Extending EU Single Market eastwards: sectoral trade and real wage effects

Extending the EU Single Market Eastwards: Sectoral Trade and Real Wage Effects[1]

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Abstract

In this paper we address the question of the impact of permitting free migration in an enlarged trading bloc. We estimate two sectoral equations for trade flows and real wages of three regional blocs of the enlarged EU that we defined as North (wealthiest EU), South (Greece, Portugal and Spain) and East (acceding Central and Eastern European countries). We then use the estimated coefficients to compute potential trade flows and real wages for these three groups under the two alternative scenarios of an enlargement with and without free movement of labour. A fully-fledge Single Market allows the North, with good market access and human capital endowments, to consolidate 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, though they decrease in low scale economies sectors. The South, with poor market access and human capital endowments, retains competitiveness in low scale economies, low skill-intensity sectors and sees an overall reduction in real wages, except in high scale economies, low skill-intensity sectors. The East, with poor market access but well endowed in human capital, has a marginal gain in trade terms but suffers a real wage loss. Moreover, skilled migration would cause a brain drain that, if of sufficiently large proportions, could have very damaging consequences in the long-term.

Keywords: EU enlargement, gravity model, human capital, labour demand, migration, wage equation
JEL: F1, F15, F22, J31, L6

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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. 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 of allowing free migration within an enlarged trading bloc.

The Eastern enlargement of the EU will be a reality in less than one year's time. Ten countries will become members of one of the largest trade blocs in the world and two more (Bulgaria and Romania) may be admitted by 2007. Thus, except for the Mediterranean islands of Cyprus and Malta, the new members will be Central and Eastern European Countries (CEECs).[4] When the transition process started in these countries more than a decade ago, great flows of East-West migration were anticipated and 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),[5] starting with the general non-application of the Single Market requirement of free movement of labour during the first two post-enlargement years. The restrictions to the free East-West movement of workers, ranging from safeguard clauses and flexible systems of transitional arrangements to the establishment of fixed quota systems can be maintained for up to seven years after the enlargement at the discretion of each current EU government. The real wages in the acceding countries are still on average five times lower than in Greece, Portugal and Spain, and ten times lower than in the wealthiest EU countries. The conditions are thus created for an Eastward relocation of firms and a Westward relocation of workers, the extent of which is influenced by the freeness of movement of both capital and labour. As the former moves freely, the latter still does not. Our objective in this paper is to determine the sectoral impact on trade and real wages of removing all restrictions to the Westward movement of labour, thus fully extending the EU Single Market to the new members.

We think of the enlarged EU as constituted of three country groups – EU-North[6] (N), EU-South[7] (S) and EU-East (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 labour depends on the location of

[4] In the chapter 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.
[5] Updated information on this topic is available online at http://www.europa.eu.int/comm/enlargement/negotiations/chapters/chap2/.
[6] We define EU-North as the group formed by all EU-15 countries except Greece, Portugal and Spain.
[7] We define EU-South as the group formed by Greece, Portugal and Spain.
[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.

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 to determine the impact of an Eastern enlargement with or without free migration of Eastern workers at both the sectoral and country group level. This methodology has been widely applied to EU-CEECs trade by, among others, Havrylyshyn and Pritchett (1991), Hamilton and Winters (1992), Winters and Wang (1992, 1994), Baldwin (1994), Gros and Gonciarz (1996), Schumacher (1997), Festoc (1997), Vittas and Mauro (1997), Maurel and Cheikbossian (1998), Fontagne et al. (1999), Nilsson (2000), Buch and Piazolo (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.

While using the traditional two-step methodology, we improve on it 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 a robust pattern of trade flows and real wages whether the new member countries participate solely in a customs union or in a fully-fledged single market. In trade terms, the North would have a surplus in all sectors except in low scale economies, low skill-intensity, and the South would have a deficit in all sectors except in low scale economies, low skill-intensity. 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. In the case of the CEECs, 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. All real wages increase over time, except in the South's high scale, low skill sectors, where real wages decrease by 7 to 10% adversely affecting roughly 17% of the workers in the sample. In the East real wages double in low scale sectors and triple in high scale sectors, converging towards Northern levels. On the contrary, in the South real wages diverge, except in low scale, low skill sectors. Still the South remains in an intermediary position, with the East lagging behind. The high scale economies, high skill-intensity sectors pay the highest wages, but in the South they are closely followed by low scale economies, low skill-intensity sectors. The East is the region with the highest sectoral disparity, as high scale sectors pay twice as much as low scale sectors.

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

In this section we present the four alternative gravity equations that are the basis of our empirical study of trade flows. 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:

$$\text{(1.1)}\quad \begin{aligned} TRADE^{k}_{ijt} &= POP_{it}\beta_1 + POP_{jt}\beta_2 + GDPPC_{it}\beta_3 + GDPPC_{jt}\beta_4 + HKPC_{it}\beta_5 + HKPC_{jt}\beta_6 + \\ &+ DIST_{ij}\beta_7 + BORDER_{ij}\beta_8 + EA_{ijt}\beta_9 + EURO_{ijt}\beta_{10} + u^{k}_{ijt} \end{aligned}$$

We modify equation (1.1) 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:

$$\text{(1.2)}\quad \begin{aligned} TRADE^{k}_{ijt} &= POP_{it}\beta_1 + POP_{jt}\beta_2 + (GDPPC_{it} * HKPC_{it})\beta_3 + (GDPPC_{jt} * HKPC_{jt})\beta_4 + \\ &+ (DIST_{ij} * HKPC_{it})\beta_5 + (DIST_{ij} * HKPC_{jt})\beta_6 + BORDER_{ij}\beta_7 + EA_{ijt}\beta_8 + EURO_{ijt}\beta_9 + u^{k}_{ijt} \end{aligned}$$

An alternative to equations (1.1) and (1.2) 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:

$$\text{(1.3)}\quad \begin{aligned} TRADE^{k}_{ijt} &= POP_{it}\beta_1 + POP_{jt}\beta_2 + ECDIST_{ijt}\beta_3 + HKDIST_{t}\beta_4 + \\ &+ DIST_{ij}\beta_5 + BORDER_{ij}\beta_6 + EA_{ijt}\beta_7 + EURO_{ijt}\beta_8 + u^{k}_{ijt} \end{aligned}$$

$$\text{(1.4)}\quad \begin{aligned} TRADE_{ijt}^{k} &= POP_{it}\beta_1 + POP_{jt}\beta_2 + (ECDIST_{ijt} * HKDIST_{ijt})\beta_3 + \\ &+ (DIST_{ij} * HKDIST_{ijt})\beta_5 + BORDER_{ij}\beta_6 + EA_{ijt}\beta_7 + EURO_{ijt}\beta_8 + u_{ijt}^{k} \end{aligned}$$

In specifications (1.1) and (1.2) 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 (1.3) and (1.4) 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 this section we model the relationship between real wages and goods and factors market potentials at a sectoral level. In a New Economic Geography (NEG) setting, 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:

$$\text{(2.1)}\quad MA_{ikt} = \sum_j GDP_j d_{ijk}^{-\alpha_X} \qquad \text{(2.2)}\quad SA_{jkt} = \sum_i GDP_i d_{ijk}^{-\alpha_M}$$

$$\text{(2.3)}\quad HKMA_{ikt} = \sum_j HK_j d_{ijk}^{-\alpha_X} \qquad \text{(2.4)}\quad HKSA_{jkt} = \sum_i HK_i d_{ijk}^{-\alpha_M}$$

(2.5) $\quad PRMA_{ikt} = \sum_{j} PR_{jk} d_{ijk}^{-\alpha_X}$ (2.6) $\quad PRSA_{jkt} = \sum_{i} PR_{ik} d_{ijk}^{-\alpha_M}$

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 (2.1)-(2.4), we use the assumption that the distance coefficient between two countries belonging to the same group is given by –1.

Applying the Hanson (1998) procedure, we estimate a panel wage equation. 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]

$$
\begin{aligned}
\ln\left(\frac{W_{ikt}}{P_{ikt}}\right) &= \beta_0 + \beta_1 \ln(GDP_{it}) + \beta_2 \ln(MA_{ikt}) + \beta_3 \ln(SA_{ikt}) + \beta_4 \ln(HK_{it}) + \\
&+ \beta_5 \ln(HKMA_{ikt}) + \beta_6 \ln(HKSA_{ikt}) + \beta_7 \ln(U_{it}) + \beta_8 \ln(AC_{it}) + \\
&+ \beta_9 \ln(PR_{ikt}) + \beta_{10} \ln(PRMA_{ikt}) + \beta_{11} \ln(PRSA_{ikt}) + \alpha_i + \mu_{ikt}
\end{aligned}
\tag{2.7}
$$

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.

As shown, 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

[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. However, as shown in Tables 7 and 8, the two variables behave differently. As an example, in the East the interaction variable is generally not significant, but the activity rate is very significant for all sectors.

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-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 Results

These shall not be described at length here as such is not the objective of the paper. We simply explain the set-up of the regressions and provide a flavour of the most important results. A full description of the data sources is provided in Appendix A. The full regression results are shown in Appendix B for the trade flows and in Appendix C for the real wages.

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 is more comprehensive than the wage data. Thus the wage results must be interpreted with caution as the initial data was interpolated and extrapolated to increase the number of observations, which as reported in Appendix C is still not more than 100, though it is not less than 26.[11]

[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 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.

