Micro- and Macro-Level Determinants of Emigration in a Mass Outmigration Setting

The Case of Lithuania

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Abstract

This paper aims to improve our understanding how individual-level attributes and contextual socio-economic conditions relate to outmigration decisions in a mass outmigration setting. We focus on the European country of Lithuania, which offers one of the rare cases where a country with relatively high standards in population statistics experiences massive outmigration. Between 2004 and 2012, Lithuania lost approximately 10% of its population due to international migration flows. In our study we apply multi-level models on census and vital registration data for the period 2011/2012. We find substantial spatial variation in emigration rates across Lithuanian municipalities. This variation is predominantly associated with variation in individual-level characteristics, while we obtained for our contextual socio-economic condition variables insignificant results. Our outcomes also suggest that Lithuania´s "geographies of opportunities" are particularly unfavorable for career-oriented females. In our conclusion we discuss policy options to strengthen Lithuania´s potential as an in- and return migration destination.

Introduction

Outmigration can offer both threats and potentials for the development of a country and the livelihoods of its inhabitants (Adams 2003, Thaut 2009). On the one hand, countries might suffer from brain drain effects and losses of young active persons. This might create a substantial demographic burden and affect future prospects for sustainable socio-economic development, which could further spur outmigration. On the other hand, outmigration can offer individuals the opportunity to move to countries which provide better contextual conditions. The latter might enable the migrants to make better use of their own potentials and to further accumulate human, social and financial capital. Countries experiencing massive outmigration can potentially also benefit from such strategies through remittances, foreign investments by former emigrants or through return migration of migrants who were able to establish themselves successfully abroad (see e.g. Stark et al. 1997). Upon their return they might bring with them additional human as well as financial capital and important contacts to other countries which can help them to contribute to the development of their home country. However, during a phase of massive outmigration it is likely that the negative effects prevail, while it is difficult to assess potential future benefits. Thus, governments and societies experiencing these events usually consider them as a serious development challenge.

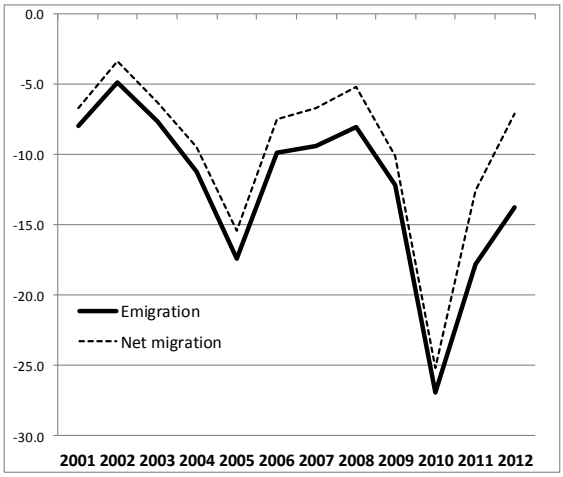
It is usually very difficult to analyze big outmigration waves as almost all countries experiencing such events face at the same time problems in collecting reliable population statistics. We focus here on one of the rare exceptions where a country maintaining relatively high collection standards registered a massive outmigration wave. For our study we use a unique dataset covering the entire population of Lithuania, for which all 2011 census records and all emigration records for the period between the 2011 census date and December 31, 2012 have been linked. It provides us with the opportunity to improve our understanding how individual and contextual-level factors shape outmigration decisions in a massive outmigration setting.

