The impact of Eastern European immigration to UK trade*

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Abstract

Recently, the European Union [EU] expanded to include ten Central and Eastern European countries [CEEC]. The United Kingdom [UK] is gradually opening its labour markets to countries that have joined the EU. This paper examines some of the causes and consequences of growing immigration from CEEC and has policy implications.

In this paper we investigate whether there is evidence of positive linkages between immigration and trade volumes. We specifically examine the impact of the presence of immigrants from some CEEC in the UK on bilateral trade flows. An augmented gravity model is estimated using a panel data set for the period 1991 – 2001. Results show that immigration had a positive impact on the volume of UK's bilateral imports, but no effect on bilateral exports.

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The impact of Eastern European immigration to trade in the UK

I. Introduction

The impact of Eastern European immigration to trade and general welfare has once more become the centre-piece of attention in the socio-economic debate in Europe. Recently, the European Union [EU] has expanded to include ten Central and Eastern European countries [CEEC]. The United Kingdom [UK] is gradually opening its labour markets to countries that have joined the EU. More than 427,000 Eastern Europeans have come to work in Britain since the expansion of the European Union in May 2004, which is a lot larger than the official predictions. These figures have fuelled demand for an end to Britain's "open-door" immigration policy.

Research commissioned by the UK Government had previously estimated that annual applications from the new accession countries would be no more than 5,000 to 13,000. Britain was alone among the major European economies in declining to adopt restrictions when ten countries - Poland, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Slovakia, Slovenia, Cyprus and Malta - joined the EU in 2004. The influx, led by Poles and Hungarians, has prompted reactions to decrease immigration when the EU enlarges again to absorb Romania and Bulgaria next year.

There are several policy implications from the increasing Eastern European (EE) immigration in the UK. In this paper we will try to investigate whether there is any evidence of positive linkages between UK immigration and UK trade volumes. Previous studies have found positive effects on trade between immigrants' host and home countries. These findings are important because they show an overall economic impact of immigrants on host and home countries. Specifically in this study, we will

examine if EE immigrants' links to their home countries enhance bilateral trade flows between origin countries and the UK. This issue is important in assessing the present and the future economic consequences of the unprecedented numbers of immigrants who came into UK, particularly after the enlargement of EU including eastern European countries, and has some relevant policy implications.

II. Eastern European Countries

At the outset, it is useful to delineate some common futures of EE countries. In this section we will mention some common patterns concerning their trade policy and migration trends.

Migration

Since the beginning of 1990s, CEECs experienced extraordinary shift from communist regimes towards market economies and democratic states. An important part of these changes is transition in migratory behaviour. Prior to 1990 migration was severely limited in all countries of the region. Since the early 1990s the situation has changed dramatically. The region witnessed a huge increase in complexity of migration forms – from labour mobility through transit migration to forced migration of asylum seekers and refugees. In many countries there was a fundamental shift from long-term migration to short-term mobility and the other way around.

In the communist period, migration in the EE region has been characterised by the following pattern: The majority of migrants moved to the West and only few returns were recorded. Many political and economic factors were decisive in explaining this

type of migratory phenomena. Simultaneously, the western European labour market easily absorbed migrants, particularly the relatively highly educated ones. However since 1989, some Western European countries gradually closed the doors to the people arriving from the CEECs .

The recent migration trends from the CEECs are characterised by the following factors:

Economic factors: These factors are perceived as basic motives of emigration from CEECs. It is known that the economic situation of CEECs has changed dramatically since 1990. Before 1990, the CEECs had a lot in common, including the predominance of public sector in production of goods and services and an inclination to close doors to the non-socialist world. Compared to western countries, labour force participation rates were very high, whereas the labour productivity and wages very low. Also unemployment was virtually little. Transition brought market instability, loss of GDP and huge unemployment. The voluntary migrants are mainly driven by a desire to improve their standards of living and avoid the economic deprivation in their countries.

Political factors: For all CEECs, the major political factor affecting migration flows since 1989 has been a dramatic liberalisation of migration rules in Eastern Europe. The process includes the abolition of exit visas, removal of restriction on the issue of passports, modification of nationality laws, abolition of entry visas for many countries and introduction of a legal basis for foreign employees. These reforms have been matched with many changes in migration policies in western countries and as a result we witnessed a large acceleration in the movement of people.

- Trade

CEECs are characterised by comparative advantage in labour-intensive industries as well as in resource-intensive sectors and by disadvantage in capital-intensive sectors.

CEECs tend to be specialised in a limited number of industries, and are generally advantaged in resource – intensive sectors (basic metals, wood, and coke and refined petroleum products) as well as in labour-intensive industries (wearing apparel). In contrast, they are disadvantaged in capital-intensive sectors (machinery and equipment, motors vehicles, chemicals), as well as in textiles.