Our main findings regarding trade flows can be summarised as follows. First, even though Spain is simultaneously the largest and richest country in the Southern group, its size and income have not significantly enhanced its trade with the East during the 1990s when compared to Portugal and Greece. Second, for the centre (North) size is a more important determinant of trade than income, whereas exactly the opposite is true for the Southern and Eastern peripheries, supporting the argument on the relevance of catching-up in boosting trade. Third, economic distance increases centre-periphery trade, but decreases periphery-periphery trade. Fourth, human capital endowments increase Eastern trade but decrease Southern trade. Generally, North-South trade is more determined by incomes than by endowments and it is likely to remain so. On the contrary, as Eastern incomes start rising, it is likely that the importance of endowments in North-East trade will increase. Fifth, the distance effects are very negative for the peripheries. When we control for differences in endowments, distance becomes less important as the former provide another motive for trade. Thus if the advantage in endowments is strong enough it may compensate for a disadvantage in market access. Finally, trade in sectors with high economies of scale is very much determined by country size, whereas income and human capital are especially important in sectors with high skill-intensity, though generally not relevant in low scale economies, low skill-intensity sectors. This result is robust to their interaction with distance. The Europe Agreements have been especially beneficial for trade in high scale economies sectors, whereas being a Euro zone country tends to have a higher impact on high-skill sectors.

Our main findings on real wages are as follows. First, though the overall relationship either between size, endowments or productivity and real wages is positive, these react more to size, less to endowments and even less to productivity. Second, in all countries market access increases wages of high scale sectors but decreases wages of low scale sectors. This is because the former gain more in scale economies than they lose in transport costs, whereas the opposite is true for the latter. Third, the model works particularly well for the East, with own size, endowments, productivity, unemployment and activity rates having a positive effect on real wages. The Eastern economies particularly benefit from opening to foreign markets, especially in high scale sectors. At the same time, they are subject to competition effects from foreign skills and productivity. Fourth, the model also shows that in the North own size and unemployment rate increase real wages, but these show threshold effects in own human capital, productivity and activity rates as high levels have already been achieved. As Northern countries are more productive than their EU neighbours, their real wages are not affected by other's productivity. However, real wages increase with the suppliers' size and skill but decrease with the markets' size and skill. Thus suppliers complement internal production, which competes in external markets. Fifth, real wages in the South are negatively affected by own size and unemployment as real wages increased the most in Portugal, the country with lowest levels of these variables. The size of markets and suppliers alone increases real wages, whereas the Southern countries are subject to a competition effect in productive markets.

3 Predictions

3.1 Methodology

The most widely used empirical methodology for predicting potential East-West 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.

The trade potentials method has been widely applied to EU-CEECs trade with contradictory results. On one hand, Havrylyshyn and Pritchett (1991), Hamilton and Winters (1992), Winters and Wang (1992, 1994), Baldwin (1994), Buch and Piazolo (2000) found that actual EU-CEECs trade was still below potential. On the other hand, Gros and Gonciarz (1996), Schumacher (1997), Festoc (1997), Vittas and Mauro (1997), Maurel and Cheikbossian (1998), Fontagne et al. (1999), Nilsson (2000) found that actual EU-CEECs trade was already above potential, following an "overshooting" reaction to the Europe Agreements. The divergence in empirical results is due mainly to the data used and the econometric methodology. First, the use of pre-transition data overestimated the trade potential. As an example, Gros and Gonciarz (1996) and Nilsson (2000) updated Baldwin's (1994) projections by replacing pre-transition with post-transition GDP data and found that actual trade would come very close to potential trade or even exceed it. The argument is that the East is already relatively open, so that trade expansion will be due mostly to income catching-up. Second, the main shortcoming of the econometric methodology is the general use of cross-section instead of panel data, since in bilateral gravity models only panel estimation produces unbiased results, as shown by Matyas (1997, 1998), Breuss and Egger (1999). These econometric problems, together with the use of pre-transition data, render unreliable many of the widely cited earlier estimates.

Several other studies improved the analysis in different directions, either by using only EU and CEEC data to compute the gravity parameters (Fidrmuc 1998, Buch and Piazolo 2000), or by modifying the gravity model in various ways. First, by assuming the form of Bergstrand's generalised gravity equation instead of the Linnemann model (Festoc 1997). Second, by incorporating Krugman's (1991) assumption that proximity increases trade because it decreases transport costs (Maurel and Cheikbossian 1998). Third, by applying the gravity equation to vertically differentiated products (Fontagne et al. 1998). Finally, by incorporating both geographical and economic distances (Vittas and Mauro 1997, Fontagne et al. 1999). Both studies conclude that the main determinant of East-West trade is geographical distance. In addition, Nilsson (2000) is the only study after Baldwin (1994) that computes potential trade with the East for each of the EU-15 countries. All other studies look exclusively at East-North trade, concluding that the highest gains accrue to Germany. This happens because East-West trade patterns reflected basically geographical proximity, so that the South would in fact not trade much with the East despite having a higher trade potential.

We follow the two-step methodology by estimating a gravity model and using the estimated coefficients to predict levels of trade. However, our study differ 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. Our methodology simultaneously recognises the structural differences in the determinants of trade patterns and assumes that the 1990s are good indicators of the determinants of trade patterns in the next decade. Moreover, we apply such 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 wages 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 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, Germany has recently implemented a migration policy 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

Lets us rename equations (1.1)-(1.4) as Models 1-4. In this paper we present only the trade predictions using the coefficients from Models 1 and 3.[12] 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. These are shown in Table 1.

Table 1: Predicted bilateral trade flows in 2010 (millions USD)

			N-E		N-S		S-E	
			Model 1	Model 3	Model 1	Model 3	Model 1	Model 3
No migration	High scale economies and high skill-intensity	Exports	176.191	70.61	1375.439	689.523	32.48	3.445
		Imports	33.475	13.086	375.479	162.949	8.804	1.865
	High scale economies and low skill-intensity	Exports	16.289	7.518	99.616	96.363	15.429	0.915
		Imports	10.880	6.546	51.133	42.671	3.841	0.933
	Low scale economies and high skill-intensity	Exports	2.877	1.626	26.715	9.152	1.597	0.105
		Imports	10.438	5.217	7.149	5.774	1.316	0.157
	Low scale economies and low skill-intensity	Exports	23.799	12.019	91.255	84.406	8.799	1.44
		Imports	34.039	22.128	120.49	146.074	7.53	1.334
Migration	High scale economies and high skill-intensity	Exports	175.270	70.53	1395.387	691.011	32.208	3.412
		Imports	33.588	13.074	374.955	163.156	8.517	1.809
	High scale economies and low skill-intensity	Exports	16.123	7.496	100.807	96.596	15.393	0.921
		Imports	11.138	6.554	52.813	42.78	3.731	0.929
	Low scale economies and high skill-intensity	Exports	2.962	1.625	26.665	9.166	1.576	0.104
		Imports	10.764	5.200	7.148	5.775	1.313	0.155
	Low scale economies and low skill-intensity	Exports	24.251	12.003	90.218	84.533	8.773	1.431
		Imports	35.399	22.082	119.978	145.988	7.523	1.324

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 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

[12] The complete prediction results may be obtained from the authors upon request.

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 and either low skill-intensity (South) or high skill-intensity (East). 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.

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.

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 row subtraction of imports to exports for each sector, thus obtaining the net exports represented in Table 2. 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 Davis (2000) call 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.

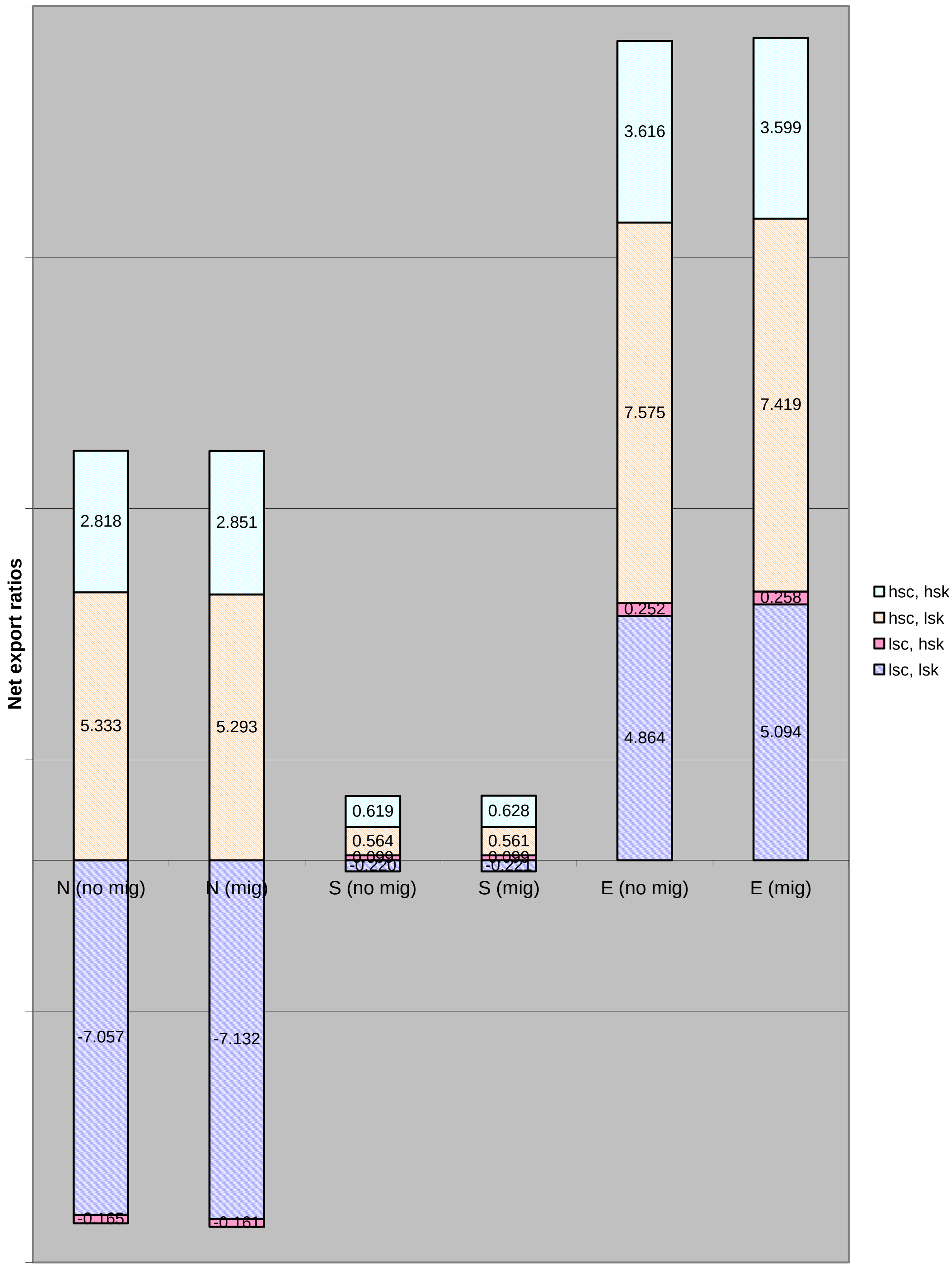
Table 2: Predicted intra-EU net exports by country blocs in 2010 (millions USD)