Background

Eastern European countries including Lithuania have a long record of being source regions of large emigration streams dating back to at least the 19th century (Senn and Eidintas 1987; Thaut 2009). Large outmigration waves also occurred in the periods around WWI and WWII. During the Soviet period (1945-1990), on the other hand, the freedom of movement was rather restricted. This, however, changed with the restoration of Lithuania's independence in 1990 that brought at the same time substantial improvements in the freedom of movement also in terms of international migration. The abolishment of legal emigration restrictions and substantial economic difficulties as a result of the socio-economic transformations of the 1990s resulted in a significant increase of the emigration rates. While Lithuania witnessed in

the first half of the 2000s an economic recovery and strong growth rates, the accession to the EU in 2004 and the subsequent lifting of immigration, residence, and work restrictions in a number of western European countries brought another impetus to further increase Lithuania's outmigration rates. The country registered in 2004 and 2005 a massive outmigration wave (see Figure 1). An even higher wave was registered during the world economic crisis that started in 2008. Lithuania was among the countries that were most severely hit by the crisis with the GDP per capita falling by about 15% between 2008 and 2009. This resulted in very high emigration rates in 2009 and 2010. In our study period from 2011 to 2012 emigration rates were still high, but started to decline again. There are also indications for a rising number or return migrations (Statistics Lithuania 2014). Nevertheless, despite a rapid economic recovery in the most recent years, Lithuania remains within the EU among the countries with the highest negative net-migration rates (Eurostat 2014, see also Fig. 1). Since the accession to the EU, Lithuania has lost almost 10% of its population due to outmigration with the vast majority heading to western European countries such as United Kingdom, Ireland and Norway (Eurostat, 2014).

Figure 1. Trends in crude emigration and net-migration rates (per 1000), 2001-2012*



Source: Statistics Lithuania, 2014.

Despite the significant emigration trends, knowledge about the individual- and macro-(contextual) level determinants of these most recent mass emigration waves is rather fragmentary. In particular, there is a lack of studies using population-level representative data. This is at least partly related to the fact that before 2009 Lithuania's official migration statistics had substantial deficiencies. However, in 2009 a statutory duty for all permanent residents of Lithuania to pay compulsory health insurance was introduced, which together with the introduction of additional fines for emigrants not reporting their departure contributed to an improvement in the registration of international migration events. This opens improved opportunities to study emigration trends using official register-based data. Prior research on emigration and its determinants in Lithuania was mostly based on smaller scale survey data and primarily focused on demographic and economic consequences of

emigration as well as on intentions and potentials of emigration (e.g. Stankūnas et al. 2003; Thaut 2009; Hazans and Philips 2011). It has shown that high emigration risks are recorded at young adult age, for individuals with higher than secondary education (Thaut 2009: 199), and unemployed persons (Hazans and Philips 2011: 9).

This paper has three main aims. One is to obtain new evidence how individual-level characteristics and macro-level spatial social contexts are related to outmigration decisions within a massive outmigration setting. Here we are also interested to what degree events cluster in regions, which might be related to spatially dependent social interaction in migration networks. The second aim is to close exiting gaps in research on determinants of outmigration from former communist countries of Eastern Europe, which is mostly based on migration surveys. To our knowledge, this study is the first one to cover the whole population of an Eastern European country in an analysis of individual and contextual determinants of outmigration decisions. The third aim is to derive policy advice on how Lithuania might improve its "geographies of opportunities" in order to grain attractiveness both for its inhabitants as well as for return migrants and foreign in-migration.

While the register data we analyze is rich in coverage and available attributes, it does not provide information on the motivations that guide migration choices. According to surveys, economic motives are the prime driver of the outmigration process (Cook et al. 2010; Sipaviciene 2010; Sipaviciene and Stankuniene 2011). This does not only comprise the expectation to improve the access to income, better working conditions or suitable jobs (Kahanec and Zimmermann 2010), but also motives to make investments in human capital by learning foreign languages or gain professional skills that allow to improve the employability in higher rank sectors (Krisjane et al. 2013). Also "non-economic" factors such as a better self-realization seem to have grown in relevance especially among younger people in recent years (Sipaviciene and Stankuniene 2013).