More analytically, a strong specialisation in a limited number of industries can be found for Slovakia and Bulgaria, and to a lesser extent Romania (who all show up similar strengths in basic metals and wearing apparel); as well as for Latvia and Estonia (whose main strengths are in coke, refined petroleum products and wood). Lithuania is somewhere in-between these two groups of countries.

A similarity in their specification profile can also be found between Poland and Slovenia (strengths in wearing apparel; basic metals; wood; and other manufacturing). However, two countries clearly deviate from the view of the general strengths of CEECs: Hungary and the Czech Republic. The Czech Republic is a case apart concerning the number of its industries with a comparative advantage: in addition to the traditional industries (wearing apparel, basic metals, wood), it also has comparative advantages in fabricated metal products, in other non-metallic mineral products, and in other manufacturing. But the difference is more remarkable for

Hungary, which has also comparative advantages in industries for which most other CEECs are disadvantaged: this is the case of food and beverages, and, more strikingly, in motor vehicles, due to changes which occurred between 1993 – 1996.

Even the candidates which have been selected for starting their accession negotiations in March 1998 (Estonia, Hungary, Czech Republic, Poland, Slovenia) exhibit quite different profiles, as Polish trade remains characterised by a relatively strong sectoral complementarity compared to the Czech Republic. The two Balkan countries differ strongly as the range of comparative advantage. Romania's trade is close to that of Baltic States whereas Bulgaria's case is more similar to that of Poland.

III. Trade Migration Link and gravity models

Although many factors may have contributed to contemporaneous movements in trade and immigration, there is evidence from previous studies that immigrants may play a role in influencing bilateral trade flows. Firstly, immigrants tend to bring with them a preference for home-country products. This will result in a direct increase in the host country's imports of these goods; Secondly, immigrants bring with them foreign market information and contacts that can lower transactions costs of trade. This second mechanism suggests a broader influence and predicts a direct increase in both export and import flows between the host and home countries resulting from lower transactions or trade costs.

The relationship between immigration and trade has been investigated relatively recently. Gould (1994), using a gravity model and a panel data set of forty-seven U.S. partners, finds that trade is positively influenced by immigration, with greatest effects on exports. Head and Ries (1998), using Canadian trade data with 136 partners, also find that immigration has a significant positive relation to bilateral trade; a 10 per cent increase in immigrants led to a 1 per cent increase in exports and a 3 per cent increase in imports. Dunlevy and Hutchinson (1999) also uncover evidence of a pro-trade impact of immigration on U.S. imports in the late nineteenth and early twentieth centuries. Girma and Yu (2002), using an augmented gravity model, study bilateral trade between the UK and 48 trading partners. They find that immigration from non-Commonwealth countries has a significant export-enhancing effect. By contrast, immigration from Commonwealth countries is found to have no substantial impact on exports. They propose that since social and political institutions in Commonwealth countries are similar to those of the UK given the earlier colonial connections, immigrants from former colonies do not bring information that substantially reduces the transaction cost of bilateral trade. Dunlevy and Hutchinson (2001) test the hypothesis that immigrants generate beneficial externalities in their host countries to expand foreign trade. Their data examines U.S exports to 17 European countries at 5-year intervals. Migrant stock effects were found to be positive and significant for trade as a whole but proportionately greater for particular regional groupings of countries that reflect the historical pattern of immigration to the US. Moreover, the impact of the stock of immigrants on exports dissipated earlier than it did on imports. Piperakis, Milner and Wright (2003) investigate the influence of migration into Greece on the volumes of Greece's bilateral trade using a gravity modelling approach. An augmented gravity model is estimated using a panel data set for the period 1981 –

1991. The results show that immigration had a positive impact on the volume of Greece's bilateral exports, but no effect on its bilateral imports.

To analyse the link between immigration and trade, we use a gravity equation, augmented with migration variables. The gravity equation, a standard method of testing this type of studies, has long been recognised for its consistent empirical success in explaining many different types of flows, such as migration, commuting, tourism, and commodity shipping.

Despite the gravity equation's empirical success in explaining trade flows, the model has been criticised because it first appeared in the empirical literature without a serious of theoretical justification. After Tinbergen (1962) and Poyhonen (1963), who conducted the first econometric studies of trade flows that based on the gravity equation, Anderson (1979) made a more formal attempt to derive the gravity equation from models that assumed product differentiation. Bergstrand (1985), Helpman (1987), Deardorff (1984), Hummels and Levinsohn (1995), Helpman. Deardorff (1995), derived gravity equations from a variety of trade models. Even a simple gravity equation can be derived from standard trade theories. Gravity models have been extremely successful empirically because of its ability to incorporate most of the empirical phenomena and direct applicability to intra-intustry trade.

