Economic aspects of Croatian emigration

[1] Fran Galetic, [2] Lorena Skuflic, [3] Tomislav Herceg
[1][2][3] Faculty of Economics and Business, University of Zagreb

Abstract— **Migrations are currently one of the most relevant topics in European economics, because they affect all European countries. Migration can be regarded as emigration or immigration, and in this paper we focus on emigration. Emigration has always been a problem for Croatian society, but in last decade it has grown rapidly. The entry in the European Union has made emigration from Croatia even more simple and popular, as many persons, mostly young and active population, move to another country of the EU with the hope of finding better life conditions, primarily regarding the employment. This is connected to conditions on the labor market in Croatia, and the high rate of unemployment. In this paper we analyze Croatian emigration from the economic aspect, and we try to detect the correlation between emigration and economic variables, such as unemployment. A special focus is on the unemployment of youth. We also present the trend model for number of persons emigrating from Croatia, and based on the estimated model, we predict future values.**

Key words: emigration, unemployment, labor market, Croatia .

I. INTRODUCTION

Emigration has always been a problem for Croatian society. The whole 20th century was marked by emigration from Croatia to other countries. The reasons were different, but dominant are two of them – political and economic reasons. While during the past there were many political reasons for emigrating, today almost all emigration is caused by economic reasons.

After gaining the independence in 1991, Croatia became a liberal economy and a parliamentary democracy, and politically there were no more reasons for emigrating. But there was the war which forced many people to emigrate, and after the war the emigration continued, but now for the economic reasons.

Economic motives for emigration are always connected to better life conditions, primarily because better labor conditions. This means better paid jobs in other countries. Unemployment is a big problem in Croatia, and many persons who cannot find a proper job in Croatia decide do move to another country. The most attractive countries are those with the highest salaries – Germany, Austria, Sweden and Ireland.

The main idea of this paper is to analyze economic motives for such an emigration. As already mentioned, the most important motive is better job and better salary, but for some people the motive is finding any job, because in Croatia they are unemployed for longer time. In this paper we connect unemployment and emigration, with special aspect on the unemployment of youth, which means young people under 25.

II. LITERATURE OVERVIEW

Kumpikaitė-Valiūnienė and Žičkutė [1] have analyzed the emigration situation after the socialist regime and revealed the main reasons for emigration in present-day Lithuania answering the question why "the West is still the best" remains important to modern Lithuania. The results revealed the main reasons for emigration according to push and pull factors related to economic issues, such as too low wages, differences between wages and income inequality, price policies and unemployment rates. However, non-economic reasons, particularly having relatives living abroad, influence the decision to migrate as well. A comparative analysis was made according to respondents' occupation in the home country, their age and gender. In addition, it was found that emigration has become a community value and norm in Lithuania.

Verkhohlyad and McLean [2] have made insight into the issue of emigration by establishing a relationship between emigration and psychic return of citizens to their human capital investment in the country. The article provides evidence for the fact that psychic return to human capital investment in the country has significant relationship with emigration level from this country. At the same time, of all variables that comprise this type of return to HC investment, only two variables were found to be statistically significant: national GDP and access to education in the country.

Briggs [3] has examined whether emigration of high-skilled labor creates a positive effect in the home country by generating multi-country joint patent relationships between home and destination country-pairs. Results suggest that emigration of high-skilled labor positively

impacts the prevalence of multi-country joint patent ownership when emigration originates from middle- and high-income countries. Support for such "brain gain" via knowledge sharing in innovation is absent when high-skilled labor emigrates from low-income countries.

Banik and Bhaumik [4] have analyzed the dual effect of demographic changes and emigration of young people on the economic growth of small Caribbean economies and the serious economic challenges arising therefrom. Rising incomes have had very significant demographic changes in Barbados and other small Caribbean economies while proximity to large developed economies have contributed to emigration. Together, these have caused capital outflows from the economies as well as simultaneous shortage of skilled workers and high rates of overall unemployment.

Backlund, Sjögren and Stage[5] aimed to present a theoretical underpinning for the fact that empirical studies have found an inverted-U curve relationship between emigration and per capita income, based on credit restrictions. Among the results it is shown that if age-dependent taxes are available, the presence of an inverted-U curve provides an incentive to tax young labor harder, but old labor less hard, than otherwise. Authors highlight the importance of credit restrictions and show that, if agents face a binding credit restriction when income is low, then the relationship between income and emigration may take the shape of the inverted-U curve actually observed empirically.

