Labour Market Restrictions and Migrations in the EU: a Case of Ukrainian Migration

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Abstract: The thesis aims to estimate the future migration flows from Ukraine to the European Union. Based on the experience of previous EU enlargements and econometric modelling using the method of Ordinary Least Squares with fixed effects, multiple forecasts are created. The forecasts capture the likely development of migration flows in the event of abolishment of labour market restrictions as well as the case with pending restrictions.

Our results show that migration flows are expected to be moderate, posing no threats to the stability of the labour markets of EU member states. The increase of migration due to accession to the EU is likely to be short-term, without substantial impacts in the long-run. Ukraine has large migration potential and is likely to supply the highest amount of labour migration amongst all former USSR countries.

Keywords: international migration, migration potential, ordinary least squares with fixed effects, migration forecasts

Background

The history of Ukrainian migrations is significantly shaped by the political development in the Eastern Europe. Waves of emigration appeared in the 19th and 20th century where noticeable groups of Ukrainians departed to the USA, Canada, or Australia. However, the largest Ukrainian diaspora can now be found in the Russian Federation.

After the collapse of the Soviet Union, Ukrainian economy suffered from hyperinflation: the inflation rate rocketed and exceeded 500% in 1995 and stabilized only by January 1998 to the point that the fluctuations reduced to tens of percentage points instead of hundreds (Sanderson and Strielkowski, 2013). Remaining ties to the Soviet Union were apparent in the structure of migration flows – most of the migrants were heading towards the Russian Federation. Regions such as Moscow and Saint Petersburg attracted Ukrainians mainly because of better income opportunities, same language, geographical proximity, demand for labour, and visa free access (Strielkowski and Weyskrabova, 2014). Nevertheless, it

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was hard to distinguish the true motivation for migration especially in the case of Ukraine. A significant stream of migrants going to the Russian Federation did so mainly due to ethnic reasons and therefore the amount of labour migration was difficult to separate (see Schimmelfennig, 2008; Shapovalova, 2010; Vass and Alexe, 2012; or Rausser and Strielkowski, 2013).

Migration in Ukraine has also been geographically biased. For population living in the Eastern part of the country and Crimea, the Russian Federation was their preferred destination whereas Western regions took advantage of the geographic proximity and searched for work in the EU. Ukraine has also experienced significant demographic decline caused by a sharp drop in the birth rate and the negative migration balance. According to data from the World Bank (2014), the total population decreased in the period 1991 to 2012 from 52 to 45.6 million.

Over 6.56 million Ukrainians were living abroad in 2010 which constituted nearly 15% of the whole population. There were only about 500,000 - 700,000 living in the EU (Eurostat 2014). The Russian Federation remains the number one destination with about 1-2 million Ukrainians living in the country. Other major destinations comprise Canada, USA (both with stocks of about 1 million), Moldova (660,000), Kazakhstan (550,000), Poland (300,000), Belarus (240,000), Italy, Czech Republic (both 200,000), Israel, Germany, Portugal (all three 150,000), Spain (100,000), Slovakia (60,000), and Turkey (35,000) (Bardak et al. 2011). A different source, a report by IOM (2011), mentioned stocks of about 3 million in the Russian Federation, nearly 3 million together in the USA and Canada, 600,000 in Moldova, 500,000 in Kazakhstan and 0.5 million elsewhere (IOM, 2011).

Extended migration profile of Ukraine (IOM, 2011) summarizes the post-Soviet period of Ukrainian migration by five main patterns of migration flows. The (1) return of Ukrainians back home, including (2) ethnic minorities persecuted after the World War II by the Soviet regime (Crimean Tatars, Mtskhetian Turks, Bulgarians, Armenians, Greeks and Germans), (3) emigration of other ethnic minorities (Jewish community, ethnic Germans and Russians, and others), (4) labour migration to Western Europe of both permanent and circular nature and both regular and irregular frequency, and finally (5) irregular transit migration to the West through Ukraine.

