

EXTENDING THE EU SINGLE MARKET EASTWARDS: SECTORAL TRADE AND REAL WAGE EFFECTS¹

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Abstract

We predict the sectoral trade and real wage impact of free skilled migration in the enlarged EU, whose members we group as North (wealthiest EU), South (Greece, Portugal and Spain) and East (acceding Central and Eastern European countries). The North consolidates its current hub position by attracting more firms and skilled workers. Thus its net exports of high scale economy, skill-intensive goods increase and so do overall real wages. The South retains competitiveness in low scale economies, low skill-intensity sectors and sees an overall reduction in real wages. The East has a marginal gain in trade terms but suffers a real wage loss, albeit lower than that of the South.

Keywords: EU enlargement, gravity model, human capital, labour demand, migration, wage equation

JEL: F1, F15, F22, J31, L6

1 Introduction

It is received wisdom that free migration will damage advanced economies. One of the great fears when the current enlargement of the EU was being negotiated was that there would be large flows of migrant workers pouring into the Northern European States. As a result, restrictions were placed on the movement of Eastern workers. However, after the enlargement such restrictions will progressively come to an end under the guidelines defined by the European Commission (2001),⁴ starting with the general non-application of the Single Market requirement of free movement of labour during the first two post-enlargement years. This can be contrasted with Mexico's entry into NAFTA where migration into other member states was not permitted. One of the more feared impacts of this inward migration is the perceived reduction of the real wage paid to Northern European workers and a consequent reduction in living standards. This study focuses on two interrelated aspects of the migration problem: what will be the trade and also the real wage impact, at both the sectoral and country group level, of allowing free migration within an enlarged trading bloc.

In particular, we think of the enlarged EU as constituted of three country groups – EU-North⁵ (N), EU-South⁶ (S) and EU-East⁷ (E) – that differ in the skill endowment as well as both spatial and non-spatial trade costs. The latter are compressed to zero when E integrates with N and S, but the former persist and give rise to a hub effect.⁸ In this set-up, N is a hub and has a higher skill endowment, this is, more skilled workers per capita, than the two peripheries S and E. Following the EU's Eastern enlargement, the different locational and endowment advantages of the three country groups considered can be expected to influence the location of sectors with different degrees of economies of scale and skill intensity, this is, different skilled/unskilled labour ratio. Given a matrix of migration flows, the location of different sectors will in turn determine the sectoral net exports and real wages of each country group. Whereas the demand for

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⁴ Updated information on this topic is available online at <http://www.europa.eu.int/comm/enlargement/negotiations/chapters/chap2/>.

⁵ We define EU-North as the group formed by all EU-15 countries except Greece, Portugal and Spain.

⁶ We define EU-South as the group formed by Greece, Portugal and Spain.

⁷ In the paper we refer to CEECs, or alternatively to EU-East, as being the group formed by Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia, and, on the assumption that they will effectively join the EU, Bulgaria and Romania.

⁸ The hub effect was introduced by Krugman (1993) in a three country model: a country is said to be a hub if the spatial trade costs between itself and each of the two other countries are lower than the spatial trade costs between the latter two.

labour depends on the location of firms, the supply of labour is given by initial endowments in the absence of migration and also by changes in those endowments induced by migration. Thus two possibilities arise. If supply effects are more important, real wages decrease with migration. On the contrary, if demand effects are more important, real wages increase with migration.

We use a two-step methodology that has been widely applied to EU-CEECs trade by, among others, Havrylyshyn and Pritchett (1991), Hamilton and Winters (1992), Winters and Wang (1992), Baldwin (1994), Winters and Wang (1994), Gros and Gonciarz (1996), Festoc (1997), Schumacher (1997), Vittas and Mauro (1997), Maurel and Cheikbossian (1998), Fontagne et al. (1999), Buch and Piazzolo (2000), Nilsson (2000). First, we estimate two sectoral equations, a gravity model of trade flows and a labour demand model of real wages, that account for different skilled/unskilled labour ratios and different spatial and non-spatial trade costs. Second, we use the estimated coefficients to predict the potential trade flows and real wages of N, E and S in sectors with different degrees of economies of scale and skill-intensity under the migration and the no-migration scenarios. The difference between the two scenarios is the migration effect. There is a range of possible assumptions regarding the intensity of migration flows and the share of skilled migrants. In this paper we have conducted the exercise using the projections for East-West migration provided by Boeri and Brucker (2000) and Weise et al. (2001), and have made the extreme assumption that all migrants are skilled. This assumption provides an upper bound for losses/gains of human capital in the East/West.

The traditional two-step methodology is extended and improved in several ways. First, we use panel data that accounts for sources of heterogeneity and idiosyncrasy. Second, the length of the transition period and the enforcement of the Europe Agreements provide data that is a better predictor of future trends than the pre-transition, pre-liberalisation data used in most of the earlier studies. Third, we believe our sectoral approach to be innovative since most previous studies were conducted at an aggregate level. In fact, we find that the predictions can differ greatly across sectors with different characteristics. Fourth, we use to the best of our knowledge for the first time a Prais-Winsten regression with Panel-Corrected Standard Errors (PCSEs). This method incorporates the assumption that the disturbances are heteroskedastic (each country has its own variance) and contemporaneously correlated across countries (each pair of countries has their own covariance). This assumption seems to be especially suited for any study involving transition economies. Finally, we apply the two-step methodology to both trade flows and real wages.

We find that the impact of free Eastern migration on trade and real wages differs across countries and sectors. Trade in high scale economies, high skill-intensity sectors (Chemicals, Machinery and Transport Equipment) increases very sizeably when Eastern skilled workers can freely move West. As firms and workers agglomerate in EU-North and, to a lesser extent in EU-South, a rise in trade of high-skill goods can be explained if these regions gain skilled workers from the East. However, the South lacks the North's market access advantage and thus it suffers the largest loss, whereas the North has the highest gain. The East is in an intermediate position, with a weak market access but well endowed in skilled labour. Furthermore, with free migration the Southern and Eastern peripheries trade more with the centre and less with each other. Migration generally increases real wages in the North by up to 5.6% and decreases them in the South and East up to 8.7 and 1.6% respectively. As a consequence, it decreases the East's convergence and increases the South's divergence, thus strengthening the North's position as a hub. However this gain is due to an increase of 8% in high scale sectors, which employ 75% of North's industrial workers, as real wages in low scale sectors actually decrease by up to 2%. The most sizeable effect of Eastern skilled migration is a decrease of 20% in low scale, low skill sectors in the South, affecting negatively 44% of the Southern workers considered. Thus EU-North can further consolidate its current hub position if the new members participate in a single market for labour.

The paper is organised as follows. Section 2 presents the equation specifications for trade flows and real wages. Section 3 describes the methodology for computing trade and real wages potentials and provides the sectoral potentials

under the migration and no migration scenarios. The two outcomes are compared in Section 4, highlighting the impact on the sectors and country groups considered of allowing for migration of skilled labour. Section 5 concludes.

2 Modelling of Trade Flows and Real Wages

2.1 Trade Flows

Our empirical study of trade flows is based on the four alternative gravity equations. Our benchmark equation keeps the two main hypotheses behind the gravity model. The first main hypothesis is that the volume of trade is directly related to the market size of the trading partners, here proxied by their population (POP), and inversely related to the physical distance between them (DIST). The second main hypothesis is that the volume of trade is a function of country wealth, as measured by GDP per capita (GDPPC). This second element represents more faithfully the so-called Linder (1961) hypothesis on the importance of demand structure and preferences in a world of differentiated goods. High-income countries consume high-quality goods and low-income countries consume low-quality goods. Thus the quality content of exports and imports should increase with GDP per capita.