A rather new development over the last few years is that Lithuania is registering an increasing number of immigration events (see Fig. 1), which seem to be in most cases return migrants (Sipaviciene and Stankuniene 2011). However, this increase in in-migration events can so far not outweigh the outmigration events, so that the net-migration rates are still far below 0. This observed changes might in part stem from recent improvements in the registration of international migration events, which we lined out above. That more outmigration events are registered is likely to also positively affect the number of registered return migration events which previously went unrecorded. On the other hand, the increased number of immigration events might in part also reflect real changes in migration patterns as a result of the recent considerable economic improvements after the severe economic crisis of 2008-2009.

The seasonal pattern (Fig. 1) shows that immigration events are peaking in the early summer and outmigration events in the early autumn. This might be an indication that circular

migration strategies are of relevance, where people are likely to return in early summer and leave again in autumn. Research on return migrants in Eastern Europe shows that they are better educated, but more likely to be unemployed if they return. The latter might be related to the fact that regions with higher unemployment are also registering higher outmigration. This makes this regions potentially also prime destinations of return migrants (Martin and Radu 2012).

Data and Methods

The data for our analysis comprises census and population register data provided by Statistics Lithuania. It enables us to combine information from the census of 2011 with mortality and emigration follow-up data. While the previously published official migration statistics for the 2000s were incomplete due to a relatively large share of undeclared emigrants, Lithuania took in the late 2000s major steps to improve this situation. This includes next to the administrative measures lined out above that notably improved the reporting of international migration events also the conduction of annual migration surveys to cross-check the collected statistics. The data were provided by Statistics Lithuania in an aggregated multidimensional frequency table format that combines emigration events and population exposures and are split by detailed combinations of each category of available socio-demographic and socio-economic variables.

As we deal with count data, we use multivariate multi-level Poisson regression models (a version of the Generalized Linear Latent and Mixed Model for count data) to explore the relationship between individual and contextual-level variables and the occurrence of migration events (Rabe-Hesketh and Skrondal 2005). The estimation results are presented as incidence rate ratios which are taking the number of events in relation to the person-years of exposure into account. We restrict our analyses to the population aged 20-64. As emigration event we define any registered outmigration event in the period of observation between the last census on the 1st of March 2011 until the 31st of December 2012, where no return migration event was registered until the end of our study period. Thus, we are focusing on long-term emigrations rather than studying short-term or seasonal migrations which are also widely spread in Lithuania. The final dataset includes information about approximately 20,000 emigration events and 3.4 million person-years of exposure. We calculate the models separately for men and women to look at gender differences. Individual-level covariates include demographic characteristics such as age and marital status. From the census of 2011 we are able to obtain information on educational attainment and employment status at the time of the census, which give us indications on the socio-economic status. The ethnicity variable allows us to distinguish Lithuanians from the two biggest minorities (Polish and Russian) and other ethnic groups. We also have information on prior experience of living

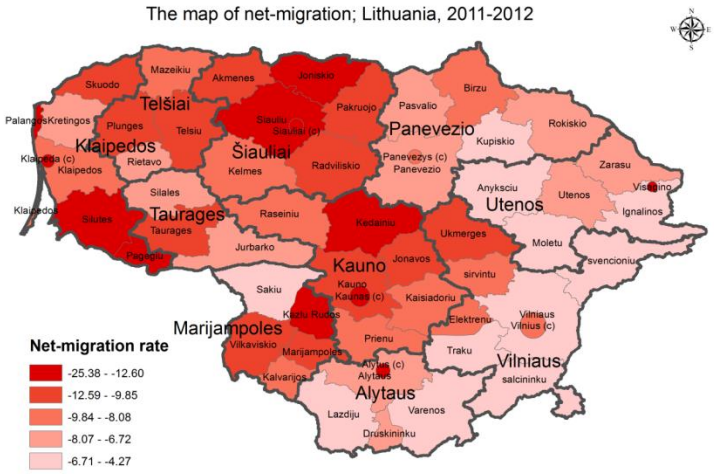
abroad for at least one year as well as whether a person was born abroad or within a rural or urban area of Lithuania. In addition, we have data on whether the place of residence at the census of 2011 was urban or rural.

