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The effect of emigration on unemployment: Evidence from the Central and Eastern European EU member states

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Abstract

This paper contributes to the scant empirical literature on the effects of emigration on source countries' labour markets. Using a novel dataset by Brücker et al. (2009), we find that emigration from the Central and Eastern European (CEE) members of EU during the period 2000 to 2007 has contributed significantly to the decline in unemployment in these countries.

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1. Introduction

In May 2004, eight Central and Eastern European countries[1] (EU-8) joined the European Union. Since then almost all of these economies have experienced improved labour market conditions. Specifically, unemployment rates decreased by as much as 50 per cent, in some cases by 10 percentage points (see Fig. 1). At the same time, emigration in the region has increased. During 2000-2007 the number of migrants from EU-8 countries in EU-15 increased by 1.2 million people. In some countries emigrants account for a significant proportion of the labour force: in Lithuania the share of emigrants residing in EU-15 countries reached 5.6 per cent of its domestic labour force in 2007. In Poland, Estonia, and Slovakia the corresponding emigration shares were 4.8 per cent, 4 per cent, and 3.4 per cent respectively.[2] These developments suggest that emigration may have contributed to the decline in unemployment observed in these new member states. In this paper we analyse whether part of the decline in unemployment in these countries is explained by the increase in emigration.

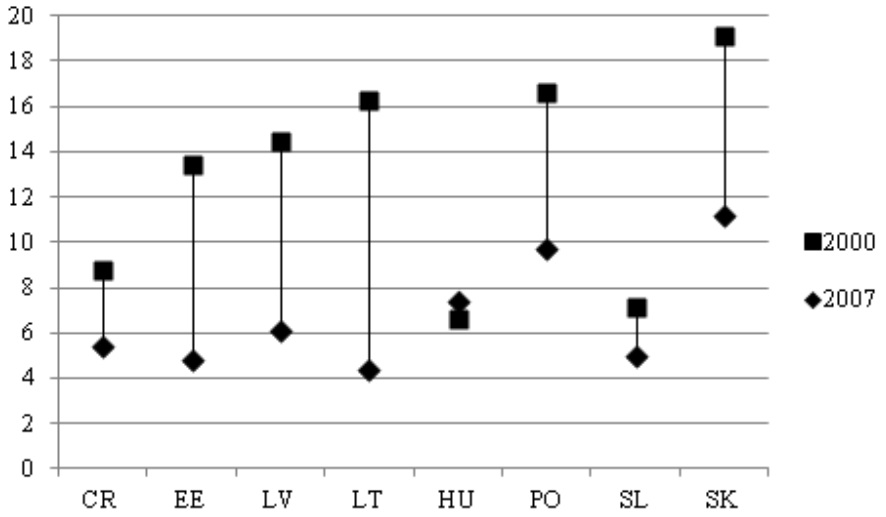

Figure 1. Unemployment rates in EU-8 countries during 2000-2007, %
Source: Eurostat

There are a large number of studies examining the effects of immigration on receiving countries' labour markets (for a detailed review of the literature see e.g. Blanchflower et al., 2007; Bodvarsson and Van den Berg, 2009). Their results show that immigrants have little, if any, effect on receiving countries' labour markets. A meta-analysis performed by Longhi et al. (2006) showed that on average a 1 per cent increase in the number of immigrants induces a fall in natives' employment by just 0.02 per cent. In contrast, there are very few studies examining the effects of emigration on source countries' labour markets. Moreover, this literature is limited to exploring wage effects of emigration, mostly focusing on Mexico-US mobility (see e.g. Mishra, 2007; Hanson, 2007). To our knowledge only two papers attempt to measure the unemployment effect of emigration on source countries, and then indirectly by using simulation models (Barrellet al., 2010; Baas et al., 2010). The lack of econometric work appears to be due to a deficit of data, since in most countries emigrants are not registered.

[1] These new member states are Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovenia, and Slovakia.
[2] The numbers are calculated from Brücker et al. (2009) and the labour force data taken from the Eurostat database.

However, using a novel data set by Brücker et al. (2009) we can estimate the effect on unemployment in source countries of emigration for the EU-countries.

2. How emigration can affect unemployment in source countries

An important potential causal channel from emigration on unemployment works through changes in the composition of the labour force.[3] If the emigrant group contains a large share of the population with higher than average risks of unemployment in their source country, the overall unemployment rate must decrease. In general, groups with a higher unemployment risk also have a higher incentive to emigrate. Since young people typically face a higher unemployment risk than older workers, there should be self-selection into emigration from the young. In addition, the young are less attached than the old to the source country by family and property. Indeed, Baas et al. (2010) document that the emigrants from EU-8 are younger than the native population. A potentially countervailing factor is that the emigrants may be more skilled than the population in their source country. According to Baas et al. (2010), emigrants belong to the medium-skill group. While the skill level in general reduces unemployment risks, the skills measured are education levels and do not reflect work experience. Thus the higher skill level among the young may not directly translate into lower risk of unemployment. Blanchflower et al. (2007) report that emigrants work in occupations lower than their skill level would suggest compared to natives. The authors suggest that language may be a factor, but the lack of experience from youth may also play a role. In their source country this may have resulted in unemployment, while in the receiving country the lack of experience is reflected in a lower wage.

