THE ENGLISH AND RUSSIAN LANGUAGE PROFICIENCY PREMIUM IN THE POST-MAIDAN UKRAINE — AN ANALYSIS OF WEB SURVEY DATA

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BRIAN FABO

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Brian Fabo
National Bank of Slovakia (NBS)

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ABSTRACT

The English and Russian Language Proficiency Premium in the post-Maidan Ukraine – an Analysis of Web Survey Data

The Maidan uprising and the successive fall of president Yanukovych has been a subject of substantial scholarly attention. Nonetheless, the focus has been largely on political aspects of these events, which the economic implications have not been tackled nearly to the same extent. This study aims to contribute to filling this gap by analyzing the post-Maidan changes to the Russian language earnings premium in the country. Past research has identified sizable advantage of earnings enjoyed by Russian language speakers over Ukrainian language speakers. Meanwhile, the literature on Maidan suggests, that the upheaval has strengthened Ukrainian speaking, pro-Western forces in the society over the interests rooted in the Russian speaking community and thus is could be expected that this premium could have disappeared. Our analysis, nonetheless, shows that it remains present. Additionally, we test the effect of proficiency in English, the main commerce language of the West, to see whether the proWestern orientation of the new Ukrainian government generated effect a similar effect to the Russian language premium. However, once we control for characteristics of the respondent, we found no strong evidence of such an effect.

Keywords: Maidan, earnings differences, ethnic premium, foreign language skills, Ukraine

JEL Classification: J15, J70, J82

 Corresponding Author:
Brian Fabo
Macroeconomic research department
National Bank of Slovakia
Brian.fabo@nbs.sk

Introduction

This paper explores the earning premium associated with Russian and English language proficiency in the contemporary Ukraine. Specifically, it explores two dimensions. Firstly, it looks at the development of the "linguistic premium" historically enjoyed by the Russian speakers in the country. The existence of the Russian speakers privilege had been empirically confirmed in the 2000s (Constant et al., 2012). Nonetheless the 2014 Maidan revolt against the rule of the autocratic president Yanukovych has potentially disrupted the power equilibrium in the country. Specifically, the power of the Russian-speaking power block is likely to have decreased and the pro-EU, Western-looking, forces in the Ukrainian society have grown in importance (Ryabchuk, 2014). Given this keenness of the new Ukrainian government towards strengthening ties with the West, this paper also looks at the to what extent English, the lingua franca or Western business (Fabo et al., 2017), has gained prominence in Ukraine.

The analysis presented in this paper is based on the self-reported language proficiency and earnings of the participants in the global WageIndicator survey. While this is not a representative sample of the Ukrainian population, previous studies have found the data of sufficient quality to identify relationships between key labor market variables (de Pedraza et al., 2010; Guzi and de Pedraza, 2015; Steinmetz et al., 2014; Tijdens and Steinmetz, 2016). This data source offers an unique opportunity to get an insight into a recent developments in a country, where regular data collection for the purpose of social science is not a norm.

The analysis follows up on the Constant et al. (2012). In line with the methodology used in that paper, the extended Mincer earnings function is utilized to model the language proficiency premium. In addition to the analysis present in the original study, the role of the English language proficiency is evaluated, along with the level of knowledge of the Russian language. Proficiency in the Ukrainian language is, unfortunately, not present in the dataset and thus we are unable to analyze it. To our knowledge, the analysis presented in this paper is the first to tackle the earning premium associated with English in Ukraine and also the first to look at the post-Maidan evolution of the Russian language premium. One possible reason behind the lack of literature is that the original Constant et al. study is based on an unique Ukrainian Longitudinal Monitoring Survey (ULMS), which was only collected in the middle 2000s by the German IZA institute (Lehmann et al., 2012). In consequence, there does not appear to be any way to study the Russian language premium post-Maidan without using the web survey.

The Russian language premium is largely confirmed as being still present, while there is no evidence of any premium associated with speaking English, other than stemming from the observable characteristics. Overall thus, it appears, that two years after Maidan, Ukraine has not made progress in abolishing the economic premium associated with the Russian language, while its engagement with the West has yet to produce significant premium for English proficiency, particularly outside of the capital.

