

EU Enlargement and Migration: Scenarios of Croatian Accession

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Abstract: *This paper analyzes the possible incidence of pending** Croatian EU accession that is to take place on the 1st of July 2013, on the labour migration from Croatia to the European Union. We apply panel data estimators using the data on emigration from 18 EU countries into Germany (which is the EU country with the largest share of ex-Yugoslav and Croatian migrants) in order to construct possible scenarios of Croatian migration to the EU.*

Three scenarios of migration - pessimistic, realistic and optimistic - are drawn and the sensitivity of estimated coefficients on migration from Croatia into Germany during next 25 years is further discussed in detail. We conclude that, similarly to hypothetical Turkish accession, Croatian EU accession is not going to cause massive migration inflows.

Keywords: *international migration, EU enlargement, Croatia, panel data, seemingly unrelated regressions*

Background

Croatia is the second post-Yugoslav country, after Slovenia, and the first from the Western Balkans to gain a free pass for the EU membership. The accession is scheduled to take place on 1st July 2013 (*editors' note: meanwhile Croatia became a part of EU on 1st July*). This means the EU integration process took 10 years since Croatia's application for joining the EU was filed in 2003. The accession negotiations lasted until June 2011 due to tough reforms required by the EU. Moreover, the talks were frozen in 2009 for 10 months because of the border dispute with Slovenia over the course of the maritime border on the Piran Bay (see for example Jovic, 2006, Schimmelfennig, 2008; Zupančič and Hribernik, 2011). The Treaty of Accession was signed by the 27 EU Member States and Croatia in December 2011.

On the 22nd of January 2012 a referendum on EU accession was held in Croatia with 66 percent voting in favour of joining the EU. This paved the way for the Member States to ratify the treaty in their national legal systems. As of March 2013, 19 countries have deposited the signed treaty, whereas Denmark, Germany and Slovenia have not started

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the procedure in their parliaments. Again, the main issue that could potentially threaten Croatia's membership is Slovenia's refusal to ratify the accession, which is caused by a dispute over Croatian citizens' deposits taken over by the Bank of Ljubljana after the collapse of the Socialist Federal Republic of Yugoslavia. However, it is very likely a compromise will be reached in the weeks to come.

The accession of Croatia will be incomparably less visible from the EU's point of view in comparison to the previous enlargements from 2004 and 2007. The political benefits of the accession will be more evident on Croatia's side, although for the general image of the EU the enlargement means that this organisation is attractive for the third-party countries. Still, Croatia's membership will not essentially change the functioning of the Union. This is mainly because of the small socio-economic potential of the country (Vass and Alexe, 2012; or Żornaczuk, 2013). This is also reflected in the small institutional capacity of Croatia.

Nevertheless, Croatia's membership may have relevance to some EU policies. Most of all, this country will be active in the EU enlargement policy, especially in the Western Balkans. This accession changes the perspectives in the region as Croatia will assume the role of a bridge between the Union and the Balkans. This is because of the priorities of this country's foreign policy, the recent experience of the accession negotiations and the socio-cultural ties with the region. Hence, the EU enlargement policy seems to be the area where the activities of Croatia – due to its geopolitical location – will be mostly visible. For the same reason this country may have ambitions to play a more important role in building European energy security. This may be evidenced by the plans to construct an LNG terminal, "Adria", and some other projects, including a connection to the South Stream gas pipeline.

Croatia is home to roughly 4.3 million people (census 2011). In 2012, gross domestic product based on purchasing-power parity amounted to 18.3 thousand USD. Two thirds of Croatian economy is based on services, with tourism being a significant sector. This is why unemployment in this country is of seasonal nature: it was at 21.9% in January 2013 (highest in last 10 years), and may drop by some 4% during the summer months.

Croatia was visibly hit by the global economic crisis, which can be evidenced – among other things – by the fact that after the recession the country's GDP (PPP) has not yet reached the level from 2008 and the unemployment went up by nearly 50% in last 5 years. Also, in February 2013, Moody's Investors Service – one of the key rating agencies – downgraded Croatia's government bond rating to Ba1 from Baa3. However, according to the World Bank, in 2013 Croatia may experience a growth in the economy by some 0.8%.