The two main gravity hypotheses are augmented in two ways. First, the source of quality is the human capital endowment that differs across countries. Thus we add the partner countries' skilled/unskilled labour ratio (HKPC), proxied by the fraction of the country's population with tertiary education studies. Countries relatively abundant in human capital are expected to be net exporters of skill-intensive goods and countries relatively poor in human capital are expected to be net importers of such goods. Second, we distinguish between spatial and non-spatial trade barriers. Spatial trade barriers are given by physical distance and a common border dummy (BORDER). The non-spatial trade barriers are dealt with by means of time dummies, one for EURO membership and another controlling for progressive trade liberalisation with the East since 1991 under the enforcement of the Europe Agreements (EA). Accordingly, our benchmark specification of the gravity model to be estimated for exports and imports of sector k products between countries i and j in year t takes the form:

$$\begin{aligned} TRADE_{ijt}^k = & POP_{it}\beta_1 + POP_{jt}\beta_2 + GDPPC_{it}\beta_3 + GDPPC_{jt}\beta_4 + HKPC_{it}\beta_5 + HKPC_{jt}\beta_6 + \\ & + DIST_{ij}\beta_7 + BORDER_{ij}\beta_8 + EA_{ijt}\beta_9 + EURO_{ijt}\beta_{10} + u_{ijt}^k \end{aligned} \quad (1)$$

We modify equation (1) by interacting the skilled/unskilled labour ratio with both the partners' GDPs per capita and the physical distance between partners. The first interaction crosses demand with supply factors. It can be read as representing differences in the skill endowment controlling for similar levels of quality consumption, or alternatively as representing differences in quality consumption for similar levels of skill endowment. The interaction of the skilled/unskilled labour ratio with distance proxies for knowledge spillovers that decrease with distance between countries and provides another reason why distance can negatively influence trade. The second specification is as follows:

$$\begin{aligned} TRADE_{ijt}^k = & POP_{it}\beta_1 + POP_{jt}\beta_2 + (GDPPC_{it} * HKPC_{it})\beta_3 + (GDPPC_{jt} * HKPC_{jt})\beta_4 + \\ & + (DIST_{ij} * HKPC_{it})\beta_5 + (DIST_{ij} * HKPC_{jt})\beta_6 + BORDER_{ij}\beta_7 + EA_{ijt}\beta_8 + EURO_{ijt}\beta_9 + u_{ijt}^k \end{aligned} \quad (2)$$

An alternative to equations (1) and (2) is to replace the GDP per capita and the skilled/unskilled labour ratio of each country with the absolute value of the difference between them. To these variables we call respectively economic

distance (ECDIST) and human capital distance (HKDIST). The impact of economic distance on trade is a test for intra versus inter-industry trade. Following the Linder (1961) hypothesis, in a world of intra-industry trade we expect countries with similar demand structures to trade more. As a consequence, if economic distance decreases trade we are in the presence of the intra-industry type, whereas if it increases trade then the inter-industry type is predominant. The impact of human capital distance on trade is a test for the HOS hypothesis according to which trade increases with differences in endowments. The modified models are as follows:

$$TRADE_{ijt}^k = POP_{it}\beta_1 + POP_{jt}\beta_2 + ECDIST_{ijt}\beta_3 + HKDIST_{it}\beta_4 + \\ + DIST_{ij}\beta_5 + BORDER_{ij}\beta_6 + EA_{ijt}\beta_7 + EURO_{ijt}\beta_8 + u_{ijt}^k \quad (3)$$

$$TRADE_{ijt}^k = POP_{it}\beta_1 + POP_{jt}\beta_2 + (ECDIST_{ijt} * HKDIST_{ijt})\beta_3 + \\ + (DIST_{ij} * HKDIST_{ijt})\beta_5 + BORDER_{ij}\beta_6 + EA_{ijt}\beta_7 + EURO_{ijt}\beta_8 + u_{ijt}^k \quad (4)$$

In specifications (1) and (2) we included the income levels and human capital endowments of each of the partner countries, either separately or interacted. Thus it matters *how much* of income and endowment each country has. In specifications (3) and (4) we consider the differences in income levels and human capital endowments, again separately or interacted. Now it matters *how different* countries are, irrespective of being richer or poorer, more or less endowed.

2.2 Real Wages

In a New Economic Geography (NEG) setting (e.g., Krugman (1991)), real wages change as a result of three conflicting effects. First, the home market effect: wages are higher in the larger markets. This is an agglomeration force. Second, the competition effect: there is less competition in goods and factor markets in the less industrialized markets, thus wages can be fixed at a higher level. This is a dispersion force. Third, the price index effect: scale economies and lower trade costs decrease the price index of the larger markets, increasing their real wages. This is an agglomeration force. From the interaction of these three effects two possibilities arise. If real wages change inversely with the access to markets and suppliers, whenever the latter increases there will be an outflow of workers and/or an inflow of firms. This is an equilibrating mechanism that reduces wage disparities, allowing for convergence. On the contrary, if real wages change proportionately with the access to markets and suppliers, there will be an inflow of workers and/or an outflow of firms and agglomeration follows.

Some of the explanatory variables in our model are weighted averages either of the sample countries' GDPs, human capital endowments or productivity. These variables were constructed using as weights distances and distance coefficients taken from a gravity model. This formulation goes back to Harris (1954), who defined the distance-weighted average of incomes as a market potential function, this is, the potential demand for goods produced in a certain location is the sum of the purchasing power in all other locations weighted by transport costs (and these are a function of distance). Redding and Venables (2001) and Venables (2001) propose the use of two concepts, market access and supplier access, that use distance coefficients taken out of respectively export and import gravity equations. Accordingly, countries have access to a market where to place their goods while exporters and a market where to draw inputs from while importers. We recognise this formulation as a convenient way of testing empirically the presence of backward and forward linkages. For a country i with neighbour country j in sector k and year t the variables can be formalised as follows:

$$MA_{ikt} = \sum_j GDP_j d_{ijk}^{-\alpha_x} \quad (5) \quad HKMA_{ikt} = \sum_j HK_j d_{ijk}^{-\alpha_x} \quad (6) \quad PRMA_{ikt} = \sum_j PR_{jk} d_{ijk}^{-\alpha_x} \quad (7)$$

$$SA_{ikt} = \sum_i GDP_i d_{ijk}^{-\alpha_M} \quad (8) \quad HKSA_{ikt} = \sum_i HK_i d_{ijk}^{-\alpha_M} \quad (9) \quad PRSA_{ikt} = \sum_i PR_{ik} d_{ijk}^{-\alpha_M} \quad (10)$$

where MA and SA stand for market and supplier access in the goods markets, proxied by the gross domestic product (GDP), HKMA and HKSA represent market and supplier access in the human capital (HK) markets, PRMA and PRSA measure the access to productive markets and suppliers, d is distance and the α 's are distance coefficients (X for exports and M for imports). These α coefficients result from the bilateral gravity equations of the previous section between the North-South, North-East and South-East country pairs. The bilateral flows within each country group were not included in the regressions. Thus to be able to compute the variables in equations (5)-(9), we use the assumption that the distance coefficient between two countries belonging to the same group is given by -1 .