The economic incentives to migrate (domestic push factors) stem from both the level of living standard and high degree of economic divergence between Ukrainian regions. It varies from 20% above average to 37% below average of national per capita income. According to the IOM report (2011) economic disparities are not the only source of migration pressures but they have to be viewed as one of the main reasons for the current geographical distribution of migrants. The IOM report further stresses key factors influencing migration, such as EU border proximity, migration networks, and cultural ties. The document also cites a study performed by ETF in 2009 in which over 56% of the respondents agreed that the “prospect of higher salaries and improvement of living standard” is an important push factor. Interestingly, only 7% considered unemployment an important push factor.
Today, the most pressing challenges in alleviating poverty are to reduce inefficiencies in the distribution of incomes, increase wages that are among the lowest in Europe, and increase access to education. Due to the unfavourable demographic evolution there is an increasing pressure building up on the pension system which in turn does not allow for reduction in payroll taxes. The Ukrainian labour market is also facing a number of challenges resulting from the transition from a centrally planned to a market economy. The market is characterised by a large public sector, low labour force participation, and lack of employment opportunities, especially for the highly educated (Shapovalova, 2010).

Although Ukraine predominantly remains a country of origin of labour migration leading both to the CIS and the EU countries, Ukraine has also become an attractive destination for labour migrants. Particularly immigration from Asia is on the rise (BMP 2011). Incompleteness is a common issue of migration statistics and so there is a fairly high chance that many of the migrants travel illegally and do not show up in any of the statistics.

Out of the three studied countries Ukraine collects the highest amount of received remittances. In 2012 Ukrainians working abroad sent home around 8.5 billion in current USD, which made up a total of 4.8% of the domestic GDP (The World Bank, 2014).

**Theoretical framework**

Most of the studies were focused on the 2004 wave of accessions. Both the research methodologies and results differed. The estimations of migrant flows range from 130,000 incoming to the whole EU per year to 3 million in the horizon of 10-15 years on from accession. Among the preferred destinations Germany is cited the most. An important fact is that the accession comprised 10 countries with the total population of over 70 million. If the highest numbers are taken into account the migration flows are estimated to be between 4-5% of the total population of acceding countries over a long-term period.

Looking at the available data from the receiving countries on migration flows from Poland, Romania, and Bulgaria it is possible to get an approximation of the magnitude of post-accession migration flows. Eight years after the accession, the migrant stocks of Poles living abroad in other member states increased by about 0.75 million. The major destinations were Germany, Spain, Italy, and the UK. In the case of Romania, 5 years after the accession, migrant stocks in Italy, Spain, Portugal, the UK, and Germany increased by over 600,000. Lastly, the number of Bulgarian migrants in Italy, Spain, Portugal, the UK, and Germany increased only by 80,000 based on the official statistics of Eurostat (2014). In the case of all three countries, the migration flows increase shortly after the accession but return to their original levels within 3-4 years.

Danzer and Dietz (2009) study temporary migration flows of five former Soviet Union countries and report high temporary labour emigration since 2004 for Moldova. Belarus and Ukraine were reported to face moderate outflows. The majority of these migrants headed to CIS countries, mainly the Russian Federation.
Coupé and Vakhitova (2013) estimate 1.5-2 million labour migrants within Ukraine, out of which more than half travel for work to the EU. The prevalent parts of the stocks are men who work in unqualified jobs, e.g. construction. The authors also comment on the current negotiations of a visa free regime between Ukraine and the EU. They claim that a large increase in migration flows is unlikely to happen even if negotiations are successful. Instead, they expect replacement of illegal migration by legal migration, shorter duration of labour migration, and more circularity.

Barbone et al. (2013) share the same prospects about the future migration from the Eastern countries. The simulations created in their study confirm that the possibility of massive immigration of workers from Ukraine, and other CIS countries is remote. The Russian Federation is likely to boost its demand for migrant labour force and is likely to “compete” for it with the EU. These estimations are made based on the demographic developments of the countries and are further limited by the predictability of the development of economic situations in the countries of origin. The authors suggest that dire economic situation is a key push factor driving migration.

Lastly, Fertig and Kahanec (2013) also reach optimistic conclusions. Estimating the migration flows using the models of post 2004 enlargement data, the authors expect modest migration flows in case of no liberalization of labour market restrictions, and only moderate increases in case of free labour market access. The increase is likely to occur right after the liberalization and is not predicted to last for much longer. Ukraine is likely to send the largest number of migrants due to its population size. The amount is estimated to be about 850,000 over a period of 10 years. However, even in the two preferred countries (Germany and Italy) the increase of migrants is predicted to be around 100,000 over the forecasted period.

Overall, data record a moderate increase in the migrant stocks of Poland, Romania, and Bulgaria in other EU countries, not supporting any fears of uncontrolled emigration. The forecasts for Ukraine in the migration literature also expect moderate migration flows.