Whereas the above-mentioned issues have been broadly discussed, it seems interesting to analyze an element of the impact of Croatia's accession on the functioning of the European Union, in an area where the government in Zagreb could have relatively limited instruments of influence. The issue concerns the implications of the accession for migration from Croatia to the EU.

Theoretical framework

The basis of the economic theory dealing with the economics of migration states that the most important drivers of migration flows from a less wealthy country or region to the wealthier one are: wage differentials, economic disparities, differences in GDP per capita and unemployment differentials. With regard to this, Strielkowski and Turnovec (2011)

come up with the concept of “indicator of migration costs” (or migration transaction costs) which is country-specific and which consists of tangible and intangible components. Amongst the tangible components range the cost of resettling or adjustment in the new country, the intangible components include, for example, psychological costs of migration (such as breaking the social ties, leaving family or friends or languages barriers). The indicator of migration cost which is a country-specific variable might be used for assessing the volume of international migration: it can be shown that if this indicator is greater than the difference between wages of member states in the common market, there is no motivation for the labour to move (propensity to migration equals to zero). In such a case economic and psychological costs of migration are larger than benefits of wage differentials. For the countries where the indicator is greater than wages, the migration potential (or the propensity to migration) is low and its citizens might not promptly react to wage and unemployment incentives abroad.

The concept of propensity to migration in the framework of the two countries (country H and country P) model can be presented as the following:

$$\Pi(w_H, w_P, \alpha) = \begin{cases} 1 - \frac{\alpha}{w_H - w_P} & \text{for } \alpha \leq w_H - w_P \\ 0 & \text{for } \alpha > w_H - w_P \end{cases} \quad (1)$$

Where w_H, w_P are the equilibrium wages in country H and country P respectively and α is the indicator of migration costs (or migration transaction costs).

Our paper presents an economic analysis of the factors that might determine Croatian post-accession migration to the EU. Based on the Sjaastad (1962), Harris, Todaro (1970), and Hatton (1995) human capital migration approach, we apply the econometric tools utilized in similar studies by Boeri, Brücker (2000) and Alvarez-Plata, Brücker, Siliverstovs (2003), and most recently, Glazar and Strielkowski (2010) and Glazar and Strielkowski (2012) in order to predict future migrations from Croatia to Germany, the European country with the largest ex-Yugoslav Diaspora, and to the European Union respectively. Three scenarios of migration are drawn and the sensitivity of estimated coefficients on migration from Croatia to Germany during next 25 years is further discussed in detail.

Yugoslav and Croatian migration in Austria and Germany

In order to construct and analyse possible scenarios of Croatian labour migration in Europe, we decided upon choosing the case of Germany, an EU country with the largest ex-Yugoslav and Croatian Diasporas.

Currently, Germany is the largest EU target-country for incoming Croatian migrations with a steady growth in absolute numbers well before the disintegration of Yugoslavia. Most of Croatians have been working in Germany, either temporarily or on the permanent basis for decades (as Yugoslavian and later as Croatian nationals). According to the German

Statistical Office, ex-Yugoslavs (as well as other Southern Europeans) constitute about 3 million people, making it about 3.6 % of the total German population (Statistisches Bundesamt, 2012).

Since the Croatian independence and the end of war conflicts in former Yugoslavia, Croatian migration in Europe underwent several stages yielding a steady decline since the beginning of the 21st century. This trend is likely to be caused by the cyclic character of migration and by the economic situation in Croatia (which became a major affordable holiday destination for many middle-income Europeans) and EU. Moreover, recent EU enlargements in the 2000s caused higher competition between immigrants from the EU countries due to the increasing amounts of migrants from the EU new Member States.

All this gives us the right to assume that pending Croatian EU accession should not necessarily lead to the massive influx of cheap labour. It seems interesting to explore the recent trends and to build scenarios of migrations after Croatian EU accession in July 2013: realistic, optimistic and pessimistic. This can be achieved by studying the data from recent Croatian migrations and extrapolating them in accordance with processes that might occur in the future.

Data and methodology

In order to conduct the empirical analysis presented further in this paper, we employ the data on migration to Germany from 1993 (when the Croatian independence was established) until 2011, time series from OECD database (complemented by AMECO database) and Eurostat databases. Migration data were compiled from the German central register of foreign nationals, and the German Statistical Office.