We estimate a panel wage equation that extends that of Hanson (1998). We believe this is the first econometric study of such relationship in the context of an enlarged EU and at a sectoral level. This is the more important in a highly heterogeneous group of 25 countries that have very different real wages and in which we can expect a differentiated behaviour of industrial sectors with different characteristics. The equation to estimate for country i , sector k , year t is given by:⁹

$$\begin{aligned} \ln\left(\frac{W_{ikt}}{P_{ikt}}\right) = & \beta_0 + \beta_1 \ln(GDP_{it}) + \beta_2 \ln(MA_{ikt}) + \beta_3 \ln(SA_{ikt}) + \beta_4 \ln(HK_{it}) + \\ & + \beta_5 \ln(HKMA_{ikt}) + \beta_6 \ln(HKSA_{ikt}) + \beta_7 \ln(U_{it}) + \beta_8 \ln(AC_{it}) + \\ & + \beta_9 \ln(PR_{ikt}) + \beta_{10} \ln(PRMA_{ikt}) + \beta_{11} \ln(PRSA_{ikt}) + \alpha_i + \mu_{ikt} \end{aligned} \quad (11)$$

with W the wage, P the price index, GDP the gross domestic product, MA the estimated goods market access, SA the estimated goods supplier access, $HKMA$ the estimated human capital market access, $HKSA$ the estimated human capital supplier access, U the unemployment rate, AC the percentage of active population, PR the sectoral productivity, $PRMA$ access to productivity of markets, $PRSA$ access to productivity of suppliers, and α country dummies.

The GDP , MA , SA , HK , $HKMA$ and $HKSA$ variables derive directly from NEG theory, as well as the $PRMA$ and $PRSA$ constructions. These variables can generally be expected to influence real wages positively. In the estimation we distinguish the own effects (GDP , HK , PR) from the purely external effects (MA , SA , $HKMA$, $HKSA$, $PRMA$, $PRSA$). The own productivity is expected to increase wages. The productivity of the neighbours should increase wages if it complements the own productivity, but decrease them if it acts as a substitute. The remaining variables control for countries' idiosyncrasies. In particular, the country dummies are expected to capture the country-specific institutional arrangements that influence the labour market outcomes and the macroeconomic policies that determine the price levels. The dummies for each country group are estimated with reference to the country with highest real wages in that group. Thus a negative sign would indicate that there are country-specific characteristics driving real wages down, e.g., labour market rigidities and/or an inflationary macroeconomic policy with respect to the leading country. In our sample, the countries with highest real wages are Denmark in EU-North, Spain in EU-South and the Czech Republic in EU-

⁹ An alternative specification was estimated where the unemployment and activity rates were replaced with their interaction. While the overall results are similar, there is some loss of information as it is not possible to know whether the interaction effect is due to either the unemployment or activity rate. As an example, in the East the interaction variable is generally not significant, but the activity rate is very significant for all sectors.

East.¹⁰ Unemployment and the active share of population should drive wages down by providing firms with an available pool of workers that can replace those currently employed.

2.3 *Estimation and Data Issues*¹¹

The empirical models are built around three country groups – EU-North (N), EU-South (S) and EU-East (E) – that differ in the skill endowment as well as both spatial and non-spatial trade costs. In the models, N is a hub and has a higher skill endowment, this is, more skilled workers per capita, than the two peripheries S and E. Sectors also differ in their characteristics, namely economies of scale and skill-intensity. We run regressions for bilateral trade flows between the three possible pairs – North-East (N-E), North-South (N-S) and South-East (S-E) – and for the real wages of each N, S, and E country group. This is done for four groups of sectors distinguished by degree of economies of scale as in Pratten (1988) and skill-intensity as in Baldwin et al. (2000). These four groups are as follows: Chemicals, Machinery and Transport Equipment are high scale economies and high skill-intensive, Metals are high scale economies and low skill-intensive, Leather & Footwear, Minerals and Textiles & Clothing are low scale economies and low skill-intensive, and Wood Products are low scale economies and high skill-intensive. Estimation is carried out through the Prais-Winsten regression with correlated Panel Corrected Standard Errors (PCSEs), which assumes that the disturbances are heteroskedastic (each country has its own variance) and contemporaneously correlated across countries (each pair of countries has their own covariance). It should be noted that the trade data, with a minimum of 200 and a maximum of 920 observations, is more comprehensive than the wage data. The original wage data was interpolated and extrapolated to increase the number of observations, which is still not more than 100, though it is not less than 26.¹² Thus the wage results must be interpreted with caution.

Data is taken for the transition period (1990-99), for the following aggregates: (i) SITC Rev. 2: chemicals (5), leather products (61, 85), machinery (71-77), metals (67-69), minerals (66), textiles and clothing (65, 84), transport equipment (78, 79), and wood products (63, 82); (ii) ISIC Rev. 2: chemicals (35), leather products (323, 324), machinery (382, 383), metals (37, 381), minerals (36), textiles and clothing (321, 322), transport equipment (384), and wood products (33); (iii) ISIC Rev. 3: chemicals (24), leather products (19), machinery (29, 30, 31), metals (27, 28), minerals (26), textiles and clothing (17, 18), transport equipment (34, 35), and wood products (20, 36). Trade data (value of exports and imports) is provided by the OECD International Trade Statistics CD-ROM. Data on wages, prices, employment, unemployment and labour force is provided by the International Labour Organisation's Yearbook of Labour Statistics (<http://www.ilo.org/>). Industrial production data was taken from OECD's Industrial Structure Statistics. Distance and border data was taken from the CEPII website (<http://www.cepii.fr/>). Distance data is measured in km between the sample countries' economic centres. These correspond to the capital city except for Germany (Hamburg is the city used). Countries are considered to share a common border when they share a land border or a small body of water border. GDP and population data was taken from the web version of IMF's International Financial Statistics (<http://www.imf.org/>). Human capital is proxied by a schooling variable given by the number of people with tertiary education studies. This number was obtained from the Barro-Lee dataset for 1990 and then added of the yearly number of enrolments. The enrolment data was taken from the OECD Education Statistics (<http://www.oecd.org/>) and

¹⁰ The Eastern sectoral productivity data was available only for the Czech Republic, Hungary and Poland and thus only these countries were included in the regression sample. This however does not change the overall results as these three countries dominate the group of ten in terms of size and wealth. The Czech Republic remains the country with highest real wages even when all Eastern countries are included. Alternative regressions (not reported) were run with all the ten countries but removing the productivity variables. The overall results are very similar to those reported here.

¹¹ The full regression results for trade flows and real wages are omitted due to space constraints and can be obtained from the authors upon request.

¹² The scatter plots of real and interpolated data (available upon request) show that the overall trends are not substantially altered. In addition, whenever the original number of observations allowed it, we ran real data regressions. The results were very similar to the interpolated data counterparts.

UNESCO Statistics of Educational Attainment and Literacy (<http://www.unesco.org/>). The data for all regional trade associations was taken from the WTO website (<http://www.wto.org/>).

3 Predictions

3.1 Methodology

The most widely used (e.g., Havrylyshyn and Pritchett (1991), Hamilton and Winters (1992), Winters and Wang (1992), Baldwin (1994), Winters and Wang (1994), Gros and Gonciarz (1996), Festoc (1997), Schumacher (1997), Vittas and Mauro (1997), Maurel and Cheikbossian (1998), Fontagne et al. (1999), Buch and Piazolo (2000), Nilsson (2000)) empirical methodology for predicting potential EU-CEECs trade flows is based on the gravity model and develops in two steps. First, a bilateral gravity equation is estimated for a reference sample, say OECD countries. Second, this equation is used to simulate trade between sample and non-sample countries, say the EU and CEECs. These out-of-sample predictions thus assume that the OECD or EU-15 coefficients can be applied to the CEECs. Moreover, the general use of pre-transition, cross-sectional data rendered unreliable many of the widely cited earlier estimates.¹³ Our study differs from this traditional set-up in that we conduct an in-sample prediction as we assume that the 1990s coefficients for trade between the CEECs and both EU-North and EU-South can be used to predict the future levels of trade of each of these country pairs. Thus we compute trade potentials between each pair of country groups using the coefficients estimated for that same pair. We simultaneously recognise the structural differences in the determinants of trade patterns and assume that the 1990s are good indicators of the determinants of trade patterns in the next decade. Moreover, we extend the two-step methodology to our wage equation on similar grounds.