The data

Our data are obtained from multiple online sources. Crucial statistics for the number of Ukrainian migrants with residence permits in the EU countries is retrieved from Eurostat online Migration database. This data file provides nearly complete data but it covers a rather short period – 5 years from 2008 to 2012. It covers statistics on migrants in all of the countries of the EU in addition to Norway, but excluding Croatia. The migration studies generally encounter problems of data availability but in this case most of the desired variables are available. The statistics for independent variables used in the regressions are obtained from the online database of State Statistics Service of Ukraine (2013). It is possible to construct a nearly fully balanced panel from 2008 to 2012 with 28 cross sections. The obvious limitation of the dataset is its restricted time dimension of only 5 consecutive time periods. The second drawback of the data is that migration figures do not report labour migration but all population with resident permits. Thirdly, migration statistics are known to be underestimated as they do not include illegal migration. All
of these facts make the interpretation of results harder. However, it is a common issue subjected to data availability.

**The methodology and the theoretical model**

The econometric model is based on previous research done in the field and derived from the works of Sjaastad (1962), Hatton (1995), Boeri and Brücker (2001), Álvarez-Plata et al. (2003), Glazar and Strielkowski (2010), and Strielkowski et al. (2013). Focusing on the estimation of the dependence of migration on push factors the theoretical model is constructed in the following way:

\[
umig_{it} = \beta_0 + \beta_1 \lnuwages_t + \beta_2 \lnuunemp_t + \beta_3 umig_{it-1} + \epsilon_{it} \tag{1}
\]

where \(i = 1, \ldots, 27\) and \(t = 1, \ldots, 5\), dependent variable \(umig_{it}\) is the stock of Ukrainian migrants with residence permits living in country \(i\) in time \(t\) normalized by Ukrainian population in time \(t\), \(\lnuwages_t\) is natural logarithm of Ukrainian average monthly wage in UAH in time \(t\), \(\lnuunemp_t\) is natural logarithm of unemployment rate (in \%) in Ukraine in time \(t\), and \(\epsilon_{it}\) is error term. The estimation process reveals significant group effects in the data, implying that constant terms across cross sections are not equal. The model is transformed to error-components model where the error term is split into country-specific and idiosyncratic error:

\[
umig_{it} = \beta_0 + \beta_1 \lnuwages_t + \beta_2 \lnuunemp_t + \beta_3 umig_{it-1} + \upsilon_i + \epsilon_{it} \tag{2}
\]

where \(\upsilon_i\) are omitted group-specific effects. The model is then estimated using Fixed Effects within transformation to eliminate \(\upsilon_i\). This is achieved by including \(\alpha_i\) dummy variables in the regression where each dummy variable equals to 1 for country \(i\) and 0 for the others for each time period. Group-specific effects are assumed to be correlated with the regressors. To account for possible serial correlation in the idiosyncratic errors, which causes bias in standard errors, the regression is run in the way that standard errors are adjusted for clustering. Based on the migration literature that uses similar variables in the research, such as Hatton (1995), Boeri and Brücker (2001), Glazar and Strielkowski (2010), Strielkowski et al. (2013), and Strielkowski et al. (2014), Ukrainian migration stocks in foreign countries are expected to be negatively correlated with average gross monthly wages, positively correlated with unemployment, and also positively correlated with lagged dependent variable because it represents network effects in the equation. Table 1 describes the outcome of the estimation.
Table 1: Migration model based on push factors: Ukraine (2008-2012)

<table>
<thead>
<tr>
<th>Estimate</th>
<th>Standard errors (cluster)</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>lnuwages</td>
<td>0.0840467</td>
<td>0.0445687</td>
<td>1.89</td>
</tr>
<tr>
<td>lnunemp</td>
<td>0.2530514</td>
<td>0.1253847</td>
<td>2.02</td>
</tr>
<tr>
<td>umig_{t-1}</td>
<td>0.6415681</td>
<td>0.2423186</td>
<td>2.65</td>
</tr>
</tbody>
</table>

R^2 within: 0.3962
N: 105

Source: own results

The results confirm the expected dependencies except for one variable – monthly wages. While the straightforward reasoning would suggest that higher earnings would lead to lower incentives for Ukrainians to migrate, the opposite is true. The positive relationship of the variables makes sense due to the high transactions costs of migration. In order for an individual or even whole family to be able to migrate a not negligible amount of funds is required to obtain necessary paperwork, pay for travel and moving expenses, or have enough cash to pay rent in the destination country. Therefore, positive and significant influence of wages shows that there exists a significant transaction cost barrier which needs to be overcome before a person achieves sufficient financial strength to migrate. The Ukrainian population is responding to domestic push factors. All of the variables used in the regression are significant, especially the lagged dependent variable serving as a proxy for network effects.