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

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.

Fig. 1: Predicted (2010) to actual (1999) net export ratios by country blocs without and with skilled migration



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 (2.1)-(2.6) were computed using the distance coefficients obtained from Models 1 and 3. 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 real wages 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 wages would vary across countries pairs and a country analysis would be necessary to draw further conclusions. 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.

Table 3: Predicted real wages by country blocs in 2010 (USD/h)

		North		South		East	
		Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
No migration	High scale economies and high skill-intensity	13.913	14.268	4.956	4.804	0.737	0.700
	High scale economies and low skill-intensity	12.282	12.847	3.078	3.092	0.727	0.479
	Low scale economies and high skill-intensity	10.347	10.236	3.023	2.891	0.392	0.404
	Low scale economies and low skill-intensity	10.381	10.005	4.399	2.852	0.364	0.423
Migration	High scale economies and high skill-intensity	15.019	15.202	4.847	4.735	0.725	0.689
	High scale economies and low skill-intensity	13.289	13.344	3.168	3.199	0.723	0.479
	Low scale economies and high skill-intensity	10.147	10.100	2.985	2.924	0.380	0.391
	Low scale economies and low skill-intensity	10.222	9.783	3.718	2.277	0.358	0.417

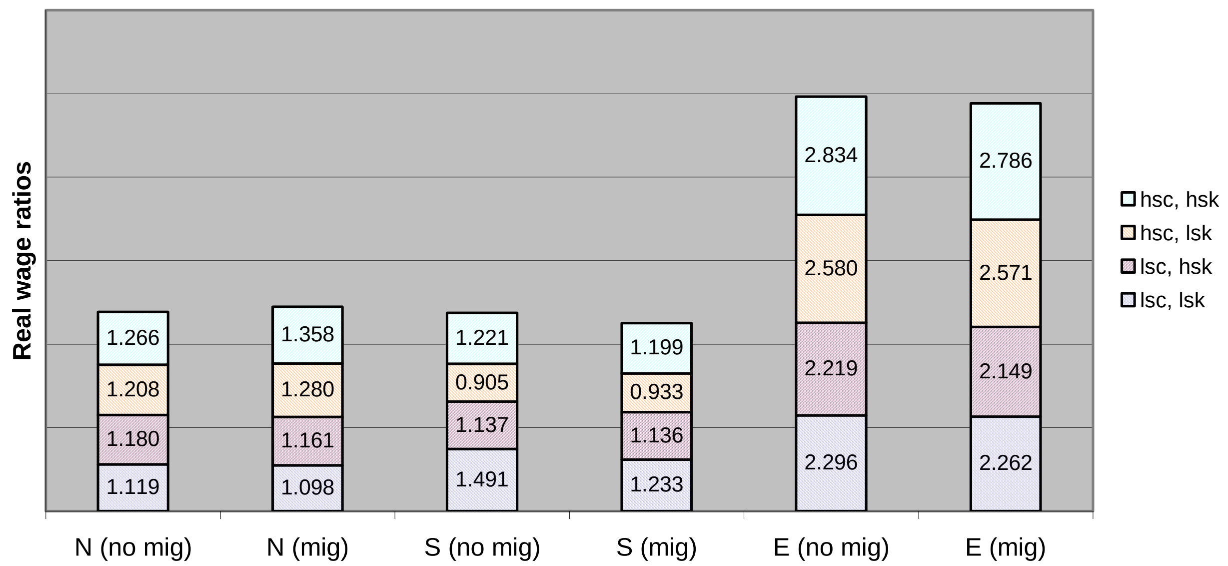
In Table 3, a robust wage pattern may be observed whether the new member countries will be participating solely in a customs union or in a fully-fledged single market. In an enlarged EU, the North would have the highest real wages, following on average a specific hierarchy: (i) high scale economies, 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.

Fig. 2: Predicted (2010) to actual (1999) real wage ratios by country blocs without and with skilled migration



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 for exports and imports. We further sum the values for all sectors and add the net exports effect that results from subtracting the imports effect to the exports effect. 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 given in Appendix D.

4.1 Trade Flows

Table 4: Migration effects on bilateral flows (millions USD)							
		N-E		N-S		S-E	
		Model 1	Model 3	Model 1	Model 3	Model 1	Model 3
High scale economies and high skill-intensity	Exports	-0.921	-0.08	19.948	1.487	-0.272	-0.032
	Imports	0.113	-0.012	-0.523	0.207	-0.287	-0.056
	Net exports	-1.034	-0.068	20.471	1.281	0.015	0.023
High scale economies and low skill-intensity	Exports	1.026	0.212	1.643	0.117	0.148	0.004
	Imports	1.937	0.118	1.082	0.23	-0.202	-0.015
	Net exports	-0.912	0.094	0.561	-0.113	0.35	0.019
Low scale economies and high skill-intensity	Exports	0.085	-0.001	-0.05	0.013	-0.02	-0.001
	Imports	0.325	-0.017	-0.001	0.001	-0.003	-0.002
	Net exports	-0.24	0.016	-0.049	0.012	-0.017	0.001
Low scale economies and low skill-intensity	Exports	0.452	-0.015	-1.037	0.127	-0.027	-0.008
	Imports	1.359	-0.046	-0.512	-0.086	-0.512	-0.086
	Net exports	-0.907	0.031	-0.525	0.212	0.485	0.077
All sectors	Exports	0.642	0.115	20.505	1.744	-0.171	-0.037
	Imports	3.735	0.042	0.045	0.352	-1.004	-0.158
	Net exports	-3.093	0.073	20.46	1.392	0.833	0.12

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 in 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.

Table 5: Migration effects on country groups (millions USD)							
		North		South		East	
		Model 1	Model 3	Model 1	Model 3	Model 1	Model 3
High scale economies and high skill-intensity	Exports	19.027	1.407	-0.795	0.175	-0.174	-0.068
	Imports	-0.411	0.194	19.662	1.432	-1.193	-0.112
	Net exports	19.438	1.213	-20.457	-1.257	1.019	0.044
High scale economies and low skill-intensity	Exports	1.026	0.212	1.643	0.117	0.148	0.004
	Imports	1.937	0.118	1.082	0.23	-0.202	-0.015
	Net exports	-0.912	0.094	0.561	-0.113	0.35	0.019
Low scale economies and high skill-intensity	Exports	0.036	0.012	-0.021	0.001	0.322	-0.019
	Imports	0.324	-0.016	-0.053	0.012	0.065	-0.002
	Net exports	-0.289	0.028	0.031	-0.011	0.257	-0.016
Low scale economies and low skill-intensity	Exports	-0.585	0.112	-0.539	-0.094	1.352	-0.056
	Imports	0.847	-0.132	-1.044	0.117	0.425	-0.024
	Net exports	-1.432	0.243	0.505	-0.211	0.927	-0.032
All sectors	Exports	19.504	1.743	0.287	0.198	1.649	-0.138
	Imports	2.698	0.165	19.647	1.79	-0.906	-0.153
	Net exports	16.805	1.578	-19.36	-1.593	2.554	0.015

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.

4.2 Real Wages

Table 6: Migration effects on country groups (% change relative to the no migration situation)								
	North		South		East		All countries (employment-weighted)	
	Model 1	Model 3	Model 1	Model 3	Model 1	Model 3	Model 1	Model 3
High scale economies and high skill-intensity	7.954	6.541	-2.201	-1.439	-1.706	-1.698	5.839	4.802
High scale economies and low skill-intensity	8.201	3.870	2.906	3.453	-0.513	-0.060	6.439	3.307
Low scale economies and high skill-intensity	-1.934	-1.326	-1.257	1.157	-3.204	-3.072	-2.033	-1.252
Low scale economies and low skill-intensity	-1.527	-2.215	-15.480	-20.150	-1.759	-1.238	-5.005	-6.393
All sectors (employment-weighted)	5.647	3.847	-7.132	-8.718	-1.600	-1.308	2.762	1.308

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.

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 upped bound on the East/West skill transfer.