The sample period of dependent variable (the share of migrants from home country living in Germany as a % of source country population) starts in 1993 when it became possible to track Croatian migrants and distinguish them from other ex-Yugoslavs (Bosnians and Serbians). The breaks in migration stock data series are dealt with using the methodology applied in Alvarez-Plata et al (2003) and Glazar and Strielkowski (2010).

Our dependent variable is normalized with the home countries' population representing the difference in migration stocks as a % of the original home population. The disparity could come from different population growth rates, i.e. of population in the home country (in our case Croatia) and of appropriate population of foreign citizens in the receiving country (in our case Germany) and also in the rate of naturalization. Equation (2) below shows the relation between net migration and difference in migration stocks:

$$\Delta mst_{fnt} = m_{fnt} + ((g_f - g_h - \delta_f)/(1 + g_r)) * mst_{fnt,t-1} \quad (2)$$

where mst_{fnt} denotes the ratio of the stock of foreign residence from country h in foreign country f to the original home population, m_{fnt} is the ratio of actual net migration from country h into home country f to the original home population, g_h is the natural growth of population in the original home country, g_f is the growth of migrant population in receiving country, δ_f is the rate of naturalization of foreign population in receiving country. The index t denotes the time period. It is apparent from (2) that net migration equals the migration stock if the numerator of the fraction equals to zero. We assume that population growth rates are equal and the naturalization rates are zero.

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

The first part of the theoretical model is consistent with those models based on human capital approach (Sjaastad 1962, Harris and Todaro 1970, or Hatton 1995) and deals with investment in human capital and expected future income. The model applies the econometric methods used by Boeri and Brücker (2000) and Alvarez-Plata, Brücker and Siliverstovs (2003) in estimating migration from CEEC into the EU15 and most recently by Glazar and Strielkowski (2010) and Glazar and Strielkowski (2012).

We assume that people make expectations regarding the future income in the target (host) country and source (home) country. The differences in former incomes influence expectations about the future possible income. A country's GDP per capita serves as a proxy for individuals' incomes both in source and target countries (the selection of GDP per capita can be justified by limited data sources available for other variables). The average employment rate in both target and source countries is taken as a proxy for the labour market conditions. More precisely, the probability of finding a job is rising with the presence of higher employment and vice versa. The lagged migration stock serves as a proxy for network effects. If migration flows are based on expectations about past variables that means that present values are influenced by past values (Hatton 1995), thus it should be first-order autoregressive process (AR (1)). Thence, a simple error-correction model can be constructed in the following way¹:

$$\begin{aligned} \Delta m_{f,h,t} = & \beta_1 * \Delta \ln (w_{f,t} / w_{h,t}) + \beta_2 * \Delta \ln (w_{h,t}) + \beta_3 * \Delta \ln (e_{h,t}) + \\ & + \beta_4 * \Delta \ln (e_{f,t}) + \beta_5 * \ln (w_{f,t-1} / w_{h,t-1}) + \beta_6 * \ln (w_{h,t-1}) + \\ & + \beta_7 * \ln (e_{h,t-1}) + \beta_8 * \ln (e_{f,t-1}) + \beta_9 * (m_{f,h,t-1}) + \beta_{10} * DummyF + \varepsilon_t \end{aligned} \quad (3)$$

where:

$m_{f,h,t}$	the share of migrants from home country h living in country f as a % of home population h .
$w_{f,t}/w_{h,t}$	foreign to home country income difference
$w_{h,t}$	home country income
$e_{f,t}$	employment rate in country f
$e_{h,t}$	country of origin employment rate
$m_{f,h,t-1}$	lagged migrants stock of home country h and target country f
DummyF	dummy variable for the free movement of labour
$t, t-1$	denotes time periods

Variables enter the equation specified in (3) both as steady levels and as variables' differences. Variables' differences show the short term reaction of migration to these fluctuations, on the other hand the levels of the variables determine the long-run relations between migration stocks and appropriate variables. The equilibrium stock of migrants can be thence derived from equation (3) by setting all changes equal to nil and getting a steady

¹ An error-correction model is a dynamic model in which the movement of the variables in any periods is related to the previous period's gap from long-run equilibrium (see Baltagi, 2005).