Our contextual-level variables control for variation in socio-economic conditions at the level of the 58 Lithuanian municipalities. We account for changes in the unemployment rate during the period 2010-2011 in order to investigate the association between recent changes in employment options in a municipality and international outmigration events. In order to control for more long-standing variation in socio-economic conditions also as a result of the recent economic crisis, we add a variable on the share of persons per 1,000 inhabitants who receive social benefits. As third contextual measure we include the participation in local elections, which we interpret as an indicator of connectedness with the region of residence.

Descriptive Findings and Model Results

In presenting our results we first turn to a map showing international net-migration statistics at the municipality level for the period between the census of 2011 and the end of 2012. The highest negative net-migration rates are recorded in western Lithuania and in the region around the second biggest city of Kaunas in the central part of the country. One may notice a surprisingly notable regional divide in net-migration as the eastern and southern parts of the country exhibit less pronounced negative net-migration figures (Figure 2).

Figure 2. Crude international net-migration rates (per 1000 pop.) by municipality. Lithuania, 2011-2012.



Source: Statistics Lithuania, 2014, own calculations

The regions with low emigration rates in the southeast also comprise the Lithuanian capital of Vilnius, though the capital itself registers in comparison to the surrounding areas an elevated outmigration rate. However, it is likely that at least part of this phenomenon may be explained by spatial variation in population composition by age and other socio-demographic variables

across municipalities. This we will explore in the following section that presents the results of our multi-level models.

Table 1 shows how the variance of the random intercepts at the municipality level is affected by the inclusion of the individual-level and contextual-level controls. The variance in the null model seems for males to be substantially higher than for females. However, a similarity of the models for males and females is that the introduction of the individual-level controls contributes to a much more substantial reduction in the variance of the random intercept, compared to the introduction of the contextual control variables. And even after introducing all of the available individual- and contextual-covariates more than 50% of the initial variance among the random intercepts still remains.

Table 1. Effects of adjustments for individual and contextual characteristics on variance of random intercept

	Males		Females	
	Variance	Change from Model 0 (per cent)	Variance	Change from Model 0 (per cent)
Model 0 (random intercepts only)	0.092	-	0.069	-
Model 1 (adjusted for individual-level variables)	0.058	-37.0	0.043	-37.7
Model 2 (adjusted for individual- and contextual-level variables)	0.051	-44.6	0.035	-49.3

Source: Statistics Lithuania, 2014, own calculations

Our estimated incidence rate ratios are presented in Appendix 1. They exhibit clear gender differences both with regard to how the level of education and the marital status relate to the decision to outmigrate. Among females there is a positive educational gradient in the likeliness to emigrate, while among men higher educated are the least likely to leave Lithuania. With regard to the marital status married person have among both sexes the lowest likeliness to outmigrate. However, for females the migration rate ratios of never-married, divorced and widowed persons are much higher compared to males. This suggests that family reunion is not a prime motivation for outmigration events among females. In a pooled model for both sexes (not shown here), we could determine that females have a slightly higher (1.12 times) risk to emigrate than males. After controlling for all socio-demographic and socio-economic variables this female excess even grew to 1.19 times.

An indication for economic motives is that people who stated as employment status "unemployed" in the census were more likely to outmigrate in the following 22 months. Among the ethnicities Russians have the highest likeliness to outmigrate, while members of the Polish minority show much lower tendencies to emigrate compared to ethnic Lithuanians. We still need to explore to what degree this is related to the situation, that the Polish minority is predominantly concentrated in the southeastern part of the country, which exhibits in

general lower outmigration rates. Individuals, who have already lived abroad for one year, were also more likely to outmigrate again.