Whether the new member countries will be participating solely in a customs union or in a full-fledge single market, the effects on specific sectors differ from what might be suggested by aggregate data. In an enlarged EU, the North would have a surplus in all sectors except in low scale economies, low skill-intensity, and the South would have a deficit in all sectors except in low scale economies, low skill-intensity. 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. Economies of scale together with transport costs prove to be an important determinant of trade patterns and, even if non-spatial trade barriers fade away with integration, spatial trade barriers will always have a role to play. In the case of the CEECs, 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.

The real wages of all countries and sectors increase over time, except in the South's high scale, low skill sectors, where the South has a double disadvantage: the North has a better location and the East has lower wages. As a consequence, Southern real wages in these sectors decrease by 7 to 10% adversely affecting roughly 17% of the workers in the sample. In the East real wages duplicate in low scale sectors and triplicate in high scale sectors. As a result, high scale sectors pay twice as much as low scale sectors, making the East the group with the highest sectoral disparity. Due to the high growth rates, Eastern real wages converge towards Northern levels. On the contrary, in the South real wages diverge, except in low scale, low skill sectors. As a result, though the high scale economies, high skill-intensity sectors pay the highest wages, they are closely followed by low scale economies, low skill-intensity sectors. Still the South remains in an intermediary position, with the East lagging behind. For both North and East, high scale real wages grow the most, indicating that the human capital endowment does not prevail over market access. In general, economies of scale together with transport costs prove to be an important determinant of wage patterns and, even if non-spatial trade barriers fade away with integration, spatial trade barriers will always have a role to play.

The impact of free Eastern migration on trade shows a distinct difference between 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. 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.

The free Eastern 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, the role of free Eastern migration is to decrease the East's convergence and to increase the South's divergence, thus strengthening the North's position as a hub. This gain is due to an increase of 8% in high scale sectors, which employ 75% of North's industrial workers. As firms and workers agglomerate in EU-North and, to a lesser extent in EU-South, a rise in wages can be explained through economies of scale and naturally those sectors with highest economies of scale register the highest gains. This argument is supported by our finding that skilled migration substantially increases the North's net exports in high scale, high skill sectors to the South. 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 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. The South lacks the North's market access advantage and thus it suffers an overall loss whereas the North has an overall gain. 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.

Thus EU-North can further consolidate its current hub position if the new members participate in a single market for labour. 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 is 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 the real wages of the high scale economies sectors in which it has a natural advantage.

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 new economic geography 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. The excessive focus on one of the policies without the right balance may do more harm than good. 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.

The paper shows that it is in the interest of the EU's North to eliminate all restrictions to the free movement of Eastern workers. On the contrary, it shows that 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 particular, even if the real wages in the EU as a whole are up to 2.7% higher with free migration than without it, we should bear in mind the loss of up to 8.7% in the South and 1.6% in the East induced by migration. 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.

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.

References

Baldwin, R., Forslid, R., Haaland, J. and Midelfart-Knarvik, K. (2000) EU Integration and Outsiders: A Simulation Study of Industrial Location, *Norwegian School of Economics and Business Administration Discussion Paper*, 02/2000.

Baldwin, R. E. (1994) *Towards an Integrated Europe,* Centre for Economic Policy Research, London.

Boeri, T. and Brucker, H. (2000) *The Impact of Eastern Enlargement on Employment and Labour Markets in the EU Member States,* European Integration Consortium, Berlin and Milano.

Breuss, F. and Egger, P. (1999) How Reliable Are Estimations of East-West Trade Potentials Based on Cross-Section Gravity Analyses?, *Empirica,* **26,** 81-94.

Buch, C. and Piazolo, D. (2000) Capital and Trade Flows in Europe and the Impact of Enlargement, *Kiel Working Paper*, 1001.

Cadot, O. and Melo, J. d. (1996) The Europe Agreements and EU-LDC Relations: The Case of France, In *Transition in Central and Eastern Europe: Implications for EU-LDC Relations*(Eds, Kuyvenhoven, A., Memedovic, O. and Windt, N. v. d.) Kluwer Academic, Dordrecht, pp. 211-240.

Commission, E. (2001) *The Free Movement of Workers in the Context of Enlargement,* DG-V, Brussels.

Corado, C. (1994) Textiles and Clothing Trade with Central and Eastern Europe: Impact on Members of the EC, *CEPR Discussion Paper,* **1004**.

Davis, D. (2000) Understanding international trade patterns: advances of the 1990s, *Integration & Trade,* **4,** 61-79.

deMelo, J., Miguet, F. and Muller, T. (2002) The political economy of EU enlargement: lessons from Switzerland, *CEPR DP 3449*.

Festoc, F. (1997) Le Potentiel de Croissance du Commerce des Pays d'Europe Centrale et Orientale avec la France et ses Principaux Partenaires, *Economie et Prevision,* **128,** 161-81.

Fidrmuc, J. (1998) Application of Gravity Models to Commodity Groups and Trade Projections between the EU and the CEEC, *mimeo, Institute for Advanced Studies, Vienna*.

Fontagne, L., Freudenberg, M. and Pajot, M. (1999) Le Potentiel d'Echanges entre l'Union Europeene et les PECO, *Revue Economique,* **50,** 1139-1168.

Fontagne, L., Freudenberg, M. and Peridy, N. (1998) Commerce International et Structures de Marche: Une Verification Empirique, *Economie et Prevision,* **135,** 147-67.

Gros, D. and Gonciarz, A. (1996) A Note on the Trade Potential of Central and Eastern Europe, *European Journal of Political Economy,* **12,** 709-721.

Hamilton, C. and Winters, A. (1992) Trade with Eastern Europe, *Economic Policy***,** 77-116.

Hanson, G. (1997) Increasing Returns, Trade and the Regional Structure of Wages, *Economic Journal,* **107,** 113-133.

Hanson, G. (1998) Market Potential, Increasing Returns and Geographic Concentration, *NBER WP 6429*.

Harris, C. (1954) The Market as a Factor in the Localisation of Industry in the United States, *Annals of the Association of American Geographers,* **64,** 315-48.

Havrylyshyn, O. and Pritchett, L. (1991) European Trade Patterns after the Transition, *World Bank Working Paper***,** 748.

Hunt, G. and Mueller, R. (2002) A Methodology for Estimating Returns to Skills for Canadian Provinces and US States, *Journal of Regional Science,* **42,** 127-43.

Krugman, P. (1991) Increasing Returns and Economic Geography, *Journal of Political Economy,* **99,** 483-499.

Krugman, P. (1993) The Hub Effect, or Threeness in Interregional Trade, In *Theory, Policy and Dynamics in International Trade*(Eds, Ethier, W., Helpman, E. and Neary, J. P.) CUP, Cambridge (UK), pp. 29-37.

Linder, S. (1961) *An Essay on Trade and Transformation,* Wiley, New York.

Mastropasqua, C. and Rolli, V. (1994) Industrial Countries' Protectionism with Respect to Eastern Europe: The Impact of the Association Agreements Concluded with the EC on the Exports of Poland, Czechoslovakia and Hungary, *World Economy,* **17,** 151-69.

Matyas, L. (1997) Proper Econometric Specification of the Gravity Model, *World Economy,* **20,** 363-68.

Matyas, L. (1998) The Gravity Model: Some Econometric Considerations, *World Economy,* **21,** 397-401.

Maurel, M. and Cheikbossian, G. (1998) The New Geography of Eastern European Trade, *Kyklos,* **51,** 45-71.

Monastiriotis, V. (2002) Human capital and wages: evidence for external effects from the UK regions, *Applied Economics Letters,* **9,** 843-46.

Nilsson, L. (2000) Trade Integration and the EU Membership Criteria, *European Journal of Political Economy,* **16,** 807-27.

Pratten, C. (1988) A Survey of Economies of Scale, In *Research on the Cost of Non-Europe*, Vol. 2 (Ed, CEC) CEC, Luxembourg.

Redding, S. and Venables, A. (2001) Economic Geography and International Inequality, *CEP DP 495*.

Rollo, J. and Smith, A. (1993) The Political Economy of Eastern European Trade with the EC: why so sensitive?, *Economic Policy,* **16,** 139-181.

Schumacher, D. (1997) Impact on German Trade of Increased Division of Labour with Eastern Europe, In *Europe's Economy Looks East*(Ed, Black, S. W.) Cambridge University Press, Cambridge (UK), pp. 100-164.

Venables, A. (2001) Geography and International Inequalities: the Impact of New Technologies, *CEP DP 507*.

Vittas, H. and Mauro, P. (1997) Potential Trade with Core and Periphery: Industry Differences in Trade Patterns, In *Europe's Economy Looks East*(Ed, Black, S. W.) Cambridge University Press, Cambridge (UK), pp. 67-99.

Weise, C., Bachtler, J., Downes, R., McMaster, I. and Toepel, K. (2001) *The Impact of EU Enlargement on Cohesion,* DIW/EPRC, Berlin and Glasgow.

Winters, A. and Wang, Z. (1992) The Trading Potential of Eastern Europe, *Journal of Economic Integration,* **7,** 113-36.

Winters, A. and Wang, Z. (1994) *Eastern Europe's International Trade,* Manchester University Press, Manchester.

Appendix A

Data Sources

Data is taken for the transition period (1990-99), for the following aggregates:

- 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);
- 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);
- 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 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/).