The first step in computing trade potentials between the EU-25 countries, this is, the estimation of gravity and wage equations, was described in Section 2. The second step is to substitute the coefficient values back into the equations and to formulate alternative hypotheses regarding the migration and no migration scenarios. The predicted values of trade and of real wages for the North, South and East country groups, in both the migration and no migration scenarios, were computed for each of the regression coefficients obtained through the Prais-Winsten with PCSEs. The left-hand side values obtained thus correspond to the sectoral trade and real wage potentials for each scenario. We employ a number of simplifying assumptions. One of them is common to the two scenarios: no country will adopt the Euro in the next ten years. The remaining assumptions mark the difference between the migration and no migration scenario. In the no migration scenario we further assume that GDP, population and the human capital endowment will keep following the current trends. Hence migration is not necessarily equal to zero, but the enlargement does not imply a single labour market, this is, the current restrictions will continue to apply, at least during the next ten years. This scenario is plausible if the current EU members in fear of mass migration decide to isolate their labour markets from Eastern migrants. There is, however, some income convergence, to the extent that growth rates in the East are higher than in the West.

Alternatively, if free mobility of labour is legally allowed, we incorporate in the current trends the projections for East-West migration provided by Boeri and Brucker (2000) and Weise et al. (2001), modifying the projected values of population and human capital endowments in the EU-25 accordingly. In particular, population and the human capital endowment would increase in the North and to a lesser extent in the South, simultaneously decreasing in the East. The change in the human capital endowment is the same as the change in population as in our projection we consider only migration of skilled labour. Our intention is to provide an upper bound for the possible loss/gain of human capital in the

¹³ As shown by Matyas (1997,(1998) and Breuss and Egger (1999), only panel estimation produces unbiased results in bilateral gravity models.

East/West. Nevertheless, according to de Melo et al. (2002), among others, there are reasons to believe that a substantial proportion of the Eastern migrants would be skilled. On one hand, countries such as Germany and the UK have implemented migration policies relying explicitly on skill criteria and, given the Commission's recommendation, it is likely that other EU countries follow a similar strategy. On the other hand, after the enlargement the guest-worker policies and temporary migration schemes being applied to CEECs workers will have to be abandoned. This is of extreme importance, as although Eastern migrants are highly skilled these policies channel them into occupations with low skill requirements (Boeri and Brucker (2000)). Furthermore, the possibility of matching between skill endowment and job requirement will be extended not just to the incoming migrants but also to those who have already migrated to the EU, who will be able to upgrade from low skill to high skill activities. Therefore, if the enlargement involves free migration, Eastern skilled workers will be competing with Western skilled workers and not with the unskilled ones as has been happening in the last ten years of transition. However, though migration would be higher with a single labour market, increasing the speed of income convergence, it would not be such as to lead to full equalisation of real wages, at least in the next decade.

3.2 Sectoral Trade Flows

Let us rename equations (1)-(4) as Models 1-4. In this paper we present only the trade predictions using the coefficients from Models 1 and 3.¹⁴ These results are very similar to those coming out of respectively Models 2 and 4 as these replace incomes (or their difference), endowments (or their difference) and distances with interaction variables. The reason is that the effects of the interaction variables simply represent the sum of effects of its components, thus not substantially altering the predicted values. Model 1 represents the level impact of absolute incomes and endowments whereas Model 3 provides a differences effect of relative incomes and endowments. In the first we measure how rich or well-endowed countries are. In the second we look at how different in incomes and endowments countries are. In general Model 1 generates higher trade potentials than Model 3. Which value would be closer to the truth depends on the relative importance of levels or differences. As econometrically it is not possible to blend Models 1 and 3 into a single one due to collinearity, their relative importance in determining trade would vary across country pairs and a country analysis would be necessary to draw further conclusions. The predicted bilateral trade flows using the coefficients from Models 1 and 3 may however be seen as respectively an upper and a lower bound for North-East (N-E), North-South (N-S) and South-East (S-E) flows. Through row subtraction of imports to exports for each sector and country group we obtained the net exports represented in Table 1.

Table 1: Predicted bilateral net trade flows in 2010 (millions USD)							
		<i>N-E</i>		<i>N-S</i>		<i>S-E</i>	
		<i>Model 1</i>	<i>Model 3</i>	<i>Model 1</i>	<i>Model 3</i>	<i>Model 1</i>	<i>Model 3</i>
<i>No migration</i>	<i>High scale economies and high skill-intensity</i>	142.716	57.524	999.96	526.574	23.676	1.58
	<i>High scale economies and low skill-intensity</i>	5.409	0.972	48.483	53.692	11.588	-0.018
	<i>Low scale economies and high skill-intensity</i>	-7.561	-3.591	19.566	3.378	0.281	-0.052
	<i>Low scale economies and low skill-intensity</i>	-10.24	-10.109	-29.235	-61.668	1.269	0.106
<i>Migration</i>	<i>High scale economies and high skill-intensity</i>	141.682	57.456	1020.432	527.855	23.691	1.603
	<i>High scale economies and low skill-intensity</i>	4.985	0.942	47.994	53.816	11.662	-0.008
	<i>Low scale economies and high skill-intensity</i>	-7.802	-3.575	19.517	3.391	0.263	-0.051
	<i>Low scale economies and low skill-intensity</i>	-11.148	-10.079	-29.76	-61.455	1.25	0.107

¹⁴ The complete prediction results may be obtained from the authors upon request.

Countries have two main characteristics that influence the location of sectors: market access and human capital endowments. First, in the presence of trade costs, sectors with high scale economies would locate preferentially in countries with better market access, and thus these would be net exporters of such goods. As the hub, the EU-North group has the best market access. In fact, the Southern and Eastern peripheries trade more with EU-North than with each other. In particular, the North countries are the main net exporters of goods in sectors with high economies of scale. Second, sectors with high skill-intensity would locate in countries with a high skill endowment and these would be net exporters of such goods. Our results are in accordance with the widely accepted view that EU-East would have a higher endowment of skilled labour than the South and thus it would be more competitive than EU-South in skill-intensive goods. They also support the idea that the peripheral countries should specialise in low scale-economies sectors. In fact, Table 1 shows that the only sectors where the peripheries would have a surplus in trade with the North are those with low scale economies. The distortion suffered by Eastern trade in the 1990s and its long-lasting effects are also apparent from Table 1, as the CEECs would keep a surplus vis-à-vis EU-North in sectors with low scale economies and low skill-intensity. These are the only surplus sectors for the South.