The paper starts with discussion of the specific local context in Ukraine. This opening section is followed by a literature review detailing the current state of the art in the research into economic implications of foreign language skills. Next is the section discussing data and methodology followed by the presentation of results. The final section concludes.

Historical, demographic, political and economic background

This sections aims to motivate the research and frame the analysis within the wider developments in Ukraine.

Ukraine has traditionally been a bridge, where various cultures and languages interacted. The origins of Ukrainian statehood go back to 9th century AD, when the first centralized state emerged on the territory of the contemporary Ukraine under the name Kievan Rus or Kievan Ruthenia. After the fall of the Kievan Rus in the 12th century, Ukraine had been divided between various dominions including Russia/Soviet Union, Poland, the Cossack state, Hungary, the Ottoman Empire and others (Himka, 2015). Only in 1991, Ukraine has reemerged as a sovereign state from the ashes of the Soviet Union. The long period of disunity has resulted in creation of two distinct ethnic groups that now form the vast majority of Ukraine's denizens: the Russians and the Ukrainians[1] (see Figure 1). The two peoples originate both from the original inhabitants of the Kievan Rus, but due to different historical circumstances have developed different cultural practices, oral histories and languages. Although borders between the two cultures are quite fluid (Westrate, 2016, p. 140), the differences between Russians and Ukrainians is of severe political significance (Wilson, 2002). This is particularly true when the state is in crisis. In both groundbreaking political events – the Orange Revolution of 2004 and the Maidan revolt of 2014, the two groups found themselves on two separate sides: The ethnic Russians supporting the pro-Russian Federation (RF) orientation, while the Ukrainians backed a turn towards the European Union (EU) (Constant et al., 2011; MacDuffee Metzger et al., 2016). Finally, the Russian identity of the majority of Crimean population was heavily utilized in the legitimization of Russia's annexation of the peninsula (Teper, 2016).
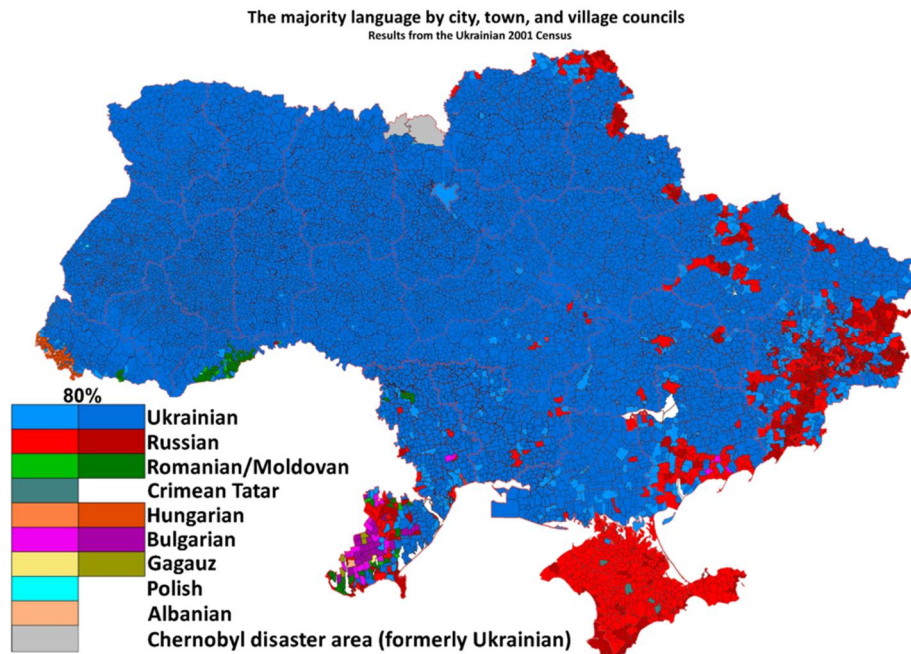

Figure 1: Linguistic structure of Ukraine according to the 2001 census. Source: Wikipedia

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[1] In addition to these two groups, Ukraine is home to diverse minority populations, including Tatars, Jews, Poles, Belarussians and Georgians.