Clemens [6] criticizes the last decade of research on the effects of highskill emigration from developing countries, and proposes new directions for fruitful research. The axioms of the Lump of Learning model have shaped research priorities in this literature, but many of those axioms do not have a clear empirical basis. Future research proceeding from established facts would set different priorities, and would devote more attention to measuring the effects of migration on skilled migrant households, rigorously estimating human capital externalities, gathering microdata beyond censuses, and carefully considering optimal policy – among others.

Xu and Sylwester [7] have analyzed the effects of foreign direct investment on emigration. They have examined how do inflows of FDI into developing countries influence emigration to these same FDI source countries. FDI could raise wages and employment thereby reducing emigration but could also create information links that increase emigration. They showed that FDI increases emigration but only to the FDI source country. FDI from other countries lowers emigration. They also found little differences across education levels or gender.

Kim and Lee [8] have studied the effect of the high-skilled emigration rate on the growth rate of the source countries. They incorporated the foreign direct investment and the policy variables into the panel model and also their interactions with the high-skilled emigration rate, as they are related to the network externality that may be created by the high-skilled emigrants working abroad. They found the negative effect of the high-skilled emigration rate by itself and in its interaction with the foreign direct investment only in the dynamic model. However, they found positive coefficient for the interaction of the high-skilled emigration rate and the civil liberties index, which holds across the static and dynamic specifications. This implies that the effect of the high-skilled emigration rate on the growth rate of the source countries can be positive, and the extent is larger for countries with "poor' civil liberties.

Rakauskiene and Ranceva [9] have analyzed the strengths of emigration from Lithuania and highlight the drama of social and economic development of the country in this context. The article analyses the causes and consequences of emigration from Lithuania, its extent and structure, as well as problems – decrease in population number, illegal emigration, young people and women emigration, brain drain. The research shows that the fundamental reason of emigration is ineffective economic policy and the lack of self-realization opportunities in Lithuania.

III. DATA SOURCES AND METHODOLOGY

Collecting the real data about Croatian emigration is the biggest problem of such an analysis. This is due to the fact that there is no institution that collects the data about every person who emigrates from Croatia. There are official data from Croatian bureau of statistics (DZS), but these are much lower than the real ones. The reason for this is the fact that not every person who emigrates changes the residence. This results with the situation in which some persons officially live in Croatia, although they actually live abroad. The best evidence why these data are not real is following: according to Croatian bureau of statistics in 2015 there were 12 thousand people who emigrated from Croatia to Germany, and according to German bureau of statistics there were 50 thousand people who immigrated to Germany from Croatia.

Unfortunately this lack of the real data is a big disadvantage for any research. However, a research can be conducted using the official data from Croatian bureau of statistics. These are the data we are using in this paper, together with some data from Eurostat.

In this analysis we will use descriptive statistical methods to show trends in the number of persons in the process of migration, and to compare these numbers to some economic indicators. These indicators will include the unemployment rate, and especially the unemployment rate of youth. Younger population in Croatia has

especially big problem with employment, and this is the part of the population that is most willing to emigrate. We will analyze the correlation between the number of emigrated persons and mentioned rates of unemployment, and the analysis will also include the average net salary.

IV. CAUSES AND EFFECTS OF EMIGRATION

Migration can simply be defined as the process of moving the population from one geographical area to another. Migrations can be national or international, temporary or permanent, forced or voluntary. Forced migrations are usually caused by the war or natural disaster, and voluntary migrations are mainly caused by economic reasons. When discussing migration, we have to analyze two main factors. These are push factors and pull factors. Push factors are those that force the individual to move voluntarily, and in many cases, they are forced because the individual risk something if they stay. [10] Push factors may include unemployment, poverty, war, low safety etc. The main push factors are shown in Figure 1. Pull factors are those factors in the destination country that attract the individual or group to leave their home. [10] Those factors are known as place utility, which is the desirability of a place that attracts people. The most common pull factors are employment, safety and generally better life conditions. Main pull factors are also shown on Figure 1.