Discussion and Conclusion

This study analysed a unique census-linked dataset covering the entire population of Lithuania and all emigration events registered between the 2011 census and the end of 2012. We applied multi-level models to obtain statistically robust estimates of individual- and contextual-level determinants of emigration events in a country that is characterised by massive outmigration. We found that even in this rather small country there is substantial regional variation in outmigration risks. In particular, we found a striking East/South vs. West divide in geographical net-migration pattern. The low outmigration rates in the region around the Lithuanian capital of Vilnius in the southeast might be related to the capital region particularly benefitting from economic developments compared to other regions.

The variation across municipalities could to a substantial degree be associated with individual-level covariates, while our variables controlling for spatial variation in contextual conditions returned insignificant outcomes. One reason for the latter result might be that the recent economic crises was very severe and caused nation-wide substantial unemployment increases. Under these circumstances, the comparatively small variation in socioeconomic disparities across Lithuanian municipalities might not play a substantial role in determining outmigration events. However, despite being able to control for a large number of individual-level and contextual-level attributes, a substantial part of the variance in outmigration risks across Lithuanian municipalities always remains unexplained. This could be related to omitted variables which might include variation across municipalities in the degree to which social interaction in migration networks has an impact on migration decisions. Survey-based evidence suggests that in the outmigration from Lithuania the influence of formal and non-formal migration networks is substantial with more than 80% of the emigrants finding jobs abroad via relatives and friends (Sipaviciene and Stankuniene 2013).

Our analysis of effects of individual-level variables revealed that Lithuanian females have a higher risk to emigrate than males. Furthermore, highly educated females have a statistically significantly higher probability to emigrate than females with secondary or lower education. At the same time, there was no clear educational gradient in migration risks among males. If we understand international migration as an instrumental behavior to improve access to the "geographies of opportunities", the registered migration pattern can be interpreted as an indication for existing development challenges in Lithuania. That especially high educated and non-married females are likely to outmigrate suggests that the existing labor market opportunities are particularly unfavorable for females. This is also supported by data from the

European Social Survey and the EU SILC survey, which shows that despite a rather high female employment rate a high share of respondents in Lithuania agree that males should be given preference in the labor market if jobs are scarce (Lappegård et al. 2014). The gender differences in how educational attainment is associated with migration events also highlights the existing heterogeneity among migrants. It comprises both low-skilled workers suffering from unemployment as well as highly skilled individuals.

Another interesting finding are the high emigration risks among Russians. These cannot be explained by differences in compositional characteristics in terms of educational attainment, the place of residence or the economic activity status as we control for these in our models. Possibly, economic uncertainties in Lithuania and a higher economic stability in Russia and other potential destination countries during the economic crisis may explain the higher emigration rates in this ethnic group. As expected, unemployment, being non-married, and residing in urban areas were highly associated with the risk to emigrate. Our study also confirms the important role of previous migration experiences in determining future outmigration risks.

Until very recently, Lithuania lacked comprehensive migration policies or action plans to deal with the challenge of the long-standing pattern of high emigration rates. However, in 2014 a migration policy document has been adopted, which is the first comprehensive policy initiative aiming to enact measures and actions to tackle emigration from Lithuania. Central measures in this document include addressing key economic determinants such as youth unemployment and supporting return migration of emigrants. However, both prior research and our findings suggest that the implementation of such policies into practise will be a challenging task as emigration decisions are shaped by wide range of factors. It would potentially be a good strategy to focus return migration programs predominantly on regions that constitute outmigration hot spots as potential return migrants might still keep most of their social links to their last region of residence prior to their departure. As circular migration seems to be increasing, particularly this group of migrants is directly accessible in Lithuania at least for some period of the year. Our findings on individual-level characteristics also suggest that Lithuania should focus on improving employment conditions for high educated females who are particularly likely to outmigrate. Measures might include programs for women to establish own businesses or quota for women in higher-level positions in the public and private sector. Policy initiatives in the envisaged directions might allow Lithuania to gain more from the fact that many of its citizens are open to acquire human, financial and social capital abroad with whom they could potentially make important contributions to the future development of the country.