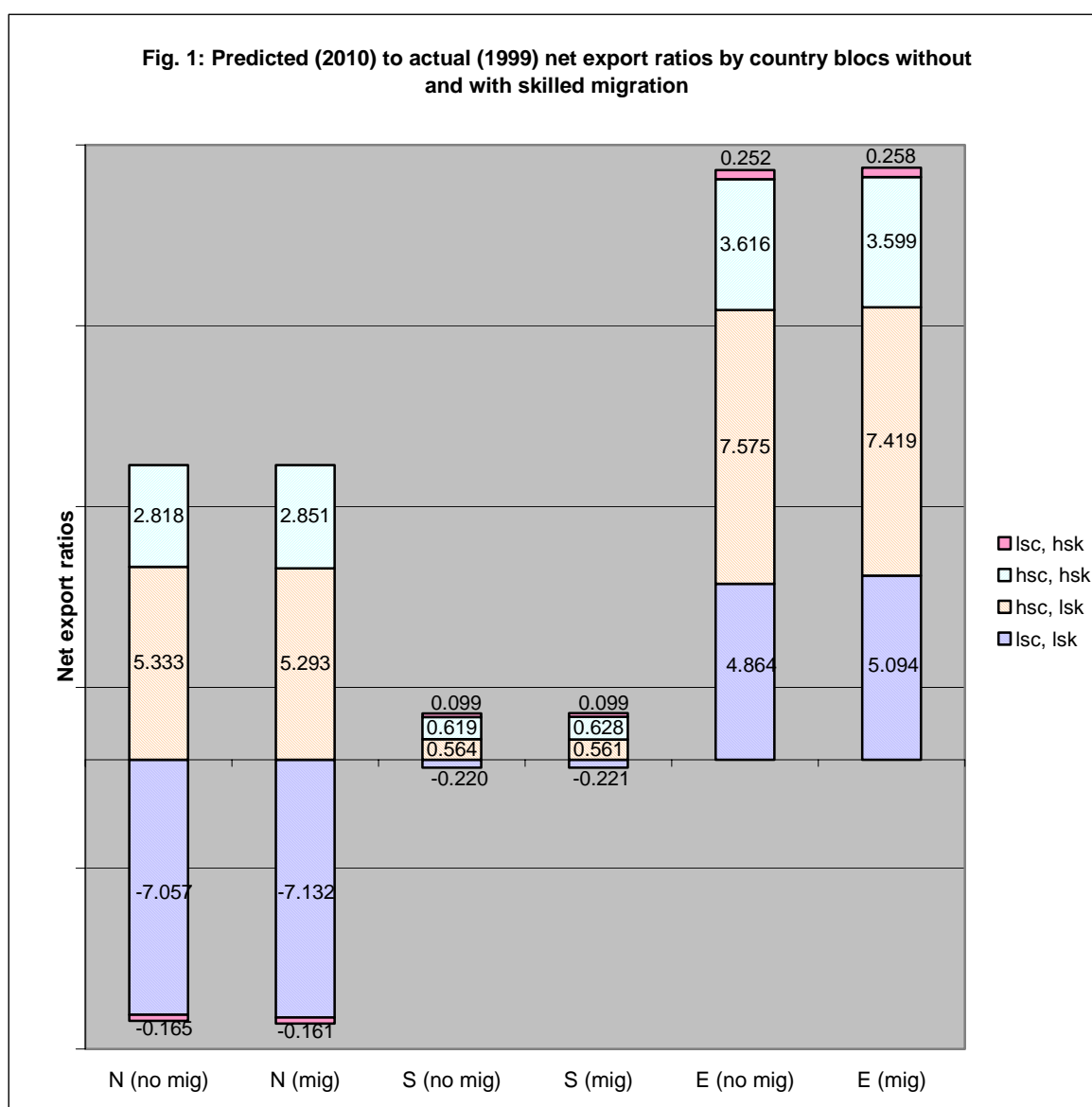
Overall, EU-East would register a trade deficit with respect to both EU-North and EU-South as the surplus in some sectors would not be high enough to compensate the deficit in others. Interestingly, the surplus sectors differ with the trading partner. With EU-North, surplus would exist in all low scale economies sectors, whether low or high skill. This proves that location can be more important than endowments. With EU-South, the surplus would exist in only Wood Products (low scale economies, high skill-intensity) without migration and also in Metals (high scale economies, low skill-intensity) if there were migration. This result carries a very important message for the CEECs: outward migration of skilled labour shifts their comparative advantage towards low-skill sectors away from high-skill sectors. Another important outcome exists for EU-South: even in an enlarged EU-25, the traditional comparative advantage in low scale economies, low skill-intensity sectors such as Leather&Footwear and Textiles&Clothing can be kept. In these sectors, the South would keep a surplus in trade with both North and East, and it would still be a higher net exporter of these products to the North than the East would.

		<i>North</i>		<i>South</i>		<i>East</i>	
		<i>Model 1</i>	<i>Model 3</i>	<i>Model 1</i>	<i>Model 3</i>	<i>Model 1</i>	<i>Model 3</i>
<i>No migration</i>	<i>High scale economies and high skill-intensity</i>	1142.675	584.097	-976.284	-524.994	-166.391	-59.103
	<i>High scale economies and low skill-intensity</i>	53.892	54.664	-36.894	-53.71	-16.998	-0.954
	<i>Low scale economies and high skill-intensity</i>	12.005	-0.212	-19.286	-3.43	7.281	3.642
	<i>Low scale economies and low skill-intensity</i>	-39.475	-71.777	30.504	61.774	8.971	10.003
<i>Migration</i>	<i>High scale economies and high skill-intensity</i>	1162.113	585.31	-996.741	-526.252	-165.372	-59.059
	<i>High scale economies and low skill-intensity</i>	52.98	54.758	-36.333	-53.823	-16.647	-0.935
	<i>Low scale economies and high skill-intensity</i>	11.716	-0.184	-19.255	-3.441	7.539	3.626
	<i>Low scale economies and low skill-intensity</i>	-40.907	-71.534	31.009	61.562	9.898	9.971

In order to look more explicitly at the effects on the trade balances of each country group we construct Table 2. This Table is built from Table 1 by adding the flows from each group to the other two. The previous conclusions are reinforced. First, the North has a surplus in all sectors except in low scale economies, low skill-intensity. Second, the South has a deficit in all sectors except in low scale economies, low skill-intensity. Finally, the North/South symmetry is broken by the presence of the East, with deficits in high scale economies sectors and surpluses in low scale economies sectors. Thus even after the CEECs have become members of the EU, it seems that the human capital endowment does not prevail over market access. On the contrary, trade between EU-North and EU-South seems to be equally related to endowments and market access. Our results come as a support of the call in Davis (2000) for the use

of hybrid theories in explaining trade patterns. Our specifications bear such hybrid character between the more traditional trade theory based on endowments and the new economic geography based on economies of scale and transport costs.

We also want to know how the predicted net exports relate to current values. After averaging for Models 1 and 3 the predicted values in Table 2, we represent in Fig. 1 the ratios of predicted net exports with respect to the values in the last sample year (1999). There we can see that the East can expect the highest net export growth. This is not surprising, as it is the integrating group. Moreover, net exports increase in all sector groups, though more in low skill than in high skill sectors. This result shows that the shift in trade composition towards low skill goods induced by transition is likely to be reinforced. The South's net exports are the most static, though high scale, high skill sectors are the most dynamic and the traditional low scale, low skill sectors tend to lose importance. In the North net exports of high scale sectors increase and those of low scale (and especially low skill) decrease. As a consequence, specialisation is most likely to increase.



Our results are not directly comparable with those of any previous study on trade potentials. First, to the best of our knowledge this paper is the first to compare trade potentials within an enlarged EU for the migration and no

migration scenarios. We do this using an extended gravity model that incorporates human capital, either by itself or interacted with distance and income. Second, the scope in terms of number of countries and sectors is also wider than that of previous studies. Country studies are, for example, Cadot and Melo (1996), looking at France, and Mastropasqua and Rolli (1994), looking at the Visegrad countries (Poland, ex-Czechoslovakia and Hungary). Examples of sectoral studies are Corado (1994), studying the textiles and clothing sector, Rollo and Smith (1993) and Vittas and Mauro (1997) studying the sensitive sectors (metals, chemicals, textiles and clothing, leather and footwear, agriculture and food processing) and Fidrmuc (1998) looking at SITC one-digit groups between EU-6. Though none of these studies is as comprehensive as ours, we are able to generalise their results. We also find that integration, whether a customs union or a single market, may have much higher effects on specific sectors than suggested by aggregate trade flows, and have shown how different the results are across sectors.