state for stock of migrants²:

$$\begin{aligned} \bar{m}_{fh} = & (\beta_5 / -\beta_9) * \ln(w_f / w_h) + (\beta_6 / -\beta_9) * \ln(w_f) + \\ & + (\beta_7 / -\beta_9) * \ln(e_f) + (\beta_8 / -\beta_9) * \ln(e_h) + \\ & + (\beta_{10} / -\beta_9) * DummyF + \varepsilon \end{aligned} \quad (4)$$

Where \bar{m}_{fh} is the steady state equilibrium rate of the foreign migrants to the source population, β in brackets are semi-elasticities in the long-run equilibrium and denote the relation between stocks of migrants and explanatory variables. The coefficient β_9 is expected to be negative; hence the signs of the original coefficients will not change. The negative sign of the coefficient is expected due to the assumption that migration follows the AR(1) process. Hence $m_t = \eta m_{t-1}$ where η must be smaller than 1 (If this does not hold, the whole population of the source country will migrate). The part of (4) can be re-written in the following way:

$$\begin{aligned} \Delta m_t = m_t - m_{t-1} &= \beta_9 * (m_{t-1}) \\ m_t &= (1 + \beta_9) * (m_{t-1}) \end{aligned} \quad (5)$$

Thus, it appears that β_9 should be negative to assure the sustainability of migration. If the β_9 was even slightly positive, the coefficient before lagged migration would have been larger than one and this would have led to unsustainable migration explosion. Furthermore, the variable denoting the employment rate in the country of origin (domestic income) had to be eliminated from equation (4) due to the fact that it proved to be insignificant in all estimations (it appeared to be redundant because the null hypothesis of the insignificance of beta was not rejected). The final model can be presented in the following way:

$$\begin{aligned} \Delta m_{fht} = & \alpha_h + \beta_1 \ln(w_f / w_{ht}) + \beta_2 \ln(w_{ht}) + \beta_3 \ln(e_f) + \\ & + \beta_4 (m_{fh,t-1}) + \beta_5 (m_{fh,t-2}) + \beta_6 * DummyF + Z_m \gamma + \varepsilon_t \end{aligned} \quad (6)$$

Where:

- m_{fht} - the dependent variable representing the share of migrants from source country h living in target country f as a % of source country population h .
- w_{ht} - country of origin income level
- w_f / w_{ht} - foreign to home country income difference
- e_f - employment rate in country f
- $m_{fh,t-1}$ - lagged migrants stock of home country h in country f
- $m_{fh,t-2}$ - lagged migrants stock of home country h in country f
- Z_m - vector of time-invariant variables which affect the migration between two countries such as geographical proximity and language.

In order to estimate our model, we employ Seemingly Unrelated Regression (SUR). The results are shown in Table 1 below. The model uses a sample of 18 cross sections total balanced panel observations and covers the data on migration stocks and economic factor in Germany from 1993 until 2011.

² Variable t was left out from the equation in order to indicate the long-term equilibrium.

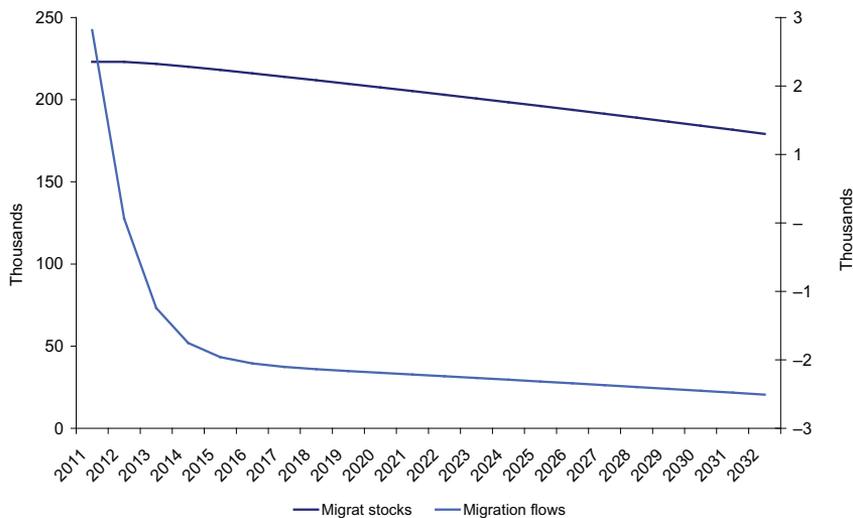
Table 1: Panel data estimation results, Croatian migration to Germany (1993-2011)

	SUR
C	-2.322**
w_{ht}	0.0155*
w_{it}/w_{ht}	0.0287*
e_{it}	0.4424**
$m_{it,t-1}$	1.3909**
$m_{it,t-2}$	-0.3828**
Z_{it}	0.211
N	18

**,* coefficients are significant at 1 and 5% level, respectively

Source: Own calculations

Income differential has a positive and significant impact on migration. Furthermore, the income in the source countries is also significant and has a positive impact on migration. Employment rate in Germany (used as an indicator of the labour market conditions) is small, significant and positive. Lagged variables of migration have significant and positive and significant and negative impacts on migration.