Figure 1: Push and pull factors
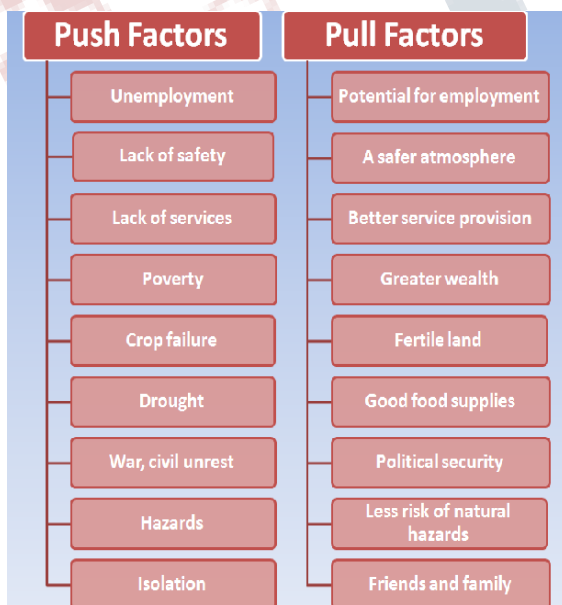
Source: [11]

Migrations have effects on both country of origin and country of destination. All these effects can be either positive or negative. These effects are shown in Table 1.

Table 1: Effects of emigration on the country of origin and the country of destination

	Country of origin	*Country of destination*
Positive	Money inflow	Increase of labor force
	Job opportunities	Cheaper labor
	Experience	Multiculturalism
Negative	Loss of labor force	Tradition
	Decrease of demand	Discrimination
	Family/friends	Job loss

Migration brings more labor force to the country of destination. Immigrants are often unskilled workers who are ready to work for minimum wage. Sometimes they are also highly skilled and talented workers who contribute to the increase of knowledge and the development of science. Immigrants also bring a part of their culture, which helps people learn about other ways of life in different parts of the world.

The last mentioned advantage can sometimes also be regarded as a disadvantage. Immigrants who cannot speak the language or do not behave like the locals often find themselves not accepted in their communities. Local people refuse to accept such immigrants in their community. Traditions can be negatively modified because of the diversity brought by the immigrants. As immigrants are ready to work for the minimum wage, some locals who have been working for higher wage can lose their jobs.

Discussing the effects on the country of origin, an advantage is the inflow of money which comes from abroad. Workers usually send some amount of earned money to their families and relatives. Other advantage is for people who have not emigrated. As the number of workers is lower, there are better job opportunities for those who have stayed, which leads to the fall of unemployment. Experience is also important, because people living abroad bring some innovations and trends to the country of origin.

Negative effects include the loss of labor force. The decrease in population decreases also the demand in the country of origin. And the social loss is also important – people who emigrate have less contact to their family members and friends who have stayed.

V. ANALYSIS OF CROATIAN EMIGRATION

During the history, Croatia has always had strong emigration. At the beginning of the 20th century, the main reasons for emigration were economic reasons. Most people emigrated from Croatia searching for opportunities to have better life in other countries. After the World War II, the main reasons for emigration were political reasons. After gaining the independence in 1991, there were no longer motives for political emigration, but the war forced many people to emigrate. After the war had ended in 1995, Croatia had many economic problems, which again forced people to emigrate.

One of the problems of contemporary emigration are the permits for living and working in another country. After Croatia joined European Union in 2013, the possibilities of emigrating enlarged. This is one of the reasons why each year more Croatians emigrate.

The analysis will be done for the 10-year period from 2006 to 2015. Figure 2 shows the number of persons who have emigrated from Croatia and immigrated to Croatia.