The importance of languages in the Ukrainian society can hardly be overstated. The Russian language was the main language of the Soviet Union (Constant et al., 2011; Westrate, 2016) and as such it remains widely spoken in Ukraine. According to the 2001 national census[2], 17 % of the population self-identifies as Russians and overwhelmingly uses the language on the daily basis. Furthermore, the Russian language or a dialect called "surzhyk", which borrows words from both Russian and Ukrainian language, is widely spoken even among the self-identified Ukrainians, particularly those living in the Eastern part of the country(Besters-Dilger, 2007; Bilaniuk, 2004). Speaking Russian as opposed to Ukrainian appears to be driving the differentiation in economic outcomes (Constant et al., 2012) and to a large degree influences the political preferences (Constant et al., 2011; Giuliano, 2015; Katchanovski, 2014; Shulman, 2005).

The prominence of the Russian language is not rooted in its usefulness for communication. Russian and Ukrainian languages are quite similar and empirical studies found no economic benefit to bilingualism (Lindemann and Kogan, 2013), only to the primary use of the Russian language (Constant et al., 2012). Thus the driving factor appears to be discrimination connected with the efforts to the two main linguistic groups (Ukrainian and Russian speakers) to establish the linguistic primacy in Ukraine (Arel, 1995; Flier, 1998; Wanner, 2014). After Ukraine has split from the Soviet Union, several attempts have been made to strengthen the usage of the Ukrainian language in the media (Kulyk, 2013), education (Janmaat, 1999) and culture (Bilaniuk, 2005), although none of them have been empirically shown to have any profound effect on the society.

Nonetheless, there are reasons to believe the 2014 revolt might have changed the situation. At its core, Maidan represented manifestation of accumulated grievances of various groups living in Ukraine (Onuch and Sasse, 2016) and as such did not directly challenge the privilege of the Russian speakers. Nonetheless, the ethnic Ukrainian radical right represented by organizations such the Organization of Ukrainian Nationalists (OUN), ideologically following in the footsteps of the World War 2 fascist, anti-Russian and anti-Polish movement of Stepan Bandera, were certainly crucial in ensuring the success of the revolt and in combating the subsequent insurgency in the Eastern regions (Bezruk, 2015; Katchanovski, 2015; Risch, 2015). As such, the political power of Ukrainian ethnic nationalism was greatly boosted by the Maidan revolt.

Perhaps more importantly, for many of the participants the important motivation for the Maidan revolt was connected with the traditional pro-Western feelings of a major portion of the Ukrainian population (Pridham, 2014; Samokhvalov, 2015; Sviatnenko and Vinogradov, 2014). The EU flags were heavily visible at Maidan, resulting in the event becoming popularly known as the "Euromaidan". For many of the Ukrainians, the revolt represented an opportunity to embark on the transformation path inspired by that of the neighboring "Visegrad" countries - Hungary, Poland and Slovakia. The aspirations of the Western-looking Ukrainians have had also a linguistic dimension in the form of affection for English, which could be thus considered as the third competing language in Ukraine (Bilaniuk, 2003).

While discussing Ukraine, it is important consideration is the low level of economic output. Ukraine has fallen far way behind its neighboring countries, with the exception of Moldova (Chart 2). While in 1993 the country's GDP, after purchasing power parity (PPP) adjustment, equaled half of Russia and Hungary, back then the wealthiest countries in the region, it has slipped to just a fourth of its current most

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[2] Unfortunately more recent data are not available, because the next census is planned only in 2020.