Figure 1: Croatian migration in Europe - realistic scenario

Source: Own calculations

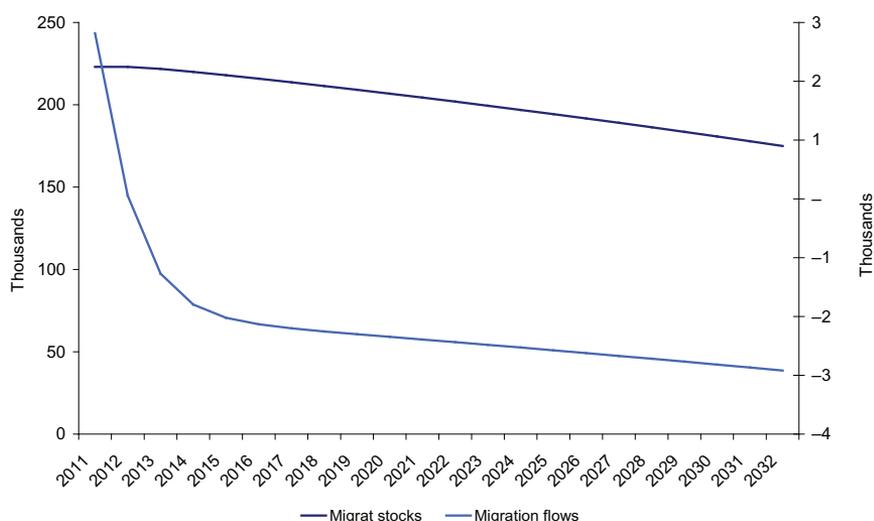
Hence, migration flows appear not to be too influenced by the free movement of labour. Following the obtained results, we are able to construct 3 different scenarios of what might happen to the Croatian migration in Europe after EU accession: realistic scenario,

optimistic scenario, and pessimistic scenario. The optimistic and pessimistic scenarios are not concerned with the number of migrants and are based on Croatia's economic development.

In the realistic scenario the employment rate remains unchanged and GDP in Germany and Croatia grows at the rates of 2 % and 4 % p.a., respectively. The results are reported in Figure 1.

In the optimistic scenario a faster convergence of the Croatian economy to the EU level is assumed. Moreover, the levelling of economic development of Croatia and the EU also happens earlier. GDP per capita of Croatia converges to the German GDP per capita in a rate of 6 % p.a. The employment rates remain constant as in the realistic scenario. The results of the simulation are reported in Figure 2.

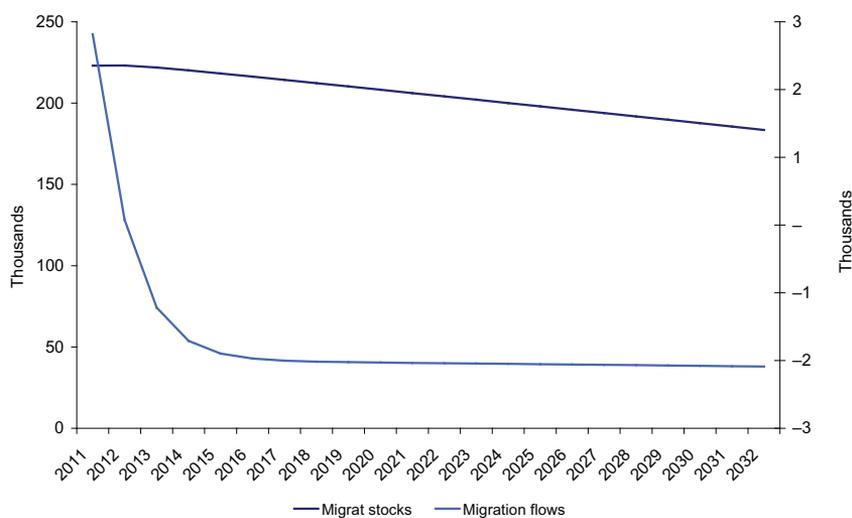
Figure 2: Croatian migration in Europe - optimistic scenario