Literature

Adams, R.H. (2003): International migration, remittances, and the brain drain: A study of 24 labor-exporting countries. Washington DC: World Bank. Policy Research Working Paper 3069.

Cook, J., Dwyer, P., & Waite, L. (2011). 'Good relations' among neighbours and workmates? The everyday encounters of Accession 8 migrants and established communities in urban England. *Population, Space and Place* 17(6), 727-741.

Eurostat (2014). Statistical database. Luxembourg: Eurostat. http://epp.eurostat.ec.europa.eu/portal/eurostat/home.

Kahanec, M. & Zimmermann, K. F. (2010). *Migration in an enlarged EU: A challenging solution?* Berlin: Springer, pp. 63-94

Krisjane, Z., Berzins, M., & Apsite, E. (2013). Post-accession migration from the Baltic states, in: Glorius, B., Grabowska-Lusinska, I., & Kuvik, A. (eds.) *Mobility in Transition: Migration Patterns after EU Enlargement*. Amsterdam: Amsterdam University Press, pp. 85-112.

Lappegård, T., Klüsener, S., & Vignoli, D. (2014). Social norms, economic conditions and spatial variation of childbearing within cohabitation across Europe. Rostock: MPIDR. MPIDR Working Paper 2014-002.

Martin, R. & Radu, D. (2012). Return migration: The experience of Eastern Europe. *International Migration* 50(6), 109-128.

Rabe-Hesketh, S. & Skrondal, A. (2005). *Multilevel and longitudinal modeling using STATA*. College Station: Stata Press.

Senn, A.E. & Eidintas A. (1987). Lithuanian immigrants in America and the Lithuanian national movement before 1914. *Journal of American Ethnic History* 6(2), 5-19.

Sipavičienė, A. & Stankūnienė, V. (2013). The social and economic impact of emigration on Lithuania, in: OECD (ed.) *Coping with Emigration in Baltic and East European Countries*. Paris: OECD, pp. 45-64.

Sipavičienė, A. & Stankūnienė V. (2011). Lietuvos gyventojų (e)migracijos dvidešimtmetis: tarp laisvės rinktis ir išgyvenimo strategijos [Two decades of emigration from Lithuania: between free choice and survival strategy]. *Filosofija Sociologija*. 4, 323-333.

Sipavičienė A. (2010). Recent changes in migration movements and policies (country notes). Lithuania. In: *International Migration Outlook. SOPEMI*. OECD: Paris, pp. 220-221.

Stankūnas, M., Lovkyte, L., & Padaiga, Z. (2003). The survey of Lithuanian physicians and medical residents regarding possible migration to the European Union. *Medicina (Kaunas, Lithuania)* 40(1), 68-74.

Stark, O., Helmenstein, C., & Prskawetz A. (1997). A brain gain with a brain drain. *Economic Letters* 55(2), 227-234.

Thaut, L. (2009). EU integration & emigration consequences: The case of Lithuania. *International Migration* 47(1), 191-233.

Appendix 1. Emigration incidence rate ratios (IRR) by individual and municipality-level demographic and socio-economic variables; Lithuanian males and females aged 20-64, 2011-2012