Appendix B
Trade Flows: Prais-Winsten Regression with Panel-specific AR(1) Correlated Panels Corrected Standard Errors †

Chemicals	North-East								North-South								South-East							
	Dependent Variable: Export Value				Dependent Variable: Import Value				Dependent Variable: Export Value				Dependent Variable: Import Value				Dependent Variable: Export Value				Dependent Variable: Import Value			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
popi	1.088***	1.094***	1.105***	1.082***	1.290***	1.246***	1.249***	1.301***	0.998***	0.984***	1.178***	1.116***	1.109***	1.061***	0.979***	0.949***	2.524***	1.570***	2.437***	1.549***	1.619**	0.701***	1.697***	1.856***
	(0.050)	(0.057)	(0.055)	(0.058)	(0.054)	(0.070)	(0.066)	(0.062)	(0.061)	(0.066)	(0.062)	(0.045)	(0.072)	(0.069)	(0.050)	(0.063)	(0.648)	(0.251)	(0.299)	(0.326)	(0.790)	(0.276)	(0.357)	(0.241)
popj	1.276***	1.304***	0.987***	0.985***	1.397***	1.276***	0.949***	0.893***	0.033	0.115	0.978***	1.130***	0.412	1.053***	1.896***	1.766***	1.077***	0.992***	0.326	0.249	1.480***	1.360***	1.280***	1.147***
	(0.134)	(0.151)	(0.114)	(0.126)	(0.103)	(0.114)	(0.071)	(0.069)	(0.222)	(0.157)	(0.093)	(0.059)	(0.341)	(0.181)	(0.089)	(0.164)	(0.128)	(0.131)	(0.245)	(0.338)	(0.149)	(0.128)	(0.135)	(0.128)
gdppci	2.019***				-0.044				0.259				0.362				1.185				-1.264			
	(0.368)				(0.517)				(0.240)				(0.384)				(2.228)				(3.228)			
gdppcj	0.982***				0.954***				3.054***				4.657***				1.094***				0.379**			
	(0.217)				(0.188)				(0.887)				(1.288)				(0.279)				(0.183)			
gdppci*hkpci		1.821***				1.125***				0.031				0.133				5.199***				2.516***		
		(0.206)				(0.379)				(0.325)				(0.387)				(0.837)				(0.656)		
gdppcj*hkpcj		0.968***				0.862***				2.958***				1.336***				0.980***				0.329*		
		(0.207)				(0.184)				(0.499)				(0.523)				(0.282)				(0.188)		
ecdist			1.583***				-0.053				0.518***				0.335***				-0.131				-0.986***	
			(0.378)				(0.325)				(0.124)				(0.092)				(0.524)				(0.382)	
ecdist*hkdist				1.296***				0.786***				0.451***				0.311**				2.075***				-0.659
				(0.167)				(0.182)				(0.098)				(0.129)				(0.803)				(0.591)
hkpci	0.196				0.648*				1.276***				1.171***				3.383***				-0.030			
	(0.126)				(0.356)				(0.203)				(0.307)				(0.623)				(0.739)			
hkpcj	1.275***				1.437***				-0.358*				-1.293***				2.110***				1.855***			
	(0.306)				(0.438)				(0.188)				(0.247)				(0.692)				(0.509)			
hkdist			-0.007				-0.072				0.026				0.093**				0.148				0.361***	
			(0.036)				(0.054)				(0.026)				(0.049)				(0.115)				(0.122)	
dist*hkpci		-1.537***				-1.093***				1.234***				1.579***				-2.253**				-3.209***		
		(0.222)				(0.372)				(0.438)				(0.593)				(1.032)				(0.713)		
dist*hkpcj		0.447*				-0.011				-3.281***				-2.333***				0.539				0.986**		
		(0.235)				(0.325)				(0.575)				(0.607)				(0.674)				(0.513)		
dist*hkdist				-1.276***				-0.945***				-0.454***				-0.197				-2.105***				0.648
				(0.182)				(0.176)				(0.099)				(0.162)				(0.712)				(0.553)
dist	-1.030***		-1.141***		-1.426***		-1.398***		-2.072***		-1.224***		-0.331		-0.050		-1.574***		-3.587***		-2.070***		-1.455***	
	(0.326)		(0.278)		(0.363)		(0.315)		(0.228)		(0.166)		(0.282)		(0.405)		(0.467)		(0.480)		(0.356)		(0.156)	
border	0.929*	0.821**	0.872**	0.637***	0.406	0.641***	0.018	1.167***	-0.049	-0.146	-0.073	0.187*	0.622***	0.771***	0.450*	0.560*	0.304	0.413	-0.905	0.997	0.234	0.478	1.849***	5.373***
	(0.493)	(0.354)	(0.380)	(0.230)	(0.284)	(0.243)	(0.464)	(0.239)	(0.100)	(0.136)	(0.130)	(0.105)	(0.161)	(0.161)	(0.253)	(0.300)	(0.694)	(0.704)	(0.577)	(1.084)	(0.407)	(0.397)	(0.274)	(1.061)
EA	0.688***	0.686***	0.788***	0.778***	0.134	0.152	0.261*	0.237*									0.951***	0.836***	1.733***	1.273***	0.406**	0.317*	0.482**	0.371*
	(0.200)	(0.200)	(0.197)	(0.207)	(0.164)	(0.163)	(0.150)	(0.145)									(0.210)	(0.194)	(0.225)	(0.242)	(0.200)	(0.180)	(0.212)	(0.223)
EURO									-0.025	-0.021	0.107	0.114	-0.103	0.119	0.101	0.103								
									(0.082)	(0.079)	(0.113)	(0.110)	(0.129)	(0.129)	(0.128)	(0.133)								
constant	-39.087***	-36.448***	-26.093***	-21.698***	-19.577**	-33.669***	-10.697***	-22.605***	-11.710*	-9.650***	-12.863***	-19.556***	-53.693***	-24.331***	-32.731***	-28.659***	-37.671***	-59.290***	-4.375	-20.556***	-6.633***	-27.111***	-13.132**	-34.425***
	(8.313)	(4.718)	(6.766)	(2.478)	(9.149)	(4.058)	(5.104)	(1.096)	(6.518)	(2.720)	(3.674)	(1.382)	(7.309)	(3.372)	(3.736)	(3.396)	(12.990)	(6.114)	(3.581)	(6.441)	(18.444)	(5.585)	(5.442)	(4.328)
No obs	915	915	915	915	902	902	902	902	320	320	320	320	321	321	321	321	239	239	239	239	226	226	226	226
R2	0.9811	0.9811	0.9799	0.9775	0.962	0.963	0.967	0.966	0.998	0.998	0.996	0.998	0.993	0.992	0.991	0.991	0.9373	0.936	0.9292	0.9367	0.958	0.955	0.964	0.973
Wald Chi2	2740.17***	2657.21***	3974.91***	2401.81***	3980.39***	3184.75***	3105.07***	2686.67***	4846.72***	5112.73***	1322.02***	3234.27***	8188.41***	7243.64***	1681.05***	1985.75***	1137.35***	757.59***	931.52***	385.02***	1322.41***	3156.34***	1680.52***	1159.86***

† Standard errors are shown in parenthesis. *, ** and *** represent significance at 10, 5 and 1%, respectively.