affluent neighbor Slovakia. Working poor are very widespread (Brück et al., 2010) and thus the conflict over resources remains central to Ukrainian political dynamics (Åslund and Menil, 2000; Zhukov, 2016).
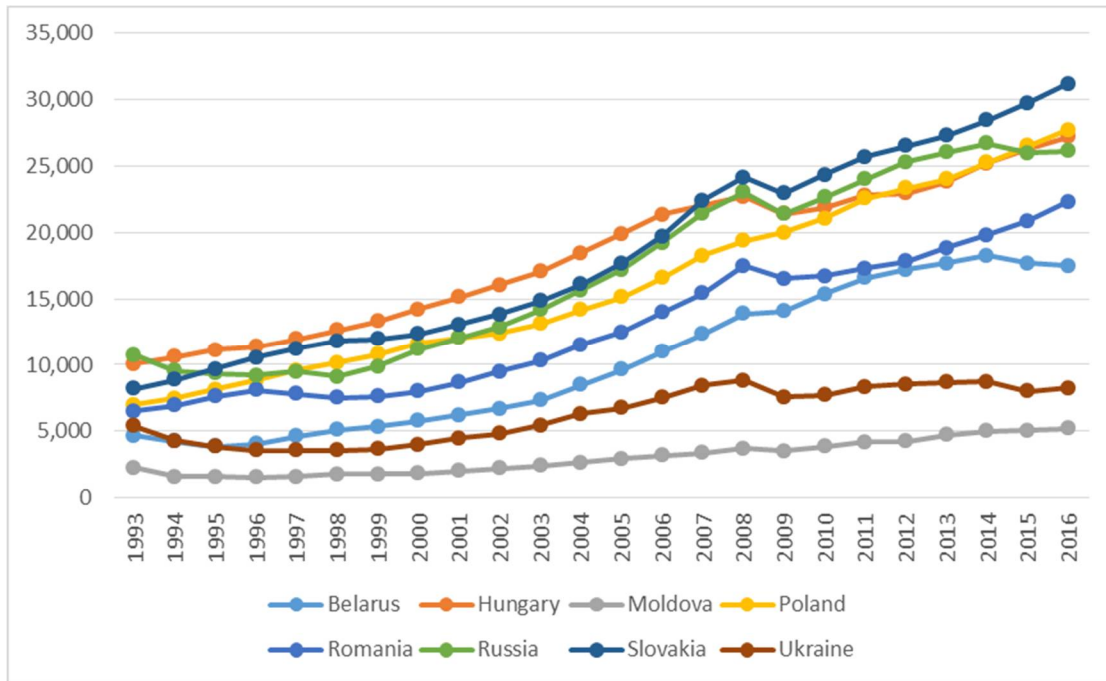

Figure 2: GDP per capita in PPP of Ukraine and its neighbors 1993-2016. Own illustration. Data: WEO

In abstract, the Ukrainian case presents a conductive environment for study of a competition of two otherwise largely similar groups for limited resources. As such, the significance of the presented analysis reaches beyond Ukraine itself and is potentially of interest for other, similarly divided societies.

Data and Empirical Strategy

In this section, we discuss economic underpinning of our analysis as well as present the details of our methodology and the dataset we use.

The analysis is theoretically rooted in the social capital theory, which sees skills, including language skills, as productivity enhancing factor, making labor more valuable and in turn resulting in higher wage (Fabo et al., 2017). To calculate the premium associated with proficiency in the analyzed languages, we employ the standard Mincer earnings function (Mincer, 1974), which predicts wages on the basis of years of education and potential work experience, enhanced by some common denominators of wage, specifically gender, occupation titles, sector and region.

The specific formalization of the Mincerian equation we use in this papers is as follows:

$$\ln Y_i\,(t) \;=\; \beta_0 \;+\; \beta_1 S_i \;+\; \beta_2 t_i \;+\; \beta_1 t_i^2 \;+\; C_i \;+\; \epsilon_i$$

With earnings Y of an individual I at the point of time since the first employment t being determined by the years of schooling S, the potential work experience equaling t, a vector of control variables C discussed below and the error term.

Given the changes in the Ukrainian society discussed in the previous sections, we expect that the premium associated with the Russian language to disappear. At the same time, we expect to see the growing importance of the English language. Our expectation is connected with the documented rise of English-proficient technocratic class, associated with the countries in transformation towards being integrated in the global production chains. The rise of such a class has been discussed worldwide, for instance in the form of the "técnicos" in Mexico (Camp, 1998), the Speak English Good Movement in Singapore(Koh, 2007) and of course the Visegrad counties reformers (Davidson, 2007). Additionally, we base our expectation on recent research suggesting foreign language proficiency highly increases the labor market outcome of return migrants in Eastern Europe (Mýtna Kureková and Žilinčíková, 2018). This conclusion is further supported by a large scale analysis of job advertisements, which shows a very strong demand for foreign language proficiency by foreign-owned companies in the region (Drahokoupil and Fabo, 2019).