Source: Own calculations

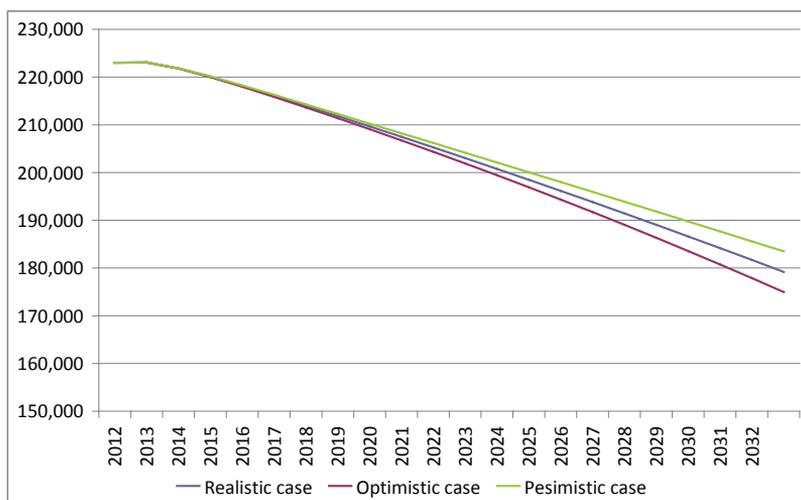
It can be seen that in the optimistic scenario the development of migration is similar to the realistic one: migration first decreases and then raises slightly after the introduction of the free movement of labour. However, the whole convergence process to the steady state is faster.

In the pessimistic scenario (Figure 3), the EU GDP per capita grows as fast as the Croatian GDP per capita for the whole simulated period. The employment rate in the EU is set about 2 % higher compared to the base case and then remains stable. The faster increase of migration from Croatia to the EU is observed. However, the increase of labour is missing, thus the final stock of migrants is not that pessimistic as one could have expected.

Figure 3: Croatian migration in Europe - Pessimistic scenario

Source: Own calculations

Sensitivity of the estimated results should be accounted for. The impact of GDP per capita both in Croatia and the EU on the stocks of Croatian residents living in Europe is rather small in the long run. Thus, there exists relatively low elasticity between the migrant stock and GDP per capita in Croatia, as well as between the income differential.

Figure 4: Extrapolation results for Croatian migration to the EU15 until 2032 (in millions)

Source: Own calculations

It becomes clear that the German GDP represents the strongest migration incentive. Croatian GDP growth is, on the other hand, irrelevant mostly because of the coefficients of the variables where the Croatian GDP is employed (Croatian GDP is presented also as a denominator of income difference variable). The EU employment rate seems to have greater impact on the migration stock. The % change in employment rate in the EU (used as a proxy for the German labour market conditions) affects the migration stock of Croats living in Europe stronger than a % other variables are taken from the base case. The next step is the extrapolation of the results for the whole EU15 (Figure 4).

In all scenarios a stock of some 220 thousand residents from Croatia is expected to live in EU15 in 2016. By 2020 the scenarios start to vary only slightly and by the 2032 we expect from 175 thousand to 185 thousand Croats to live in EU15, which is a very small figure in comparison with recent labour migrations of Romanians to Italy or Poles to the United Kingdom. Specific reasons for migration seem to be relatively stable and the extrapolation of Croatian migration into Germany to the EU15 gives a reasonable picture of the possible development until the 2032.

Conclusions and discussions

The main message of our paper is that the forthcoming Croatian EU accession is not going to increase Croatian labour migration in Europe. In the long term, the annual migration flow from Croatia into the EU 15 might reach 175-185 thousand people. The experience of former EU enlargements fully supports our results. Furthermore, a successful accession period with high growth and implementation of the reforms is actually leading to the elimination of the migration pressures. More precisely, the Croats that have strongest incentives to migrate had already migrated before the free movement of labour was introduced. The forthcoming Croatian EU accession would most probably keep migration flows manageable.

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