Having found a model with good fit for the explanation of Ukrainian migration the next step in the modelling is to provide forecasts. It is clear that the forecasting capability of the model is very limited due to the short time dimension of the available data, nevertheless it may offer revealing information for future decision making on migration policies of EU countries.

Empirical model: 3 scenarios of Ukrainian post-accession migration in EU

Following the obtained results, we are able to construct 3 different scenarios of what might happen to Ukrainian migration in Europe after EU accession: realistic scenario, optimistic scenario, and pessimistic scenario. The optimistic and pessimistic scenarios are not concerned with the number of migrants and are based on Ukraine’s economic and political development.

The optimistic scenario presumes favourable economic development, hence its name. It calculates with stable average wage growth rate of 6%, unemployment percentage equal to the average of unemployment rate in Ukraine in the period 2008-2012 minus 1 percentage point. Finally, as in the base model the dependent variable is normalized.
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by the domestic population of Ukraine, which is modelled to decrease annually at the speed of 0.7% (yearly average of population decrease over the period of 2008-2012). The forecasting period is from 2013 to 2050. Keeping in mind the effects of the regressors we see that an especially high wage growth rate leads to higher emigration in the long run, resulting in bigger stocks of migrants with residence permits in the EU countries. Under such circumstances the stocks reach 4.75 million in 2050 across the whole EU.

The realistic scenario counts with a stable average wage growth rate of 3%; unemployment percentage is equal to the average of unemployment rate in Ukraine in the period 2008-2012 with no bonuses or penalties. Both length of forecasting period and decrease of Ukrainian population is the same as in the previous case. Using these more sober assumptions the number of Ukrainians living in the EU in 2050 culminates at approximately 3.5 million.

Lastly, the pessimistic scenario working with a stable average wage growth rate of 0%, the unemployment percentage being equal to the average of unemployment rate in Ukraine in the period 2008-2012 plus penalty of 2% yields long run estimates of around 2.5 million residents with permits in the EU. Chart 1 displays yearly migration flows for the respective scenarios. It is worth noting that while the pessimistic scenario estimates the lowest migration in the long run, it presents quite high emigration flows in the very short run.

**Chart 1: Number of Ukrainian migrants in the EU in 2008-2050 – 3 scenarios (27 EU countries and Norway, impact of accession)**

![Chart 1: Number of Ukrainian migrants in the EU in 2008-2050 – 3 scenarios (27 EU countries and Norway, impact of accession)](chart1.png)

**Source:** Own calculations

The total amount of migrant stocks in the EU in the long run based on the development of domestic economic incentives varies from 2.5 to 4.75 million. When taking into account that the total stocks are dispersed among 28 countries over 38 years such emigration does not constitute serious threats to the stability of labour markets of receiving EU countries.
The second and more problematic part of modelling is to derive the effects of the possible accession of Ukraine to the EU free labour market. Ukraine did not experience a similar event in its modern history and thus it is impossible to estimate the accession impact relying solely on Ukrainian data and empirical facts. If the country had had such an experience the model would have been expanded by a dummy variable capturing the period before and after the change. The estimated coefficient of the dummy variable could then be used to simulate the effect for future similar events. Since the mentioned approach is not feasible the thesis studies available data of the countries that joined the EU in past and tries to deliver estimates based on their experience.

Migration data of Bulgaria, Poland, and Romania are used to attempt to quantify the possible impact of Ukrainian accession. These countries are chosen for multiple reasons. Each country underwent the accession process to the EU in recent history but not too recently. For these reasons migrant data are available both for the period before and after accession. Secondly, all of the countries have tradition of emigration and their population exhibit high migration potential. Thirdly, the countries are geographically close to Ukraine and in the proximity of the EU which makes them more comparable.

From the empirical data it is clearly visible and unambiguous that accession leads to increased emigration flows from new member states to the old ones. More specifically, relaxation of labour market restrictions causes the increase. The act of accession does not have such power. In the case of Bulgaria, Poland, and Romania it is apparent that for every top 5 EU destinations for each country the increase in migration flows occurs right after the abolishment of the restrictions. However, the effect is not huge and quickly dissolves. The biggest reaction occurs in the first two years after the lifting of the restrictions and then hastily diminishes. Generally, the migration flows return to their original level after 4 years and in many cases even further below. There are no visible increases in migration flows prior to the lifting of restrictions.