The WageIndicator survey has been offered in Ukraine, in both Ukrainian and Russian languages, since 2008. Originally, WageIndicator started as a Dutch survey for women workers (van Klaveren and Tijdens, 2012), separate surveys were deployed for individual countries. In late 2015, the survey was reshuffled as such, that the respondent now gets to select their language and country of living and working[3]. This paper only considers respondents living and working in Ukraine. On average, approximately 20,000 respondents answer at least one question of the survey, however the dropout is substantial and so only 5,000 questionnaires with answered the wage variable as well as the basic demographic and socio-economic variables provided. The analysis in this paper is based on little over a year worth of data collected between November 2015 and November 2016. A longer comparison is not feasible due to a very high level of inflation in Ukraine in this period (over 48% in 2015), which makes it very difficult to compare wage levels over time.

WageIndicator is a large-scale, multinational survey of wages and labor conditions. Respondents are recruited via online marketing campaigns and incentivized to participate by an opportunity to win a monthly equivalent of the minimum wage[4]. Given the non-representative nature of the data source, we advise caution when interpreting the regression analysis. In general, the existing literature agrees that the WageIndicator data given the large number of respondents and coverage an appropriate tool for exploration of relationships between economic variables in particular when the analysis focuses on countries poorly covered by representative sources (de Pedraza et al., 2010; Fabo and Kahanec, 2018; Guzi and de Pedraza, 2015; Lenaerts et al., 2016). Nonetheless, the regression coefficients calculated on the basis of this data are often biased even when weighting is applied (Smyk et al., 2018; Tijdens and Steinmetz, 2016).

In addition to the language choice, the respondents are asked about their proficiency in five globally most widespread languages: Arabic, Chinese, English, Russian and Spanish. This question is, however, not mandatory to answer and thus the sample is affected by non-response. The options offered are: (1)

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[3] More information can be found in the Codebook (Tijdens and Kabina, 2016)
[4] Making the prize at the time of data collection equal to about 1,500 UAH or about 50 EUR. This amount needs to be understood within the context of generally low level of wages in Ukraine.

Native Speaker, (2) Fluent, (3) Rather Fluent, (4) Barely fluent, (5) Not at all. Just over 1,500 observations remain, when selected only respondents reporting their proficiency in English and Russian which is the sample used for the analysis (see Table 1). Two additional small modification of data we made on the basis of the distribution of observations. Firstly, there are just four English native speakers, which have been removed from the sample. Secondly, the "Barely fluent" and "Not at all" for the Russian language proficiency categories were merged due to the "barely fluent" category due to the low number of observations in these categories.

Table 1: Numbers of observations, per survey language and reported language skills.

	Native	Fluent	Semi fluent	Barely fluent	Not at all
Russian	620	724	200	19	44
English	4	89	418	964	132

Own calculation based on WageIndicator data

The dependent variable in the analysis is the natural logarithm of the gross wage. The wages reported by respondents have been recalculated to hourly wages, according to pay period and weekly working hours reported by respondents. The transformation was quite straightforward, because 94 % of respondents reported monthly wage and over 90 % had a standard, 40 hours per week contract. Years of education reflect the number of years between the year when the respondent reached the age of 6, based on the self-reported year of birth and the standard age when children go to school in Ukraine and the year when they reported finishing their education[5]. The potential years of work experience were calculated as the difference between the reported year of first employment and the year of survey.

The vector of control variables contains the following items. Gender, which is based on self-reported information. For occupations titles, International Standard Classification of Occupations (ISCO), last update from 2008, is used. Occupations are aggregated on the highest level, in 9 categories[6]. Employment type was recoded to three main categories: Private sector – divided between domestic[7] owned firms and foreign-owned firms and the "other" category, mainly consisting of small business owners. Finally, the regions are used based on self-reported region of residence recoded to 4 major regions – West, Central, South and Sout-East as visible on Figure 3. A separate dummy variable controls for whether a respondent lives in the capital city of Kiev.

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[5] For students, the year of survey was used in calculations.
[6] One respondent belonging to the armed forces category (ISCO code of 0) was excluded from the dataset.
[7] This category also contains mixed domestic and foreign owned.

