41%	64%
<i>Remittances</i>					
US\$ 0	20%	21%	17%	22%	15%
US\$ 1-500	59%	60%	57%	50%	59%
US\$ 501-800	16%	16%	16%	19%	15%
US\$ 801-1000	4%	2%	8%	8%	8%
US\$ 1001-1500	1%	0%	2%	2%	2%
US\$ 1501 or more	0%	0%	0%	1%	1%

The table shows the distribution of skills, age, sex and remittances for Moldovan emigrants across destinations. Demographic data come from Moldova's population census of 2004. Remittances data come from the Labor Force Survey of 2008. Following Table A1, destination countries are classified as East if they have a lower or equal level of democracy than Moldova (as measured by the 2004 Polity IV score). Countries are defined as West if they have a higher level of democracy than Moldova. Within Western destinations, the table distinguishes between full and flawed democracies based on the classification provided by the Economist Intelligence Unit's index of democracy of 2006 (the index is not available for earlier years). Full Western democracies include Portugal, Greece, Spain, France, Germany, the Czech Republic, Great Britain, Ireland, the United States, Belgium, Austria, Canada, Switzerland and the Netherlands. Flawed Western democracies include Italy, Romania, Israel, Cyprus, Bulgaria and Poland. Moldova is also classified as flawed democracy.

Table A11: Voter turnout and the effect of migration patterns on Communist votes

	Dependent variable: Voter turnout July 2009	Baseline specification with Communist votes in July 2009 as dependent variable and control for voter turnout in July 2009
	(1)	(2)
Prevalence of emigration to the West (%)	-0.52*** (0.08)	-0.60*** (0.17)
Prevalence of emigration to the East (%)	-0.31*** (0.09)	0.40** (0.15)
Full set of controls	yes	yes
District fixed effects	yes	yes
Control for voter turnout 2009	-	yes
Controls for economic conditions 2009	-	-
Number of observations	848	848
R <sup>2</sup>	0.49	0.82

The table reports OLS estimates for 848 Moldovan communities. The dependent variables are voter turnout in the July 2009 parliamentary election (in percent) (column 1) and the vote share of the Communist Party in the July 2009 parliamentary election (in percent) (column 2). Compared to our baseline specification (column 3 of Table 1), in column 2 we also control for voter turnout in July 2009. The full set of controls includes community-level variables capturing population size, age structure, ethnic composition, skill level and distribution of the population, a dummy for district capitals and the cities of Chisinau and Balti, the distance to the district capital and the next Romanian border crossing as well as pre-migration election results and night-light intensity. Standard errors clustered at the district level in parentheses. \*\*\* denotes statistical significance at the 1 percent level, \*\* at the 5 percent level, and \* at the 10 percent level.