IV. Model Specification and Data

To analyse the link between immigration and trade, we use a gravity equation, augmented with migration variables. The model is estimated taking into account 70

countries over a period of 10 years (from 1991 – 2001). In order to show more clearly the effect of Eastern European migration to UK trade we estimate two versions of the model. First we test the effect of the total effect of European migration to UK trade. Then we include in the model intercept and slope dummies for the group of Eastern European countries[3] and compare the results. The general functional form adopted is[4]:

$$y_{it} = \gamma_0 M_{it} + \beta_0 GDP_{it} + \beta_1 GDPC_{it} + \beta_2 Dist_{it} + D_t + \varepsilon_{it} \quad [1]$$

where,

y_{it} = Great Britain's exports to (or imports from) country *i* at time *t*

M_{it} = Immigrant stock originating from country *i* at time *t* GDP_{it} = GDP of country *i* at time *t*

$GDPC_{it}$ = GDP per capita of country *i* at time *t*

$Dist_{it}$ = Great Circle distance from capital of country i to Great Britain

GDP is a measure of the partner country's 'economic mass'; per capita GDP accounts for the wealth effect of the trading partner, with wealthier countries being hypothesized to be more open to international trade. In the relevant literature, there are two standard ways of measuring the size of countries in the gravity model: GDP or population. Mathematically, it is precisely equivalent, whether we express the explanatory variables as GDP and GDP per capita, or as GDP and population. Although the estimation is either way equivalent mathematically, the reader may be led to different interpretations. In the first case one is usefully led to think about how

[3] Former Czechoslovakia (Czech Republic & Slovakia), Hungary, Romania, Former USSR (Estonia, Latvia, Lithuania, Russia, Ukraine, Other former USSR), Yugoslavia (Croatia, Slovenia, Yugoslavia, Other former Yugoslavia)

[4] All variables are in real terms and in natural logarithms.

a country's trade depends on its stage of development and it's true that industrialised countries trade more than less developed countries. We consider that is a better way to measure country size. *Dist* is the distance to proxies frictions to trade associated with geographical distance between trading partners. Time dummies (D_t) capture other macroeconomic and trade policy factors that impact on trade.

Trade data are taken from IMF direction of trade statistics for the period 1991 – 2001, while GDP and GDP per capita data are from World Bank, World Development Indicators. The distance measures are Great Circle distance between London and the capital city of the partner country.

Information on the annual stock of immigrants by country of origin is obtained by Home Office, UK for the years 1991 – 2001. Note that the quality of data on international migration may cause some problems for all countries. The inconsistencies or incompleteness can be a result of different definitions applied, varying reporting mechanisms or other reasons. In case of EE countries, the problem is much more evident. In some countries, mainly former Soviet Union countries, we observe a huge contrast between immigration data from different sources. In fact, migration statistics and analyses concerning EE countries seem to be currently overwhelmed with confused and often misleading concepts, definitions and data sources. One of the reasons is that the concepts have been inherited from the pre-transition period and reflect rather the reality of very limited and strictly controlled flows than migratory phenomena as observed during the transition period (Okolski, 2004a). Because there is lack of continuous immigration data sets, we use as annual

stock of immigrants the annual grants of settlement by nationality published from Home Office, UK, that is very reliable source of data.

V. Regression analysis and key findings

The results of the basic gravity equation for imports and exports, for the period 1991-2001, are given in Table 1, columns 1 and 2. The coefficients on GDP and GDP per capita have the expected positive signs and are statistically significant at the 1% level. The distance coefficient - although expected to be negative since it is a proxy of all trade cost sources- turns out to be positive for imports. Traditionally, the gravity model uses distance to model transport costs. However, Bougheas et al (1999) showed that transport costs are a function not only of distance but also of public infrastructure. They augmented the gravity model by introducing additional infrastructure variables (stock of public capital and length of motorway network). Their model predicts a positive relationship between the level of infrastructure and the volume of trade, which is supported by the data from European countries.

The coefficients on migration, the variable of primary interest, are statistically significant for both imports and exports. The results show that a 10% increase in the immigrant stock in 1991 had an effect of increasing UK imports by about 2% and exports by about 1.6%. These results are in accord with previous studies [Gould (1994), Head, K. and J. Ries (1998), Girma, S and Yu, Z (2002), Piperakis, Milner and Wright (2003)] as they support the hypothesis that the trade–immigration linkage is driven by the new information brought by immigrants about their home countries' market. This information reduces the transaction or trade costs of bilateral trade.