3.3 Sectoral Real Wages

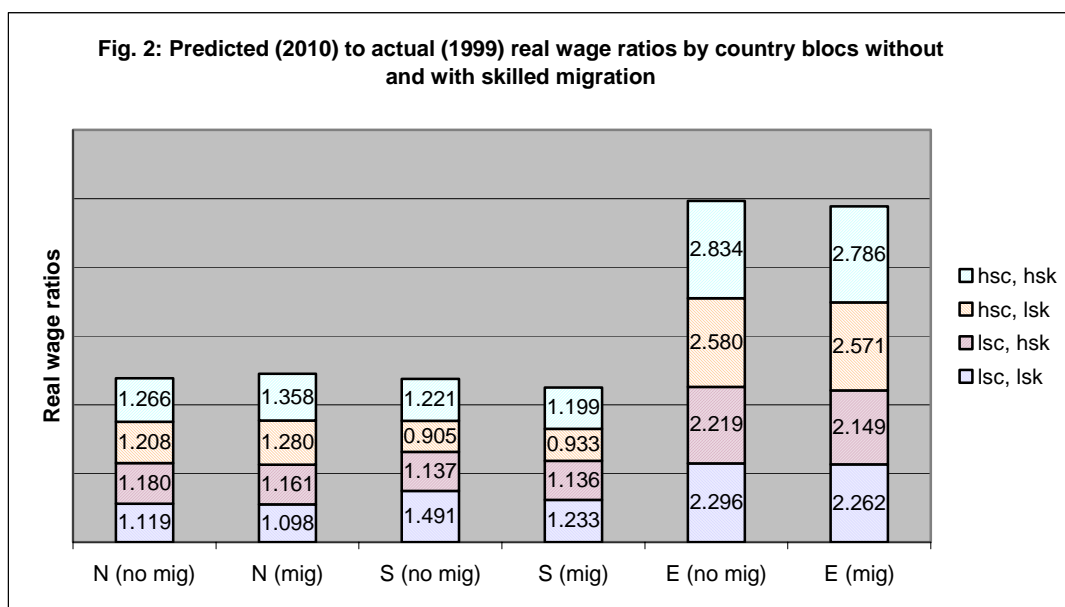
In a free market wages are jointly determined by demand and supply of labour. In turn, demand for labour is dependent on the location of firms. Countries have two main characteristics that influence the location of firms: market access and human capital endowments. First, in the presence of trade costs, sectors with high scale economies would locate preferentially in countries with better market access. Second, sectors with high skill-intensity would locate in countries with a high skill endowment. The EU-North group has the best access to both goods and factors markets and thus also the highest real wages. The NEG variables defined in (5)-(10) were computed using the distance coefficients obtained from Models 1 and 3. In common with the trade flows, Model 1 generates higher real wages than Model 3. Which value would be closer to the truth depends on the relative importance of levels or differences. The predicted real wages obtained using the coefficients from Models 1 and 3 may however be seen as respectively an upper and a lower bound for the North (N), South (S) and East (E). These are shown in Table 3 below.

		<i>North</i>		<i>South</i>		<i>East</i>	
		<i>Model 1</i>	<i>Model 3</i>	<i>Model 1</i>	<i>Model 3</i>	<i>Model 1</i>	<i>Model 3</i>
<i>No migration</i>	<i>High scale economies and high skill-intensity</i>	13.913	14.268	4.956	4.804	0.737	0.700
	<i>High scale economies and low skill-intensity</i>	12.282	12.847	3.078	3.092	0.727	0.479
	<i>Low scale economies and high skill-intensity</i>	10.347	10.236	3.023	2.891	0.392	0.404
	<i>Low scale economies and low skill-intensity</i>	10.381	10.005	4.399	2.852	0.364	0.423
<i>Migration</i>	<i>High scale economies and high skill-intensity</i>	15.019	15.202	4.847	4.735	0.725	0.689
	<i>High scale economies and low skill-intensity</i>	13.289	13.344	3.168	3.199	0.723	0.479
	<i>Low scale economies and high skill-intensity</i>	10.147	10.100	2.985	2.924	0.380	0.391
	<i>Low scale economies and low skill-intensity</i>	10.222	9.783	3.718	2.277	0.358	0.417

In Table 3, a robust wage pattern may be observed whether the new member countries will be participating solely in a customs union or in a fully-fledged single market. In an enlarged EU, the North would have the highest real wages, following on average a specific hierarchy: (i) high scale economies, high skill-intensity; (ii) high scale economies, low skill-intensity; (iii) low scale economies, high skill-intensity; (iv) low scale economies, low skill-intensity. The South would have the second highest real wages, though only a third of those in the North. In the South the wage hierarchy is as follows: (i) high scale economies, high skill-intensity; (ii) low scale economies, low skill-intensity; (iii) high scale economies, low skill-intensity; (iv) low scale economies, high skill-intensity. The wage difference between North and South translates the differences in both endowments and market access. The difference in sectoral wage structure is directly related to the sectoral employment shares shown in Appendix D. Whereas in the North high scale, high skill sectors represent more than half of employment in the sample sectors, in the South this share comes down to a third of

the total. The most important sectors in employment terms are low scale, low skill, employing over 44% of the sample total. Thus demand for labour in these sectors drives wages up in the South.

The East, though being a periphery, is well endowed with human capital. Still it lags behind the South by a factor of between five in high scale, high skill sectors and three in low scale sectors. In the East the wage hierarchy is similar to that of the North, though in the East both high scale, high skill and low scale, low skill employ around 38% of workers in the sample sectors (Appendix D). We should note that Eastern wages are always higher in high scale sectors. In fact, there is a much larger sectoral wage gap in the East with respect to either North or South: real wages in high scale sectors are twice as much as those in low scale sectors. In conclusion, even after the CEECs have become members of the EU, it seems that the human capital endowment does not prevail over market access. This proves that location can be more important than endowments.



In Fig. 2 we compare our projections for real wages in 2010 with the last year of our sample (1999) for each country group in the migration and no migration scenarios. A ratio above one means an increase, and a ratio below one implies a decrease of 2010 real wages with respect to 1999. The Eastern real wages double or even triple, converging towards the level of current EU members. Though the difference is still substantial, as the East departs from a much lower level, some catching-up can be expected, especially in high scale sectors, which have received higher FDI inflows. On the contrary, the increase in real wages in the North and South is almost identical in high skill sectors. Hence in these sectors no significant convergence between North and South can be expected in the next decade. There is even divergence in high scale, low skill sectors, where real wages actually decrease in the South by 7 to 10%, thus affecting 17% of the workers in the sample sectors. Only in low scale, low skill sectors, where wage growth in the South is higher than in the North, we find some convergence. These sectors also show the highest real wage growth in the South in the next decade. In the North, the greatest wage increase occurs in high scale, high skill sectors, exactly where the North has a double advantage. The same happens in the East. We must note that only the three most central Eastern countries are included in the sample and thus for these the Northern scale and skill advantages are somewhat present. The South lacks both and can only rely on the traditional comparative advantage in low scale, low skill sectors, where other EU countries are less competitive.