	Males				Females			
			95 % CI limits				95 % CI limits	
	IRR	P-value	lower	upper	IRR	P-value	lower	upper
(intercept)	0.011	0.000	0.009	0.014	0.010	0.000	0.008	0.012
Individual-level variables								
Age								
20-24	1.000	-	-	-	1.000	-	-	-
25-29	0.887	0.000	0.837	0.940	0.753	0.000	0.710	0.797
30-34	0.493	0.000	0.457	0.531	0.430	0.000	0.398	0.464
35-39	0.324	0.000	0.296	0.353	0.318	0.000	0.292	0.346
40-44	0.224	0.000	0.203	0.247	0.245	0.000	0.224	0.269
45-49	0.149	0.000	0.133	0.166	0.177	0.000	0.160	0.196
50-54	0.087	0.000	0.076	0.100	0.133	0.000	0.119	0.148
55-59	0.047	0.000	0.038	0.058	0.055	0.000	0.046	0.066
60-64	0.011	0.000	0.007	0.017	0.009	0.000	0.006	0.013
Marital status								
Married	1.000	-	-	-	1.000	-	-	-
Never married	1.188	0.000	1.122	1.258	2.090	0.000	1.979	2.208
Divorced	1.399	0.000	1.282	1.526	2.359	0.000	2.205	2.523
Widowed	1.063	0.777	0.698	1.619	1.472	0.000	1.246	1.743
Education								
Higher	1.000	-	-	-	1.000	-		
Secondary	1.093	0.001	1.036	1.154	0.946	0.020	0.903	0.991
Lower than secondary	1.016	0.642	0.949	1.088	0.848	0.000	0.789	0.912
Economic activity								
Employed	1.000	-	-	-	1.000	-	-	-
Unemployed	1.483	0.000	1.410	1.559	1.563	0.000	1.479	1.650
Inactive, disabled	0.184	0.000	0.136	0.247	0.170	0.000	0.123	0.236
Other inactive	0.972	0.373	0.912	1.035	1.063	0.022	1.009	1.119
Unknown	0.395	0.000	0.287	0.543	2.202	0.079	0.912	5.312
Nationality								
Lithuanian	1.000	-	-	-	1.000	-	-	-
Russian	1.298	0.000	1.194	1.410	1.213	0.000	1.120	1.315
Polish	0.880	0.019	0.791	0.979	0.877	0.009	0.795	0.967
Other	0.930	0.175	0.837	1.033	0.910	0.046	0.829	0.998
Experience of living abroad								
No experience	1.000	-	-	-	1.000	-	-	-
Life abroad for at least 1 year	1.697	0.000	1.589	1.812	1.808	0.000	1.684	1.942
Unknown	1.626	0.000	1.309	2.019	1.578	0.000	1.256	1.982
Place of residence								
Urban	1.000	-	-	-	1.000	-	-	-
Rural	0.623	0.000	0.586	0.663	0.705	0.000	0.664	0.749
Residence one year before the census								
Same	1.000	-	-	-	1.000	-		
Other urban	1.042	0.419	0.942	1.153	1.063	0.149	0.978	1.156
Other rural	0.831	0.187	0.631	1.094	0.539	0.000	0.395	0.735
Foreign country	2.904	0.000	2.639	3.196	3.016	0.000	2.737	3.325
Unknown	0.994	0.954	0.797	1.238	1.307	0.022	1.040	1.642
Municipality-level variables								
Change in unemployment rate in 2010-2011, in percent								
Low (2.4-3.8]	1.000	-	-	-	1.000	-	-	-
Medium (3.8-4.6]	0.935	0.441	0.788	1.109	0.997	0.973	0.860	1.156
High (4.6-14.3]	1.138	0.202	0.933	1.387	1.112	0.228	0.936	1.321
Social benefits, recipients per 1,000 inhabitants								
Low (13.2-61.8]	1.000	-	-	-	1.000	-	-	-
Medium (61.8-83.3]	1.149	0.135	0.958	1.378	1.063	0.422	0.909	1.243
High (83.3-132.0]	1.147	0.181	0.938	1.402	1.034	0.708	0.869	1.230
Election turnout, in percent								
Low (33.5-41.2]	1.000	-	-	-	1.000	-	-	-
Medium (41.2-47.3]	1.006	0.946	0.845	1.198	1.057	0.466	0.911	1.226
High (47.3-66.6]	0.907	0.265	0.765	1.076	0.886	0.107	0.764	1.027

Source: Statistics Lithuania, 2014, own calculations