Figure 3: Regions of Ukraine. Red – West, Green – Center (Light Green = city of Kiev), Blue – East, Orange – South East. Own illustration

Results

The descriptive statistics summarized in Table 2 already contain several interesting findings. With regards to wage, we see that increased proficiency in both languages is associated with earnings premium. There appears to be no relation with education. In terms of potential job experience, we see more experienced workers are less likely to be skilled in English. Meanwhile, the junior workers appear to be more likely to be poorly skilled in the Russian language. In terms of occupation, there is no visible trend in Russian, while professionals or technicians are more skilled in English than manual or elementary workers. When the economic sector is concerned, workers skilled in English tend to work at the foreign-owned companies, while those not proficient in the languages are more likely to be employed by domestically owned firms. Additionally, workers in the public sector appear less skilled in Russian than in other sectors, which is possibly related to programs promoting Ukrainian language since the independence. Region-wise, Russian is most widely spread in the East and Southeast and the least widespread in the West. Kiev inhabitants are more likely to be proficient in English than people who live outside of the capital.

Table 2: Descriptive statistics

		Russian				English			
		Native	Fluent	Semi fluent	Barely fluent	Fluent	Semi fluent	Barely fluent	Not at all
	Wage mean (sd)	34.2 (19.1)	30.9 (17.8)	28.2 (17.4)	26.5 (12.3)	36.5 (27.8)	32.5 (19.5)	31.2 (17.5)	29.9 (16.2)
	Education mean (sd)	16.2 (3.9)	16.5 (4.1)	15.7 (3.9)	16.1 (5.0)	16.8 (2.8)	16.2 (3.1)	16.3 (4.4)	16.0 (5.1)
	Experience mean (sd)	12.7 (9.5)	12.7 (10.0)	12.2 (10.3)	9.5 (8.2)	10.5 (8.4)	9.3 (8.4)	13.4 (9.9)	17.1 (10.7)
Occupation	Managers	44%	46%	7%	3%	8%	25%	61%	6%
	Professionals	39%	48%	11%	3%	8%	33%	54%	5%
	Technicians and associates	42%	40%	14%	4%	4%	22%	64%	9%
	Clerical support	35%	49%	13%	3%	3%	27%	63%	7%
	Service and sales	27%	45%	26%	2%	2%	18%	69%	11%
	Craft and trade	31%	43%	16%	10%	1%	19%	63%	17%
	Operators	35%	50%	9%	6%	4%	19%	57%	20%
	Elementary occupations	39%	35%	13%	13%	3%	13%	68%	16%
	Other	41%	46%	10%	4%	5%	25%	60%	10%
Sector	Private domestic	41%	44%	11%	4%	4%	25%	62%	9%
	Private foreign	41%	45%	10%	3%	15%	37%	43%	5%
	Public	34%	46%	16%	4%	5%	25%	63%	7%
Region	Central	36%	49%	12%	2%	7%	28%	58%	6%
	West	10%	57%	26%	6%	6%	25%	61%	9%
	East	59%	33%	4%	4%	4%	24%	62%	11%
	South-East	60%	32%	5%	3%	5%	23%	62%	9%
	Kiev	44%	45%	9%	2%	11%	32%	53%	4%

We analyzed the language proficiency using four linear models with logarithm of wage as the dependent variable. The results are summarized in Table 3 We tested the impact of Russian proficiency in a model without (I) and with (II) occupational control dummies and the same for English with (III) and without (IV). We find that without controlling for common observable determinants of wages, better language proficiency translates to a higher wage. Interestingly the size of the effect is similar for comparable categories. Compared to "rather fluent" command of the language, the "fluent" command gives earning premium of 17% for Russian and 18% for English. For the "barely fluent", the penalty is only significant

for English, about 15%. Native Russian speakers enjoy a 32% earnings premium, while those who do not speak English at all suffer a 24% penalty. When controlling for the observable characteristics, however, the effects for English nearly disappear except for a small penalty for "barely fluent" significant only at the 10% significance threshold, while the effects for Russian remain, although their strength decreases substantially to 19% for native speakers and 9% for fluent speakers. The penalty for poor Russian disappears.

The control variables are performing in line with the expectations. The gender gap is particularly pronounced, nonetheless the main indicators of earnings appear to be a job in a multinational company and being located in Kiev. When looking at the R-squared, we see that the basic model only with the main independent variables and the language proficiency only explain about 5% of variance in wages. Meanwhile, the fully specified model explains about 25% of the variation. Overall, our conclusion is that the models perform quite well and produce realistic estimates in spite of being based on an internet survey.