Previous studies estimated a wage equation where wages are a function of market and supplier access and also of access to a pool of skilled workers. In turn these variables are distance-weighted averages of incomes and human capital using distance coefficients taken from a gravity model. Examples at an aggregate level are Hanson (1997,1998) on NAFTA and Redding and Venables (2001) and Venables (2001) in a worldwide context. Like ours, these studies conclude that wages increase with proximity to markets and suppliers. Hanson (1997,1998) finds that in Mexico nominal wages decrease with the distance from industrial centres but were not influenced by NAFTA trade liberalisation. However the movement of people was not considered in the study and it refers to observable data rather than projecting into the future. Venables (2001) finds two European wage gradients, one from the EU core to Greece, Portugal and Spain, and another from Western to Eastern Europe. These are however aggregate wages and do not distinguish sectoral effects. Using regional data for respectively Canada and the UK, Hunt and Mueller (2002) and Monastiriotis (2002) conclude that regions with more human capital tend to have higher average wages. Our results are not directly comparable with these previous studies. On one hand, to the best of our knowledge this chapter is the first to look at the impact of an enlarged European Single Market on potential real wages. We do this by applying to wages a methodology widely used for trade flows, whereas previous studies do not involve any prediction methodology. On the other hand, the scope in terms of countries and sectors differs as we use an exclusively European sample and disaggregate industrial sectors. By doing this, we additionally find that integration, whether a customs union or a single market, may have much higher effects on specific sectors than suggested by aggregate data, and have shown how different the results are across sectors.

4 Migration Effects

In this paper we are especially interested in the trade and real wage impact of freely allowing skilled workers from EU-East into Western labour markets. Using the values in Tables 1 and 2, we subtract the no migration to the migration trade potentials of each sector and country group. We further sum the values for all sectors. The net migration effects on bilateral flows are given in Table 4 and those on country groups are given in Table 5. Using the values in Table 3, we computed the percentage change in real wages with respect to the no migration situation. This was done by subtracting the no migration to the migration real wage potential and dividing by the no migration real wage potential for each sector and country group for each model. The values expressed in percentage terms are shown in Table 6. In addition, its last row (column) gives a weighted average of the previous four rows (columns) using as weights the sectoral (country groups) employment shares.

4.1 Trade Flows

It was already apparent from Fig. 1 that migration benefits net exports in high scale sectors in the host countries of the North and South, but benefits net exports in low scale sectors in the origin countries of the East. In addition, we would expect the brain drain caused by outward migration of skilled labour to decrease the East's net exports and simultaneously increase the West's net exports of high skill-intensive goods. This effect would be larger for EU-North as most Eastern brains would relocate there. However, Table 4 shows a somewhat different picture. In terms of flows, the most sizeable change occurs in the North-South direction, with the North increasing its exports of high scale economies, high skill-intensity sectors to the South by up to 25 million USD. Thus migration of skilled workers from the East into mainly the North reinforces the latter's position as a hub and creates trade with the South. This makes of the high scale economies, high skill-intensity sectors (Chemicals, Machinery and Transport Equipment) those with the most sizeable effects as they capture both the market access and the endowments advantages of the North.

	<i>N-E</i>		<i>N-S</i>		<i>S-E</i>	
	<i>Model 1</i>	<i>Model 3</i>	<i>Model 1</i>	<i>Model 3</i>	<i>Model 1</i>	<i>Model 3</i>
	<i>High scale economies and high skill-intensity</i>	-1.034	-0.068	20.471	1.281	0.015
<i>High scale economies and low skill-intensity</i>	-0.912	0.094	0.561	-0.113	0.35	0.019
<i>Low scale economies and high skill-intensity</i>	-0.24	0.016	-0.049	0.012	-0.017	0.001
<i>Low scale economies and low skill-intensity</i>	-0.907	0.031	-0.525	0.212	0.485	0.077
<i>All sectors</i>	-3.093	0.073	20.46	1.392	0.833	0.12

This result carries over to Table 5 and also explains why the North benefits from the largest gains and the South suffers the greatest losses, as the South lacks either a market access or an endowment advantage. The East is in an intermediate position, with a weak market access but well endowed in skilled labour. As firms and workers agglomerate in EU-North, which includes the larger markets, the majority of production will be consumed locally instead of exported using mostly locally produced inputs instead of relying on imports. Note that we are dealing with relatively small migration forecasts. The following effects of migration on trade would be actually amplified by East-West migration. First, the North increases its net exports with migration, as would be expected, but the South even suffers a *reduction*. Second, the East manages to *increase* its net exports, even if marginally. Thus the largest net gains of allowing the East to participate in a full-fledge Single Market accrue to the North, whereas the South registers a net loss.

	<i>North</i>		<i>South</i>		<i>East</i>	
	<i>Model 1</i>	<i>Model 3</i>	<i>Model 1</i>	<i>Model 3</i>	<i>Model 1</i>	<i>Model 3</i>
	<i>High scale economies and high skill-intensity</i>	19.438	1.213	-20.457	-1.257	1.019
<i>High scale economies and low skill-intensity</i>	-0.912	0.094	0.561	-0.113	0.35	0.019
<i>Low scale economies and high skill-intensity</i>	-0.289	0.028	0.031	-0.011	0.257	-0.016
<i>Low scale economies and low skill-intensity</i>	-1.432	0.243	0.505	-0.211	0.927	-0.032
<i>All sectors</i>	16.805	1.578	-19.36	-1.593	2.554	0.015

4.2 Real Wages

As can be seen in Table 6, the impact of free Eastern migration on wages is distinctly different across countries and sectors. Overall, when migration is allowed for real wages increase 3.8 to 5.6% in the North and decrease 7.1 to 8.7% in the South and 1.3 to 1.6% in the East when Eastern skilled workers can freely move West. This is because as firms and workers agglomerate in EU-North, demand for labour more than compensates supply and wages rise in high scale sectors. In low scale sectors, demand for labour is not enough to compensate supply and real wages decrease. There is migration to a lesser extent to EU-South, but this region loses firms. As a consequence, demand for labour does not compensate its supply even in high scale, high skill sectors, so that wages decrease, except in high scale, low skill sectors. The South lacks the North's market access advantage and is scarcer in skilled labour. Thus it suffers a loss, whereas the North has a gain. The East loses out as well, as firms and workers relocate West and the loss of firms is higher than the loss of workers. Though free skilled migration reinforces the centre/periphery pattern, average real wages in the EU-25 as a whole can be expected to increase between 1.3 and 2.7%.

The differences in the overall results mask even higher sectoral differences. The high scale sectors are responsible for the positive outcome in the North, as their real wages increase by 8% and they alone employ 75% of Northern workers. However, the remaining 25% working in low scale sectors may expect a loss as high as 2% if migration is allowed. In the South, the free migration of Eastern workers has a positive effect in high scale, low skill sectors, increasing real wages by around 3%. However, this is not compensated by the negative impact on the other sectors. In

particular, an enlarged Single Market may decrease as much as 20% the real wages in traditionally strong low scale economies, low skill-intensity sectors such as Leather&Footwear and Textiles&Clothing. Moreover, this would have a largely negative impact on industrial workers as a great proportion works in such sectors. The numbers range from a low of 36% in Spain to a high of 60% in Portugal, where most of these industries are concentrated in the North of the country. As a consequence, the regional welfare effects could be non-negligible. The only positive consequence of such dramatic fall in real wages might be an increase in export competitiveness. It is however doubtful whether a specialisation based on low wages would bring substantial long-term benefits. In the East, outward migration of skilled labour creates greater wage losses in high-skill sectors than in low-skill sectors, reaching 1.8% reduction in real wages. Interestingly, the scale effect prevails over the skill effect in the East. Hence size is more important than endowments.