Leather & Footwear	North-East								North-South								South-East							
	Dependent Variable: Export Value				Dependent Variable: Import Value				Dependent Variable: Export Value				Dependent Variable: Import Value				Dependent Variable: Export Value				Dependent Variable: Import Value			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
popi	1.556***	1.568***	1.582***	1.532***	1.309***	1.292***	1.307***	1.349***	1.213***	1.231***	1.106***	1.458***	1.173***	1.203***	1.209***	1.485***	-0.577	0.637**	1.286***	0.691**	0.551	1.665***	1.883***	1.513***
	(0.073)	(0.078)	(0.070)	(0.079)	(0.053)	(0.070)	(0.060)	(0.073)	(0.070)	(0.069)	(0.116)	(0.088)	(0.081)	(0.084)	(0.099)	(0.169)	(0.722)	(0.320)	(0.314)	(0.355)	(1.229)	(0.681)	(0.417)	(0.516)
popj	0.776***	0.686***	0.679***	0.595***	0.932***	0.991***	0.980***	1.050***	-0.944**	-1.177***	-0.626***	-0.079	-0.539	0.759***	1.734***	2.281***	0.759***	0.855***	0.624***	0.541**	0.836**	1.026***	1.137***	0.843***
	(0.109)	(0.095)	(0.067)	(0.068)	(0.199)	(0.156)	(0.115)	(0.113)	(0.431)	(0.315)	(0.240)	(0.215)	(0.606)	(0.208)	(0.179)	(0.284)	(0.196)	(0.215)	(0.215)	(0.230)	(0.365)	(0.310)	(0.253)	(0.250)
gdppci	0.286				0.751				0.594				3.115***				6.667**				2.255			
	(0.467)				(0.739)				(0.380)				(0.586)				(3.031)				(4.217)			
gdppcj	0.323*				0.807***				0.772				5.372**				1.049***				0.976			
	(0.187)				(0.200)				(1.604)				(2.296)				(0.163)				(0.699)			
gdppci*hkpci		1.096***				0.332				0.539				2.623***				1.418*				-1.978		
		(0.312)				(0.283)				(0.383)				(0.630)				(0.774)				(1.709)		
gdppcj*hkpcj		0.327*				0.785***				1.811**				-0.934				1.218***				1.248**		
		(0.200)				(0.209)				(0.786)				(0.905)				(0.171)				(0.649)		
ecdist			-0.101				-0.681				0.341***				0.576***				-0.721				-2.024***	
			(0.375)				(0.463)				(0.117)				(0.177)				(0.725)				(0.514)	
ecdist*hkdist				1.692***				0.626***				0.396**				0.538***				0.613				-1.404**
				(0.203)				(0.156)				(0.177)				(0.182)				(0.448)				(0.619)
hkpci	-0.613***				0.152				0.113				0.837***				-0.806				-2.117*			
	(0.179)				(0.362)				(0.420)				(0.274)				(0.951)				(1.112)			
hkpcj	0.503				-0.736				-0.428				-4.177***				0.622				-0.017			
	(0.550)				(0.572)				(0.343)				(0.614)				(0.798)				(1.264)			
hkdist			-0.025				0.046				-0.048				0.198***				0.273				0.658***	
			(0.067)				(0.072)				(0.042)				(0.075)				(0.176)				(0.181)	
dist*hkpci		-1.894***				0.023				-0.535				-1.376*				-1.411				0.463		
		(0.324)				(0.350)				(0.588)				(0.825)				(1.127)				(2.372)		
dist*hkpcj		-0.410				-1.147***				-2.388***				-2.048***				0.315				-0.654		
		(0.262)				(0.378)				(0.845)				(0.801)				(0.746)				(1.108)		
dist*hkdist				-1.802***				-0.708***				-0.527***				-0.374*				-0.370				1.789***
				(0.235)				(0.159)				(0.180)				(0.214)				(0.386)				(0.555)
dist	-2.515***		-2.570***		-0.984***		-1.442***		-3.045***		-3.211***		-2.800***		-2.984**		-1.173**		-0.770**		-0.325		0.371	
	(0.299)		(0.284)		(0.171)		(0.120)		(0.648)		(0.559)		(0.567)		(1.429)		(0.555)		(0.396)		(1.489)		(0.498)	
border	-0.514	-0.219	-0.642*	0.924***	1.520***	1.292**	0.690*	2.477***	-0.590**	-0.589**	-0.665**	0.134	-1.090***	-1.120***	-1.230	-0.472	2.230***	1.800**	2.562***	3.070***	2.472	2.333	2.284***	4.207***
	(0.394)	(0.307)	(0.384)	(0.326)	(0.444)	(0.568)	(0.392)	(0.719)	(0.280)	(0.271)	(0.333)	(0.343)	(0.360)	(0.373)	(0.902)	(0.510)	(0.760)	(0.767)	(0.426)	(0.535)	(2.313)	(2.431)	(0.877)	(1.034)
EA	0.595***	0.586***	0.607***	0.553***	0.509***	0.495***	0.583***	0.540***									0.296	0.288	0.559**	0.372	1.003***	1.097***	0.989***	0.969***
	(0.153)	(0.152)	(0.144)	(0.133)	(0.195)	(0.194)	(0.187)	(0.185)									(0.255)	(0.246)	(0.233)	(0.233)	(0.276)	(0.287)	(0.274)	(0.265)
EURO									0.316**	0.265*	0.315**	0.333**	-0.012	0.323	0.014	0.040								
									(0.163)	(0.161)	(0.137)	(0.143)	(0.258)	(0.259)	(0.218)	(0.226)								
constant	-13.199**	-23.828***	-5.044	-26.620***	-31.529***	-25.167***	-6.562***	-27.212***	19.922	12.552**	28.556***	-7.705*	-66.085***	-14.108***	-14.883	-48.054***	-53.001***	-22.052***	-5.760	-10.075	-44.085***	-25.263*	-19.665**	-26.378***
	(6.108)	(3.688)	(4.752)	(1.371)	(7.646)	(3.313)	(5.197)	(1.362)	(12.944)	(5.727)	(8.631)	(4.141)	(14.194)	(2.968)	(10.528)	(7.602)	(18.017)	(7.933)	(9.274)	(8.758)	(20.446)	(14.282)	(8.624)	(10.352)
No obs	844	844	844	844	865	865	865	865	320	320	320	320	318	318	318	318	226	226	226	226	219	219	219	219
R2	0.9621	0.9599	0.9598	0.954	0.952	0.952	0.952	0.956	0.982	0.982	0.978	0.972	0.979	0.979	0.979	0.976	0.9363	0.9336	0.9476	0.9347	0.851	0.869	0.884	0.885
Wald Chi2	2890.44***	1946.36***	1797***	1221.97***	4203.49***	2492.67***	2020.68***	1561.35***	2003.04***	1928.10***	856.18***	449.71***	1266.09***	1417.04***	718.97***	499.56***	600.83***	800***	784.3***	544.78***	52.21***	64.49***	57.11***	44.56***

Machinery	North-East								North-South								South-East							
	Dependent Variable: Export Value				Dependent Variable: Import Value				Dependent Variable: Export Value				Dependent Variable: Import Value				Dependent Variable: Export Value				Dependent Variable: Import Value			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
popi	0.946*** (0.052)	0.927*** (0.050)	0.938*** (0.059)	0.931*** (0.058)	1.140*** (0.074)	1.119*** (0.069)	1.149*** (0.098)	1.010*** (0.079)	1.047*** (0.044)	1.042*** (0.035)	0.995*** (0.025)	1.007*** (0.028)	1.220*** (0.071)	1.135*** (0.044)	1.075*** (0.060)	1.038*** (0.057)	0.048 (0.535)	1.906*** (0.182)	2.665*** (0.204)	2.393*** (0.236)	-1.994*** (0.723)	-0.052 (0.256)	1.825*** (0.465)	0.201 (0.825)
popj	1.318*** (0.111)	1.260*** (0.118)	0.790*** (0.098)	0.833*** (0.121)	1.921*** (0.182)	1.921*** (0.184)	1.391*** (0.108)	1.434*** (0.103)	-0.164 (0.204)	0.732*** (0.114)	1.290*** (0.050)	1.318*** (0.047)	0.072 (0.335)	1.355*** (0.103)	1.933*** (0.087)	1.791*** (0.055)	0.839*** (0.139)	1.173*** (0.132)	0.838*** (0.102)	1.002*** (0.125)	1.961*** (0.186)	2.339*** (0.217)	2.045*** (0.256)	2.365*** (0.435)
gdppci	1.471*** (0.409)				1.701*** (0.461)				0.894*** (0.264)				0.267 (0.397)				9.708*** (2.162)				10.595*** (2.880)			
gdppcj	0.960*** (0.180)				2.050*** (0.232)				5.003*** (0.863)				6.844*** (1.353)				0.800*** (0.231)				1.940*** (0.327)			
gdppci*hkpci		1.928*** (0.306)				1.472*** (0.245)				0.694*** (0.212)				0.114 (0.320)				2.342*** (0.576)				2.186*** (0.562)		
gdppcj*hkpcj		0.976*** (0.174)				2.045*** (0.236)				0.875** (0.364)				0.757 (0.506)				1.063*** (0.219)				2.402*** (0.365)		
ecdist			0.944* (0.494)				1.575*** (0.526)				0.289*** (0.070)				0.225*** (0.066)				-0.915*** (0.346)				-3.210*** (0.512)	
ecdist*hkdist				1.503*** (0.181)				1.048*** (0.220)				0.280*** (0.072)				0.227*** (0.067)				-0.952* (0.524)				0.736 (2.111)
hkpci	0.361*** (0.145)				0.489*** (0.158)				0.409** (0.178)				0.707*** (0.187)				-1.176*** (0.411)				-3.812*** (1.044)			
hkpcj	1.778*** (0.284)				1.831*** (0.369)				-1.119*** (0.180)				-2.123*** (0.288)				-0.154 (0.740)				1.814*** (0.495)			
hkdist			-0.060 (0.051)				0.067 (0.067)				-0.041 (0.028)				0.018 (0.047)				0.165*** (0.068)				0.724*** (0.132)	
dist*hkpci		-1.850*** (0.275)				-0.891*** (0.315)				0.126 (0.292)				1.323*** (0.454)				-2.739*** (0.791)				-4.996*** (0.672)		
dist*hkpcj		0.563** (0.279)				-0.026 (0.297)				-1.270*** (0.372)				-2.083*** (0.419)				0.635 (0.604)				0.870* (0.466)		
dist*hkdist				-1.560*** (0.184)				-0.975*** (0.231)				-0.330*** (0.085)				-0.195** (0.097)				0.764* (0.445)				-0.054 (2.148)
dist	-1.418*** (0.220)		-1.754*** (0.195)		-0.840** (0.434)		-0.766* (0.412)		-0.543*** (0.190)		-0.595*** (0.179)		-0.319 (0.233)		0.236 (0.213)		-2.021*** (0.307)		-1.732*** (0.257)		-4.608*** (0.736)		-2.172*** (0.862)	
border	0.699*** (0.278)	0.828*** (0.233)	-0.018 (0.254)	0.485** (0.237)	2.314*** (0.673)	2.073*** (0.557)	3.120*** (0.650)	2.457*** (0.353)	0.067 (0.155)	0.002 (0.105)	-0.204** (0.088)	-0.103 (0.076)	0.470** (0.245)	0.721*** (0.134)	0.828*** (0.083)	0.740*** (0.089)	1.301** (0.615)	0.346 (0.567)	1.081*** (0.430)	4.687*** (0.964)	-2.942*** (0.732)	-2.903*** (0.478)	-0.500 (1.495)	1.954 (3.602)
EA	0.727*** (0.153)	0.730*** (0.149)	0.876*** (0.189)	0.821*** (0.188)	0.610*** (0.145)	0.633*** (0.147)	0.802*** (0.162)	0.813*** (0.169)									1.156*** (0.202)	1.231*** (0.211)	1.527*** (0.191)	1.359*** (0.212)	0.141 (0.206)	0.306 (0.227)	0.463** (0.227)	0.387 (0.253)
EURO									-0.035 (0.076)	0.197** (0.091)	0.270*** (0.096)	0.274*** (0.097)	-0.027 (0.109)	0.349** (0.151)	0.273** (0.133)	0.277** (0.135)								
constant	-26.176*** (6.890)	-32.096*** (4.664)	-8.846 (6.692)	-16.329*** (2.602)	-54.807*** (9.506)	-50.836*** (4.233)	-36.403*** (8.850)	-27.950*** (2.077)	-49.544*** (5.231)	-15.514*** (0.964)	-16.776*** (1.630)	-19.383*** (0.752)	-73.127*** (8.921)	-26.250*** (1.448)	-36.033*** (3.384)	-29.752*** (1.415)	-86.894*** (12.279)	-47.528*** (4.710)	-22.006*** (2.688)	-40.119*** (4.622)	-70.290*** (15.811)	-29.543*** (6.481)	0.028 (9.888)	-30.791** (15.331)
No obs	920	920	920	920	909	909	909	909	320	320	320	320	321	321	321	321	236	236	236	236	239	239	239	239
R2	0.9858	0.9859	0.9772	0.9766	0.971	0.974	0.964	0.965	0.998	0.998	0.998	0.998	0.995	0.994	0.993	0.993	0.9698	0.9668	0.9661	0.9615	0.926	0.950	0.936	0.933
Wald Chi2	1472.36***	1227.07***	3461.76***	3094.16***	1281.95***	1836.61***	667.5***	820.64***	10159.06**	20836.64**	6042.46***	4836.15***	4853.60***	11320.56**	15726.97**	14249.55**	5190.27***	4739.36***	1124.98***	427.5***	670.01***	431.15***	573.07***	282.19***