Table 3: Regression results

		(1)	(2)	(3)	(4)
		Russian		English	
	Years of schooling	0.00920**	0.0126***	0.00863*	0.0129***
		(0.00451)	(0.00438)	(0.00453)	(0.00439)
	Work experience	0.0314***	0.0338***	0.0379***	0.0364***
		(0.00584)	(0.00568)	(0.00593)	(0.00573)
	Work experience squared	-0.000692***	-0.000704***	-0.000807***	-0.000751***
		(0.000159)	(0.000156)	(0.000160)	(0.000156)
Language Proficiency (reference = rather fluent)	Native	0.319***	0.189***		
		(0.0591)	(0.0602)		
	Fluent	0.167***	0.0914*	0.181**	0.0360
		(0.0579)	(0.0554)	(0.0866)	(0.0802)
	Barely fluent	-0.106	-0.0210	-0.145***	-0.0793*
		(0.105)	(0.0993)	(0.0438)	(0.0417)
	Not at all			-0.239***	-0.0715
				(0.0743)	(0.0708)
	Woman		-0.257***		-0.264***
			(0.0394)		(0.0394)
Empoyer sector (reference = other i.e. small business)\	Private sector, domestic		0.0193		0.0216
			(0.0470)		(0.0472)
	Private, foreign owned		0.495***		0.479***
			(0.0668)		(0.0676)
	Public sector		-0.0774*		-0.0889*
			(0.0469)		(0.0470)
Region (reference = Center)	West		0.0255		-0.00556
			(0.0538)		(0.0533)
	East		0.0576		0.0981*
			(0.0535)		(0.0521)
	South-East		0.104		0.147**
			(0.0684)		(0.0675)
	Kiev		0.515***		0.528***
			(0.0556)		(0.0556)
	Occupation	N	Y	N	Y
	Constant	7.806***	8.742***	8.054***	8.843***
		(0.0927)	(0.656)	(0.0862)	(0.660)
	Observations	1,560	1,425	1,560	1,425
	R-squared	0.055	0.249	0.045	0.245

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Our results are completely in line with the pre-Maidan literature. Of particular interest is that the premium for native speakers of Russians is twice as high as the one for fluent Russian speakers, suggesting the premium is potentially indeed tied to its ethnic signaling factor, rather than the ability of workers to make themselves understood. On the contrary, the wage premium enjoyed by English speakers can be explained by their other characteristics, such as being likely to be better educated, located in Kiev and employed by better paying foreign companies. In spite of a degree of uncertainty related to non-representative nature of our data, the results appear to be very clear in conveying the message that while the Maidan revolt might have changed many things in the Ukrainian society, dynamics of "language hierarchy" remained largely unchanged.

Conclusion

In this paper, we analyzed and confirmed the continued existence of the Russian language earnings premium in the post-Maidan Ukraine, particularly for the native speakers of the Russian language. Meanwhile, we found no comparable effect for the English language. Our conclusion is in line with the previous (pre-Maidan) literature on language earnings premium in Ukraine. Our main finding, therefore, can be summarized by saying that while a government might be toppled quickly, the economic forces reflecting power imbalances in a society are much more pervasive.

Continued research is needed to observe the long term developments of earnings premia in Ukraine and elsewhere. The tendency of modern economics to zoom in on distributional questions, rather than staying at the level of aggregates, makes such research highly topical. At the same, the growth of political populism and economic frustration of people everywhere, but in particular in economically underdeveloped regions such as Ukraine, further strengthen the case for research on earnings inequalities, in particular those that can be attributed to individual and group characteristics including language and ethnicity.

Given the continued importance of language and ethnicity in the Ukrainian society, as well as in other societies in and beyond the post-Soviet space, we would like to stress the importance of high quality data collection in Ukraine. While web surveys such as WageIndicator can serve well enough for exploratory analysis, a fully representative survey of the Ukrainian society would be valuable, in particular if it was regularly collected to allow researchers to analyze impact of the crucial changes in the society, such as the Maidan revolt.

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