Therefore, last year´s value of migration flows before the lifting is taken as a benchmark value of normal migration flows. The following 4 years are observed and benchmark value is deducted. This effect is then summed up across 5 destinations for each country separately. As a result, we get the approximate value of shock for each of the 3 countries. Next, a variation in the level of shocks is narrowed down by normalizing the values of shocks to a domestic population. This eliminates the inequalities due to the population size. Once such normalized shocks are obtained, an arithmetic average is calculated to further narrow down a variation. Lastly, this generalized shock is normalized to the Ukrainian population and projected on the modelled migration flows and stocks in the previous exercise.

To model the shock, the accession date is set to the beginning of the year 2025. The date is considered to be the soonest possible date for the Ukrainian accession but in the light of the recent political developments it is hard to predict any future development. The shock is modelled for all 3 scenarios and is presented in Chart 2.
In the long run, the effects of accession have marginal influence on the total number of Ukrainian residents in the EU 27 and Norway. When compared to the prediction in the absence of shock the range of resident migrant stocks shifts from 2.5 – 4.7 million to 3.2 – 5.6 million.

In sum, based on the evidence of previous accessions of countries such as Greece, Portugal, Spain, Poland, Bulgaria, and Romania migration flows tend not to exhibit long term patterns of growth or instability. Usually, there is a noticeable increase of emigration in the short run but it is always followed by a rapid rally of the trend or even below the original values. When the empirical observations are applied to the case of Ukraine, with the use of econometric modelling it is estimated that the potential accession would augment the total number of Ukrainian residents in the EU by about 0.8 million in the first 3 years after the accession across all member states. If member states were to exercise their right to postpone the opening of the free labour market by up to 7 years the proposed number would be scaled down. Ultimately, the long term equilibrium of the resident stocks is not significantly impacted by the accession but rather by the development of Ukrainian economy and other influencing factors.

The current military crisis in Ukraine presents quite a challenge for any prediction of future migration flows. The type of resolution of the conflict is likely to influence the migration. Nevertheless, in the light of up to date evidence hypothetical migration is not viewed as threatening.
Conclusions and discussions

In the case of Ukrainian migration in the EU, economic push factors were found to be significant in driving migration decisions. Availability of regional data for Ukraine made it possible to check migration potential of Ukrainian migrants. The results confirmed that the Ukrainian population is quite mobile and responding to the changes of domestic push factors. In the case of Belarus, a good fit of the model using economic variables was not found and therefore the effects of economic variables could not be statistically distinguished from zero. For Ukraine and Moldova three scenarios of development of migration flows were extrapolated using different growth rates of independent variables. The number of Ukrainian residence permit holders in the whole EU except Croatia but including Norway was estimated to rise from nearly 800,000 in 2012 to 2.5-4.7 million in 2050.

Additionally, based on the accession experience of Poland, Romania, and Bulgaria a migration shock was modelled in all scenarios to discover the influence of the EU accession on the migration flows. The accession to the EU free labour market would increase the long-term migrant stocks in the EU by 0.8 million for Ukraine. Such an increase would most likely happen in the short-run, not having any further influence on long-run migration flows.

Considering that the shock would be distributed among 28 EU countries over 3-4 years and would leave no long-term effects, it is safe to conclude that the worries of the massive immigration waves are not well-founded. From the economic point of view, migration to the EU is beneficial and leads to a higher GDP growth rate. The migration policies of European states should acknowledge the fact and not succumb to protectionist behaviour. Especially under unfavourable demographic trends which lead to the decline in young labour force groups.

In sum, the research provided enough evidence to support the claim that the accession of Ukraine to the EU would not lead to excessive migration flows endangering the labour markets of the EU member states. However, accession to the free labour market was observed to result in a short-term increase of migration flows. In the case of Ukraine expected influences of independent variables were calculated. Migration was found to be negatively correlated to average monthly wages and positively correlated to unemployment. Lastly, network effects came through as the most significant variables in regressions proving their key importance in the migration decisions.

Even though the modern datasets provide sufficient data for econometric modelling, panel data with longer time dimension would likely yield more precise results. Therefore, there is a need for future research to re-estimate the model with additional data. Finally, the explanation of migration using economic variables is only one of the possible approaches. A qualitative research should be done on the effects of language, distance, culture, or political climate.
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