3. Model specification

We estimate the effect of emigration on unemployment in the EU 8 using a panel data model with fixed country effects and fixed time effects,

$$\ln(\mathrm{UNEMPL}_{it}) = \beta \cdot \ln(\mathrm{EMIGR}_{it}) + \gamma \cdot \ln(\mathrm{GDP}_{it}) + \phi_i + \phi_t + \varepsilon_{it} \quad (1)$$

where $UNEMPL_{it}$ denotes the unemployment rate of country i at time t; $EMIGR_{it}$ is the ratio of the number of migrants in EU-15 in relation to the national labour force; GDP_{it} is the level of real GDP per capita; φ_i is a country-specific fixed effect that controls for differences in labour market institutions that are constant across time; φ_t is a time fixed effect that controls for common time shocks affecting all countries at the same time; and ε_{it} is an error term. The log-linear specification implies that β and γ are elasticities.

4. Data

Data on migration is collected from Brücker et al. (2009) who estimate the emigration stocks for the EU-8 countries from 2000 to 2007. The data covers the stocks of immigrants from these countries in EU-15. Because Western Europe is the main destination for EU-8 migrants, especially after the EU enlargement, the collected immigration data should closely correspond to full emigration stocks. Unemployment and real GDP data are collected from Eurostat. The emigration and unemployment stocks were transformed to shares of the labour force in the country of origin to be comparable across countries.

[3] Cf. Blanchflower et al (2007) for an analogous discussion of immigration effects on long-run unemployment.

The variables have been tested for non-stationarity and cointegration using the Levin, Lin, and Chu panel unit root test and the Pedroni cointegration test (within-group). The results suggest that the unemployment, emigration and GDP variables are cointegrated. [4,5]

5. Results

The estimates of β, the effect of emigration on unemployment, are presented in the Table I. A potential econometric concern is reverse causality from unemployment to emigration. If higher unemployment leads to increased emigration, the negative effect of emigration on unemployment would be underestimated. A common approach in the literature is to use lagged migration as an instrument for current migration (see i.e. Altonji and Card, 1991, and Mishra, 2007). The instrument is justified by the fact that social networks between previous and current migrants are known to be important determinants of migration, and therefore there is a strong correlation between past and current migration. The validity of lagged emigration as the instrument is, however, debatable. Past emigration may have a direct effect on current unemployment due to lags in labour market responses to economic shocks. But, given the limited dataset we have limited the analysis to only include a one-year lag of emigration as an internal instrument.

Column 1 of Table I shows the OLS estimates for the model as specified in (1). Column 2 presents the OLS estimates when GDP has been excluded from the model and Column 3 presents the OLS results when GDP and the fixed effects have been excluded from the model. The parameter from the IV estimator for the full model is presented in Column 4.

Table I. Effect of emigration on unemployment in EU-8 countries during 2000-2007

	Model specification			
Variable	OLS	OLS	OLS	IV
	(with fixed effects)	*(with fixed effects)*	*(without fixed effects)*	*(with fixed effects)*
$EMIGR_{it}$	**–0.34*****	**–0.64*****	**–0.17**	**–0.56*****
(t-Statistic)	(–3.78)	(–5.37)	(–1.51)	(–3.68)
GDP_{it}	–2.50***	–	–	–2.37***
(t-Statistic)	(–7.41)			(–4.95)
R^2	0.96	0.90	0.03	0.95

Notes: ***denotes statistical significance at 1% level, t-statistics is presented below the parameter estimates within parenthesis.

The specification in the first column reports the OLS regression results. The coefficient is negative (–0.34), suggesting that emigration has a negative effect on unemployment, and is mainly driven by factors that are unrelated to labour market conditions in the source countries. The parameter estimate for emigration is more negative when GDP is excluded from the model – the parameter estimate is -0.64. This result indicates that GDP growth has been an important factor explaining the reduction in unemployment in the EU-8. The parameter

[4] These results are available upon request.

[5] Using the level of GDP rather than GDP growth follows from the non-stationarity and cointegration tests. We interpret the cointegration between the unemployment and the level of GDP between 2000 and 2007 as capturing the transition dynamics connected with structural changes in the economy, such as the reallocation of labour across sectors.

estimate for emigration is close to zero and insignificant (-0.17), when GDP and the fixed effects are excluded. However, excluding GDP and the fixed effects may cause an omitted bias problem.

The IV parameter estimate for the full model is slightly more negative than the OLS estimate: -0.56 compared to -0.34 for the OLS estimator. Due to endogeneity the OLS estimate are likely to be biased towards zero, whereby the true effect of emigration is likely to be larger on the source country's labour markets than what the OLS parameter estimates indicate. The estimates using internal instrumental variables indicate that this is the case and that emigration does improve source countries labour market conditions.

Our results are in line with the existing empirical literature on the effects of emigration on source countries' labour market outcomes in terms of wages. For example, Mishra (2007) finds that wages in Mexico rise by 4 per cent following a 10 per cent increase in emigration. Similarly, Elsner (2013) reports that a 10 per cent increase in emigration in Lithuania increases wages by as much as 6.7 per cent. The inference in the latter paper is based on the fact that most of the variation in emigration was caused by the EU enlargement in 2004, an event exogenous to the individual accession country (as is the case in present study). This may explain the higher estimates in Elsner (2007) compared to Mishra (2007).

6. Conclusion

We have analysed the impact of emigration on source countries' unemployment using data from the eight Central and Eastern European countries, which joined the EU in 2004. The results suggest that emigration has a strong negative effect on unemployment, with the unemployment rate decreasing by at least 3.4 per cent when the emigration rate increases by 10 per cent. This effect is a long-run effect, which can be explained by the fact that emigrants are younger than the native population with higher risks of unemployment.

Given the minor effect of immigration on host countries' unemployment found in the literature (including the studies examining the East-West European migration), this paper's results indicate that the opening up of labour markets following the enlargement of EU in 2004 mainly has had positive effects.

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