Metals	North-East								North-South								South-East							
	Dependent Variable: Export Value				Dependent Variable: Import Value				Dependent Variable: Export Value				Dependent Variable: Import Value				Dependent Variable: Export Value				Dependent Variable: Import Value			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
popi	1.201***	1.203***	1.100***	1.106***	1.590***	1.591***	1.538***	1.531***	1.489***	1.468***	1.544***	1.479***	0.989***	1.002***	1.052***	1.087***	-0.960	0.936**	1.459***	1.246***	-0.036	0.131	1.536***	0.450
	(0.075)	(0.075)	(0.092)	(0.094)	(0.084)	(0.083)	(0.082)	(0.075)	(0.060)	(0.056)	(0.095)	(0.060)	(0.035)	(0.032)	(0.026)	(0.027)	(0.803)	(0.485)	(0.377)	(0.473)	(0.854)	(0.408)	(0.584)	(0.427)
popj	1.297***	1.332***	0.902***	0.910***	1.447***	1.447***	1.198***	1.118***	1.261***	1.452***	1.339***	1.375***	1.463***	1.181***	1.625***	1.660***	1.255***	1.538***	0.962***	0.820***	1.885***	1.830***	1.573***	1.492***
	(0.133)	(0.140)	(0.087)	(0.098)	(0.099)	(0.105)	(0.121)	(0.114)	(0.389)	(0.149)	(0.071)	(0.084)	(0.354)	(0.114)	(0.076)	(0.073)	(0.302)	(0.254)	(0.207)	(0.177)	(0.468)	(0.390)	(0.297)	(0.256)
gdppci	2.819***				1.681***				1.775***				0.450*				11.483***				4.652			
	(0.394)				(0.523)				(0.306)				(0.242)				(2.939)				(3.572)			
gdppcj	0.958***				1.264***				-0.219				-0.246				0.206				1.169***			
	(0.239)				(0.194)				(1.490)				(1.515)				(0.277)				(0.420)			
gdppci*hkpci		2.502***				1.701***				1.805***				0.456*				3.321***				3.976***		
		(0.196)				(0.345)				(0.286)				(0.241)				(0.820)				(0.816)		
gdppcj*hkpcj		0.953***				1.263***				-1.019**				1.028***				0.488				1.147***		
		(0.236)				(0.194)				(0.466)				(0.414)				(0.319)				(0.353)		
ecdist			1.688***				0.890**				0.363***				0.183***				0.384				-1.249***	
			(0.345)				(0.387)				(0.100)				(0.060)				(0.460)				(0.465)	
ecdist*hkdist				2.016***				1.542***				0.428***				0.173***				0.792*				2.151***
				(0.128)				(0.119)				(0.107)				(0.047)				(0.473)				(0.549)
hkpci	0.114				0.793***				0.367				0.821***				0.684				-1.130			
	(0.174)				(0.210)				(0.246)				(0.173)				(0.841)				(1.098)			
hkpcj	1.036***				0.433				-0.272				0.154				-0.228				1.762*			
	(0.310)				(0.440)				(0.375)				(0.212)				(1.000)				(0.971)			
hkdist			0.067*				-0.138***				0.015				-0.004				-0.117				0.074	
			(0.039)				(0.054)				(0.039)				(0.038)				(0.145)				(0.170)	
dist*hkpci		-2.282***				-0.920***				-1.396***				0.229				-1.519				-5.153***		
		(0.302)				(0.282)				(0.329)				(0.345)				(1.090)				(1.277)		
dist*hkpcj		0.204				-0.843**				0.862				-1.020***				0.667				0.992		
		(0.273)				(0.376)				(0.624)				(0.399)				(0.747)				(0.660)		
dist*hkdist				-1.973***				-1.754***				-0.389***				-0.191***				-1.051**				-2.285***
				(0.134)				(0.101)				(0.114)				(0.062)				(0.452)				(0.495)
dist	-1.957***		-2.136***		-1.776***		-2.328***		-0.435		0.169		-0.877***		-0.454***		-1.133*		-2.050***		-3.913***		-3.101***	
	(0.323)		(0.230)		(0.236)		(0.224)		(0.387)		(0.452)		(0.122)		(0.115)		(0.640)		(0.431)		(0.983)		(0.385)	
border	0.118	-0.087	-0.032	0.341	0.215	0.236	-0.439	0.674***	-0.159	-0.169	0.100	-0.182	0.561***	0.534***	0.349**	0.420**	2.406***	1.884**	1.140*	2.681***	-1.515*	-1.864**	-0.215	0.668
	(0.479)	(0.326)	(0.402)	(0.238)	(0.355)	(0.270)	(0.306)	(0.165)	(0.251)	(0.224)	(0.208)	(0.169)	(0.094)	(0.094)	(0.149)	(0.176)	(0.950)	(0.903)	(0.671)	(0.755)	(0.907)	(0.951)	(0.509)	(1.001)
EA	0.763***	0.769***	0.898***	0.883***	0.219	0.220	0.400**	0.354**									0.692**	0.796***	1.369***	1.260***	-0.202	-0.208	0.219	0.079
	(0.178)	(0.180)	(0.188)	(0.187)	(0.169)	(0.169)	(0.181)	(0.176)									(0.291)	(0.272)	(0.273)	(0.288)	(0.333)	(0.318)	(0.294)	(0.308)
EURO									0.131	0.175	0.188	0.169	-0.039	-0.122	0.007	0.007								
									(0.172)	(0.166)	(0.167)	(0.167)	(0.124)	(0.118)	(0.107)	(0.100)								
constant	-44.557***	-40.391***	-19.447***	-24.225***	-44.782***	-45.163***	-22.367***	-31.902***	-40.109***	-34.482***	-34.502***	-30.296***	-16.096*	-25.195***	-25.377***	-28.501***	-91.008***	-47.042***	-15.467**	-21.681***	-36.685***	-29.391***	-1.086	-20.122**
	(7.813)	(3.862)	(5.369)	(1.930)	(6.656)	(4.104)	(4.453)	(2.032)	(7.847)	(3.271)	(5.285)	(2.054)	(9.524)	(1.610)	(2.391)	(1.571)	(18.023)	(7.763)	(6.909)	(7.816)	(18.991)	(9.337)	(6.617)	(9.289)
No obs	911	911	911	911	902	902	902	902	320	320	320	320	321	321	321	321	234	234	234	234	230	230	230	230
R2	0.9762	0.9763	0.9746	0.9727	0.969	0.969	0.965	0.964	0.992	0.992	0.994	0.994	0.995	0.996	0.995	0.995	0.8931	0.9028	0.9498	0.9461	0.944	0.938	0.946	0.927
Wald Chi2	7034.91***	6113.83***	4822.65***	5012.09***	970.28***	958.1***	720.37***	1070.55***	3340.77***	3255.60***	3803.73***	2742.38***	9787.12***	10702.48**	7916.79***	5052.91***	957.29***	1263.38***	2295.19***	1390.47***	436.68***	439.5***	296.58***	289.06***