Table 6: Migration effects on country groups (% change relative to the no migration situation)

	<i>North</i>		<i>South</i>		<i>East</i>		<i>All countries (employment-weighted)</i>	
	<i>Model 1</i>	<i>Model 3</i>	<i>Model 1</i>	<i>Model 3</i>	<i>Model 1</i>	<i>Model 3</i>	<i>Model 1</i>	<i>Model 3</i>
<i>High scale economies and high skill-intensity</i>	7.954	6.541	-2.201	-1.439	-1.706	-1.698	5.839	4.802
<i>High scale economies and low skill-intensity</i>	8.201	3.870	2.906	3.453	-0.513	-0.060	6.439	3.307
<i>Low scale economies and high skill-intensity</i>	-1.934	-1.326	-1.257	1.157	-3.204	-3.072	-2.033	-1.252
<i>Low scale economies and low skill-intensity</i>	-1.527	-2.215	-15.480	-20.150	-1.759	-1.238	-5.005	-6.393
<i>All sectors (employment-weighted)</i>	5.647	3.847	-7.132	-8.718	-1.600	-1.308	2.762	1.308

As a conclusion, from the country group point of view, the EU-North can further consolidate its current hub position if the new members participate in a single market for labour. This is because the net gains of allowing the East to participate in a full-fledge Single Market accrue to the central countries in the North, whereas the Southern and Eastern peripheries register a net loss. Moreover, as can be seen in Fig. 2, the East converges with the North, but the South does not. In fact, it diverges. The role of migration is generally to decrease convergence of the East and increase divergence of the South, thus reinforcing the centre/periphery pattern. From the sectoral point of view, at the EU level, free migration increases real wages in the high scale economies sectors, particularly those with high skill-intensity (Chemicals, Machinery and Transport Equipment), and decreases real wages in low scale economies sectors, particularly those with low skill-intensity (Leather&Footwear, Minerals and Textiles&Clothing). This outcome is due to that high scale sectors capture the market access advantages of the North and also, for the high-skill intensity group, the skill endowments. As firms and workers agglomerate in EU-North, which includes the larger markets, the price of inputs decreases. In addition, as capital is more mobile than labour, demand for labour increases relative to supply and nominal wages rise. The outcome in sectors with high scale economies that benefit more from agglomeration is higher real wages.

5 Conclusions

In this paper we have estimated two sectoral models, of trade flows and real wages, for three regional blocs of the enlarged EU that we defined as North, South and East. We use the estimated coefficients to compute trade and wage potentials between these three groups under two alternative scenarios of an enlargement with free movement of labour and an enlargement with restrictions to that movement. In both cases we employ the extreme assumption that all migrants are skilled, thus placing an upper bound on the East/West skill transfer. The impact of free Eastern migration on trade is distinctly different for high scale economies, high skill-intensity sectors (Chemicals, Machinery and Transport Equipment) and all the others. Trade in those three sectors increases very sizeably when Eastern workers can freely move West. This can lead us into thinking that in fact most of the migrants would be skilled. As firms and

workers agglomerate in EU-North and, to a lesser extent in EU-South, a rise in trade of high-skill goods can be explained if these regions gain skilled workers from the East. Furthermore, with free migration the Southern and Eastern peripheries trade more with the centre and less with each other.

The North benefits from allowing migration by gaining skilled workers and being able to keep and attract firms. With economies of scale and transport costs, the increase in supply of goods overpowers the increase in demand for goods and the North increases the net exports of the sectors in which it has a double advantage: those with high scale economies and high skill-intensity. At the same time, the increase in labour supply is overpowered by the increase in labour demand and the North increases by 8% the real wages of the high scale economies sectors, which employ 75% of North's industrial workers. Low scale sectors are negatively affected by market access, as they are more sensitive to transport costs than to economies of scale. As a result, when Eastern workers can freely move West, Northern real wages in low scale sectors actually decrease by up to 2%. The South lacks the North's market access advantage and thus it suffers the most sizeable effect of Eastern skilled migration, a decrease of 20% in low scale, low skill sectors, affecting negatively 44% of South's industrial workers. The East is in an intermediate position, with a weak market access but well endowed in skilled labour. As location prevails over endowments, also the East loses out. Overall, free Eastern migration increases real wages in the North by up to 5.6% and decreases them in the South and East up to 8.7 and 1.6% respectively.

As a consequence, the role of free Eastern migration is to decrease the East's convergence and to increase the South's divergence. Thus EU-North can further consolidate its current hub position if the new members participate in a single market for labour. Accordingly, it would be in the interest of the EU's North to eliminate all restrictions to the free movement of Eastern workers. On the contrary, it would be advantageous for the EU's South to keep such restrictions and their elimination should therefore be accompanied of an adequate compensatory policy. Given the reinforcement of the centre/periphery pattern, a substantial role for the EU's Regional Policy can be envisaged in compensating the market forces that reduce overall regional convergence in the EU. The support of Regional Policy may be particularly important to compensate the market forces that tend to increase real wages where they are already higher. In addition, as the sectoral outcomes differ both within countries and for the EU as a whole, the Regional Policy should have an increasingly sectoral focus. Some sectors requiring intervention if migration is allowed would be the North's low scale sectors and especially the South's low scale, low skill sectors. Also in the South, even though migration reduces the fall in real wages in high scale, low skill sectors, such reduction affects 17% of Southern workers and should thus be borne in mind.

Our results come as a support of recent developments in both trade theory and the EU's Regional Policy. From the theory point of view, we provide empirical justification for the use of hybrid theories in explaining trade patterns. Our specifications bear such hybrid character between the more traditional trade theory based on endowments and the NEG based on economies of scale and transport costs. From the policy standpoint, the EU's Agenda 2000 has been a first step in the right direction by emphasising different roles for the EU's Regional Policy. The latter should in fact be a mix of policies, focussing on both income and education/skills, together with infrastructure development. This last aspect has successfully benefited Southern Europe and the same would be expected in Eastern Europe. What has been said in the European context may be extrapolated at the worldwide level. Developing countries that suffer from poor market access, low human capital endowments and low productivity are failing to converge. Institutions such as the World Bank would have a role, adopting a balanced mix of policies, fostering both income and education/skill levels, together with infrastructure improvement. In addition, the policy mix should be less general and pay attention to the particular characteristics of countries and sectors that it seeks to influence.

Finally, a note of caution as the migration projections used involve relatively small flows that gave rise to substantial differences among EU regions and sectors. However, the migration effects on trade and wages would be amplified with the volume of East-West migration. What has been said in the paper translates a conservative scenario. If we would follow an entirely theoretical perspective, arguing that migration would be as much as necessary to close the real wage gap, then the trade and wage effects would be much more sizeable and could have a tremendous impact. In addition, our wage sample only includes the three most central Eastern countries. If the Baltic and Balkan states were included, not only migration flows would be higher, but also a more negative effect on Eastern real wages could be expected. All in all, EU-North would gain the more, by attracting more firms and skilled workers, thus increasing the net exports of skill-intensive goods and the real wages in high skill sectors. In EU-South any trade gains would accrue mostly to Spain as a relatively large country, whereas real wages would be mostly affected in low scale, low skill sectors, that represent up to 60% of employment in the sectors studied. The East, even if gaining in trade terms, would suffer a real wage loss and moreover a brain drain that, if of sufficiently large proportions, could have very damaging consequences in the long-term.

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