Figure 2: Number of persons emigrated from Croatia and immigrated to Croatia
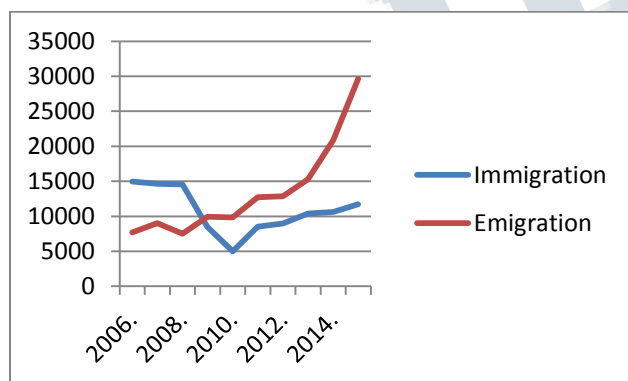
Source: Croatian bureau of statistics [12]

From this figure it is obvious that till 2008 Croatia was gaining population due to the face that more people were immigrating to Croatia then those who have emigrated to other countries. But starting from 2009 this trend changed. Each year there are more and more people who emigrate from Croatia mostly to other EU countries.

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Table 2 shows basic data used for the analysis.

Table 2: Basic data from 2006 to 2015 for Croatia

Year	Emigration	Unempl. rate	Youth unempl. rate	Average net salary
2006	7692	11,6	28,7	4603
2007	9002	9,9	25,6	4841
2008	7488	8,6	23,8	5178
2009	9940	9,2	25,3	5311
2010	9860	11,7	32,6	5343
2011	12699	13,7	36,9	5441
2012	12877	16,0	42,4	5478
2013	15262	17,3	48,7	5515
2014	20858	17,3	45,2	5507
2015	29651	16,3	41,5	5510

Source: Croatian bureau of statistics [12], Eurostat [13]

The analysis will be done using the data from the Table 2.

We suppose that there should be a positive correlation between the number of emigrants and unemployment, as unemployment is one of key reasons for emigrating in the hope of finding a job. Fist we will calculate the coefficient of correlation between the number of emigrated persons and the unemployment rate.

The coefficient of correlation between the number of emigrated persons and the unemployment rate is 0.7366. This shows a strong positive correlation, which means that higher unemployment rate encourages the emigration.

As the unemployment of youth is especially significant problem in Croatia, we expect to get also the strong positive correlation between the number of emigrated persons and the unemployment rate of youth.

This coefficient of correlation is 0.6803, which also shows a strong positive correlation between the number of emigrated persons and the unemployment rate of youth. Logically, one would expect here a higher value, but it is slightly lower than the last one. This proves that the unemployment does not influence young people more than the whole population to emigrate.

Now let's analyze the impact of the salary. For the purpose of this analysis, we will use the change in average net salary. Actually we want to show how the rise or fall in the salary affects the emigration. The coefficient of correlation between the number of emigrated persons and the change of average net salary is -0.6920, which proves that the lower rise of salaries also stimulates emigration.

After this analysis, based on the data, we can estimate the time trend for the number of persons emigrated from Croatia. In this analysis we have included 2016 as in the time of writing this paper the first results were given by DZS. For this estimation, we have calculated three different trend models: linear, exponential and polynomial. The results are following:

1. Linear trend: $E = 2546.2t + 337,5$ $R^2 = 0.78$
2. Exponential trend: $E = 5441.9e^{0,1522t}$ $R^2 = 0.90$
3. Polynomial trend: $E = 445.99t^2 - 2805.6t + 11933$ $R^2 = 0,97$

Comparing these three trend models, it is obvious that the third one, the polynomial trend has the largest R2 value, which means that this model is the most appropriate.

Figure 3: Polynomial trend estimated model
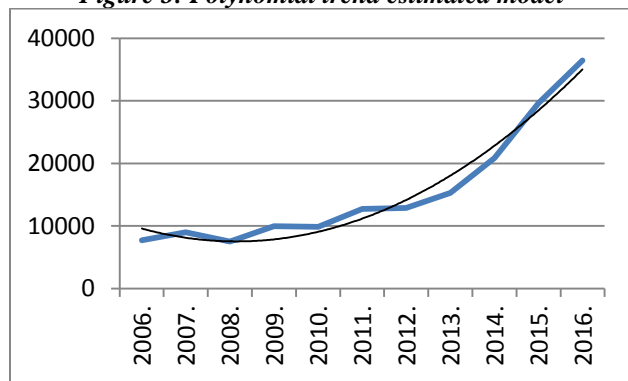
The trend that best fits the actual data is the polynomial trend. The estimated equation is

$$E = 445.99t^2 - 2805.6t + 11933$$

where E is the number of emigrated persons and t is the time period. Based on the estimated model, we can now estimate the future values for the number of persons emigrating from Croatia.