Table 1: Gravity Model Estimates of Imports and Exports for UK

(Panel data OLS, 1991-2001)

	1	2	3	4
	Imports	Exports	Imports	Exports
GDP	0.561 (19.98)**	0.452 (22.19)**	0.707 (12.00)**	0.353 (4.76)**
GDPC	0.332 (9.87)**	0.231 (8.35)**	0.550 (-7.16)**	-0.572 (-6.07)**
Dist	0.854 (1.46)	-0.021 (-0.44)	-0.824 (-6.65)**	-1.497 (-8.51)**
M	0.225 (7.37)**	0.164 (5.73)**	0.822 (1.04)	0.265 (3.02)**
East-EU			-11.349 (-6.03)**	-19.186 (-6.63)**
East-EU GDP*			-0.161 (-2.45)**	0.097 (1.27)
East-EU GDPC*			0.960 (11.31)**	0.868 (8.91)**
*East-EU * Dist*			0.856 (5.77)**	1.391 (7.39)**
*East-EU * M*			0.206 (2.45)**	-0.058 (0.65)
Constant	1.205 (1.84)	6.080 (11.3)**	12.432 (7.23)**	25.291 (8.96)**
Observations	693	693	693	693
R-squared	0.66	0.63	0.70	0.70

Notes:
1. Robust t-statistics in parentheses
2. * significant at 5%; ** significant at 1%

Table 2: Gravity Model Estimates of Imports and Exports for UK
(Panel data OLS, 1991-2001) Dynamic Model

	1	2	3	4
	Imports	Exports	Imports	Exports
Y_{t-1}	0.919	0.854	0.902	0.811
	(49.07)**	(41.92)**	(43.92)**	(26.33)**
GDP	0.055	0.078	- 0.037	0.026
	(3.69)**	(5.07)**	(0.61)	(0.31)
GDPC	0.030	0.026	- 0.072	- 0.128
	(1.89)	(1.65)	(-1.09)	(- 1.08)
Dist	-0.011	-0.031	- 0.186	-0.37
	(-0.45)	(-1.34)	(-1.48)**	(-1.56)
M	0.021	0.013	- 0.020	0.028
	(1.39)	(0.91)	(- 0.27)	(0.29)
East-EU			-3.459	- 5.783
			(-1.81)	(- 1.51)
East-EU GDP*			0.025	0.070
			(0.42)	(0.76)
East-EU GDPC*			0.121	0.181
			(1.72)	(1.44)
*East-EU * Dist*			0.192	0.339
			(1.48)	(1.43)
*East-EU * M*			0.056	0.003
			(0.72)	(0.04)
Constant	-0.131	0.969	3.094	6.816
	(-0.46)	(3.11)**	(1.65)	(1.74)
Observations	631	631	631	631
R-squared	0.94	0.90	0.94	0.90

Notes:
1. Robust t-statistics in parentheses
2. * significant at 5%; ** significant at 1%

In Table 1, columns 3 and 4 show the results for the 2nd model that includes the intercept and slope dummies, for the group of immigrants from Eastern European countries.

The results show that the dummy for Eastern European countries is significant and negative both for import and exports. This means that imports and exports from Eastern European countries in UK are lower than expected. However, the slope dummy (East-EU*M) that presents the combined effect, interaction term of EE migration and EE countries, shows that EE migration is significant and positive for UK imports. This import side effect indicates that 10% increase of EE immigrants increase UK imports from EE countries by 20% while EE migration doesn't affect exports, as the slope dummy is insignificant for exports.

Further we find a significant negative coefficient on the interaction (EE * GDP). A 10% GDP reduction of EE country increases slightly UK imports by 1.6%. However the interaction term (EE * GDPC) is significant with highly positive coefficient both for imports and exports. The slope dummy (Distance * EE migration) is significant with positive coefficient most probably for the reasons we have explained above.

In Table 2 we have presented the results for the dynamic version of model. The results for more of the variables it seems that they fall short of statistical significance. This is consistent with Harris and Matyas's (1998) observation that the introduction of dynamics has the effect of wiping out the significance of most structural parameters of gravity equations.

VI. Conclusion

In this study we have examined the impact of immigration from Eastern European countries on the volume of UK's bilateral trade flows. This issue is important in assessing the present and the future economic consequences of growing immigration from Eastern European countries particularly after the enlargement of European Union. By using an augmented gravity model with immigration variables, we confirm the results of the previous studies about the positive link between immigration and trade, but only for imports. It appears that preference of immigrants for home country products is strong enough to influence aggregate imports. This confirms the pro-trade effect of immigration found in Gould (1994), Head and Ries (1998), and Dunlevy and Hutchinson (1999).

On the other hand we failed to establish any export-enhancing effect from EE countries. EE immigrant's information and links to home countries appear to have no significant effect on UK exports. Thus the econometric evidence does not support the hypothesis that the effect of the immigrant link is universal, where immigrants enhance exports through personal contacts with their home countries.

There are still several dimensions of further work to be explored. One obvious issue could be to investigate the immigrant link effect by considering trade flows by commodity group. Further we could extend the analysis of this paper to other Western European countries to assess the robustness of our findings.

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