Table 3: Estimated values for the number of emigrated persons

Year	Emigration
2017	42488
2018	50833
2019	60069
2020	70197

According to this model, the number of emigrated persons from Croatia should rise each year. Here we should mention again that the data we have used are the official data from the Croatian bureau of statistics, and that the real data are unknown, but higher than these. Because of this fact, the real estimated numbers should also be higher than these one presented here. All this is the alert signal for Croatian government, because the population of Croatia if rapidly falling.

VI. CONCLUSION

In this paper we have shown the data about Croatian emigration in last eleven years, from 2006 to 2016. Based on this data, we have calculated the regression time model to predict the future values. This shows that in 2020 the number of people who will emigrate from Croatia annually will be higher than 70 thousands. The whole analysis was done using the only official data, those from the Croatian bureau of statistics. But as the reality shows that official data are lower than the real data, the situation is even worse. The lack of such data which would represent the real situation is the main limitation of this analysis.

We have made the analysis of correlation between the number of emigrated persons and other economic variables. There is a strong positive correlation between the number of emigrated persons and the unemployment rate. We also found a strong positive correlation between the number of emigrated persons and the unemployment rate of youth. Between the number of emigrated persons and the change in net salary, there is a negative correlation, which shows that more people emigrate with lower increase of salaries. For future research, it will be good to get the data about all persons who have emigrated from Croatia to other countries. This would also enable the analysis by the country of destination. An interesting analysis would be the one which would divide emigrated persons in different groups according to their education level and age.

REFERENCES

[1]   Vilmantė Kumpikaitė-Valiūnienė, Ineta Žičkutė, (2017) "Emigration after socialist regime in Lithuania: why the West is still the best?", Baltic Journal of Management, Vol. 12 Issue: 1, pp.86-110, https://doi.org/10.1108/BJM-02-2016-0053

[2]   Olga Verkhohlyad, Gary N. McLean, (2012) "Applying organizational commitment and human capital theories to emigration research", European Journal of Training and Development, Vol. 36 Issue: 2/3, pp.308-328, https://doi.org/10.1108/03090591211204760

[3]   Kristie Briggs, (2017) "Innovative partnerships resulting from high-skilled emigration", International

Journal of Development Issues, Vol. 16 Issue: 2, pp.161-173, https://doi.org/10.1108/IJDI-10-2016-0063

[4]   Arindam Banik, Pradip K. Bhaumik, (2006) "Aging population, emigration and growth in Barbados", International Journal of Social Economics, Vol. 33 Issue: 11,pp.781-788, https: //doi .org / 10. 1108 / 0306 8290 6107 05689

[5]   Kenneth Backlund, Tomas Sjögren, Jesper Stage, (2014) "Optimal tax and expenditure policy in the presence of emigration: Are credit restrictions important?", Indian Growth and Development Review, Vol. 7 Issue: 2, pp.98-117, https://doi.org/10.1108/IGDR-09-2012-0040

[6]   Michael A. Clemens, (2016) "Losing our minds? New research directions on skilled emigration and development", International Journal of Manpower, Vol. 37 Issue: 7, pp.1227-1248, https://doi.org/10.1108/IJM-07-2015-0112

[7]   Xu, Xu; Sylwester, Kevin (2016) "The effects of foreign direct investment on emigration: The roles of FDI source country, education, and gender", Economic Modelling, Vol. 55, pp.401-409

[8]   Kim, Jisong; Lee, Nah Youn (2016) "The Effect of High-Skilled Emigration, Foreign Direct Investment, and Policy on the Growth Rate of Source Countries: A Panel Analysis", East Asian Economic Review; Sejong 20.2, pp.229-275

[9]   Ona Grazina Rakauskiene; Ranceva, Olga (2012) "Strengths of Emigration from Lithuania: Demographic, Social and Economic Consequences", Intelektine Ekonomika; Vilnius 6.2, pp.245-257

[10]   http://eschooltoday.com/migration/the-pull-and-push-factors-of-migration.html

[11]   http:// www. cool geography .co.uk /GCSE /AQA /Population / Migration / Migration.htm

[12]   Croatian bureau of statistics, www.dzs.hr

[13]   Eurostat, www.eurostat.eu