Minerals	North-East								North-South								South-East							
	Dependent Variable: Export Value				Dependent Variable: Import Value				Dependent Variable: Export Value				Dependent Variable: Import Value				Dependent Variable: Export Value				Dependent Variable: Import Value			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
popi	1.460***	1.437***	1.398***	1.320***	0.980***	0.972***	0.850***	0.822***	1.301***	1.286***	1.311***	1.482***	1.254***	1.191***	1.087***	1.214***	0.420	1.803***	2.210***	1.523***	-0.654	0.548	1.844***	1.116***
	(0.087)	(0.089)	(0.079)	(0.097)	(0.150)	(0.147)	(0.134)	(0.130)	(0.082)	(0.102)	(0.070)	(0.075)	(0.108)	(0.084)	(0.077)	(0.130)	(1.136)	(0.651)	(0.431)	(0.497)	(0.611)	(0.483)	(0.247)	(0.357)
popj	1.279***	1.166***	0.869***	0.753***	1.368***	1.299***	1.175***	1.222***	0.641***	0.776***	1.053***	1.357***	-0.488	0.423***	1.313***	1.514***	1.162***	1.357***	0.640***	0.462*	1.251***	1.377***	1.218***	0.900***
	(0.136)	(0.127)	(0.095)	(0.102)	(0.128)	(0.116)	(0.113)	(0.121)	(0.264)	(0.255)	(0.138)	(0.119)	(0.305)	(0.175)	(0.124)	(0.178)	(0.174)	(0.216)	(0.236)	(0.247)	(0.249)	(0.262)	(0.225)	(0.294)
gdppci	0.708				0.430				1.971***				0.296				10.306**				9.725***			
	(0.473)				(0.690)				(0.443)				(0.790)				(4.623)				(2.024)			
gdppcj	0.961***				1.124***				0.758				5.666***				0.084				0.261			
	(0.218)				(0.192)				(0.974)				(1.340)				(0.206)				(0.482)			
gdppci*hkpci		1.560***				1.436***				2.061***				-0.055				4.751***				4.850***		
		(0.196)				(0.234)				(0.489)				(0.790)				(1.296)				(1.017)		
gdppcj*hkpcj		0.946***				1.117***				0.026				1.094*				0.338				0.492		
		(0.203)				(0.187)				(0.464)				(0.619)				(0.236)				(0.446)		
ecdist			0.099				0.443				0.712***				-0.118				0.461				-0.264	
			(0.240)				(0.347)				(0.122)				(0.213)				(0.293)				(0.551)	
ecdist*hkdist				1.302***				1.383***				0.837***				0.115				2.458***				1.115**
				(0.142)				(0.270)				(0.177)				(0.347)				(0.678)				(0.549)
hkpci	-0.073				2.331***				-0.009				0.429				2.316				-0.307			
	(0.246)				(0.514)				(0.209)				(0.275)				(1.528)				(1.369)			
hkpcj	1.530***				-0.181				-0.438**				-2.306***				0.503				-0.222			
	(0.498)				(0.391)				(0.195)				(0.348)				(1.157)				(1.507)			
hkdist			-0.044				-0.168**				0.048				0.137*				0.374**				0.029	
			(0.045)				(0.073)				(0.036)				(0.079)				(0.194)				(0.275)	
dist*hkpci		-2.021***				0.247				-1.958***				1.344				-1.524				-4.458**		
		(0.274)				(0.356)				(0.569)				(0.839)				(1.837)				(2.036)		
dist*hkpcj		0.025				-1.667***				-0.265				-2.832***				0.924				0.145		
		(0.235)				(0.328)				(0.512)				(0.574)				(1.004)				(1.257)		
dist*hkdist				-1.382***				-1.578***				-0.823***				-0.057				-2.269***				-1.631***
				(0.160)				(0.259)				(0.187)				(0.361)				(0.578)				(0.629)
dist	-2.201***		-2.103***		-1.742***		-2.100***		-1.972***		-2.138***		-0.471		-0.797*		-0.783		-2.627***		-4.609***		-4.235***	
	(0.288)		(0.251)		(0.328)		(0.373)		(0.455)		(0.378)		(0.561)		(0.424)		(0.899)		(0.516)		(1.065)		(0.630)	
border	-0.241	0.103	-0.021	1.497***	0.132	0.703	-0.776	0.471	-0.329	-0.415	-0.515*	-0.224	0.689**	0.601*	0.760**	0.851***	2.295	2.070	0.471	0.703	-2.027	-2.083	-1.855**	2.065***
	(0.384)	(0.466)	(0.300)	(0.256)	(0.397)	(0.461)	(0.525)	(0.388)	(0.267)	(0.399)	(0.308)	(0.245)	(0.359)	(0.339)	(0.337)	(0.346)	(1.506)	(1.456)	(0.891)	(0.998)	(1.576)	(1.527)	(0.852)	(0.758)
EA	0.607***	0.609***	0.745***	0.661***	0.418***	0.433***	0.589***	0.571***									0.293	0.405	1.336***	1.198***	0.262	0.365	0.622***	0.589***
	(0.189)	(0.185)	(0.180)	(0.181)	(0.139)	(0.138)	(0.153)	(0.148)									(0.384)	(0.394)	(0.318)	(0.326)	(0.272)	(0.276)	(0.256)	(0.199)
EURO									-0.035	-0.011	0.033	0.086	-0.171	0.100	0.035	0.024								
									(0.081)	(0.080)	(0.094)	(0.104)	(0.152)	(0.155)	(0.140)	(0.134)								
constant	-26.108***	-36.540***	-9.963***	-24.162***	-18.827*	-32.871***	-9.371***	-22.909***	-29.948***	-23.087***	-13.555***	-32.699***	-55.134***	-10.700***	-15.915***	-29.518***	-97.013***	-69.217***	-18.484*	-25.971***	-56.747***	-32.287***	-2.745	-20.558***
	(6.599)	(3.440)	(3.648)	(1.291)	(10.385)	(3.884)	(5.874)	(3.284)	(8.587)	(4.796)	(4.755)	(2.098)	(10.559)	(4.357)	(3.384)	(4.436)	(30.474)	(11.503)	(10.659)	(8.942)	(11.352)	(9.865)	(7.006)	(7.590)
No obs	886	886	886	886	892	892	892	892	320	320	320	320	321	321	321	321	219	219	219	219	208	208	208	208
R2	0.9633	0.9679	0.9647	0.9612	0.953	0.953	0.949	0.951	0.993	0.991	0.993	0.991	0.981	0.983	0.983	0.973	0.917	0.9155	0.9131	0.909	0.919	0.928	0.929	0.927
Wald Chi2	11232.23***	6363.32***	7086.41***	6367.47***	804.890***	721.61***	425***	763.62***	3531.86***	2452.70***	2501.03***	2745.62***	1643.24***	2958.70***	2307.57***	1322.56***	866.91***	753.65***	579.67***	392.18***	3596.23***	1820.82***	1386.570**	653.99***

Textiles & clothing	North-East								North-South								South-East							
	Dependent Variable: Export Value				Dependent Variable: Import Value				Dependent Variable: Export Value				Dependent Variable: Import Value				Dependent Variable: Export Value				Dependent Variable: Import Value			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
popi	1.488***	1.449***	1.530***	1.544***	1.152***	1.142***	1.151***	1.153***	1.144***	1.163***	1.207***	1.406***	0.889***	0.887***	0.797***	0.794***	-1.620***	0.122	0.981***	0.487*	-0.200	1.573***	1.991***	1.372***
	(0.067)	(0.067)	(0.085)	(0.086)	(0.087)	(0.098)	(0.099)	(0.101)	(0.045)	(0.041)	(0.047)	(0.052)	(0.050)	(0.028)	(0.083)	(0.083)	(0.642)	(0.252)	(0.279)	(0.268)	(0.855)	(0.373)	(0.203)	(0.198)
popj	1.170***	1.062***	0.792***	0.857***	1.059***	1.028***	0.974***	0.974***	-0.494	-0.130	0.264*	0.690***	-1.240***	-0.775***	-0.791***	-0.818***	1.482***	1.694***	1.079***	0.884***	0.750***	1.019***	0.945***	0.801***
	(0.171)	(0.159)	(0.120)	(0.126)	(0.149)	(0.128)	(0.127)	(0.126)	(0.317)	(0.195)	(0.140)	(0.101)	(0.245)	(0.147)	(0.161)	(0.147)	(0.166)	(0.155)	(0.176)	(0.229)	(0.222)	(0.148)	(0.089)	(0.112)
gdppci	2.511***				2.528***				1.436***				1.772***				10.921***				8.435***			
	(0.427)				(0.433)				(0.363)				(0.287)				(2.761)				(3.258)			
gdppcj	0.313				0.129				2.029*				1.027				1.000***				0.636*			
	(0.212)				(0.193)				(1.118)				(0.931)				(0.208)				(0.351)			
gdppci*hkpci		3.391***				2.732***				1.348***				1.817***				3.299***				1.083		
		(0.281)				(0.178)				(0.347)				(0.202)				(0.739)				(0.988)		
gdppcj*hkpcj		0.255				0.131				0.539				-1.060***				1.115***				0.914***		
		(0.210)				(0.185)				(0.500)				(0.373)				(0.220)				(0.288)		
ecdist			2.271***				2.135***				0.369***				0.469***				-0.795*				-1.073***	
			(0.399)				(0.368)				(0.105)				(0.091)				(0.417)				(0.264)	
ecdist*hkdist				2.230***				1.677***				0.547***				0.473***				0.197				0.723**
				(0.194)				(0.125)				(0.124)				(0.086)				(0.454)				(0.329)
hkpci	1.227***				1.309***				-0.186				0.122				0.497				-0.489			
	(0.341)				(0.303)				(0.191)				(0.171)				(0.803)				(0.780)			
hkpcj	1.402***				0.567**				-1.005***				-1.099***				1.425**				-1.056			
	(0.418)				(0.292)				(0.232)				(0.199)				(0.607)				(1.123)			
hkdist			-0.034				-0.047				-0.014				0.012				0.216**				0.086	
			(0.053)				(0.055)				(0.033)				(0.028)				(0.108)				(0.123)	
dist*hkpci		-2.494***				-1.506***				-1.304***				-1.522***				-1.882**				-0.671		
		(0.263)				(0.256)				(0.438)				(0.310)				(0.946)				(1.241)		
dist*hkpcj		0.629**				0.285				-1.317***				0.398				1.408**				-0.676		
		(0.283)				(0.231)				(0.527)				(0.389)				(0.625)				(0.876)		
dist*hkdist				-2.261***				-1.703***				-0.588***				-0.460***				-0.263				-0.840***
				(0.226)				(0.137)				(0.127)				(0.098)				(0.433)				(0.328)
dist	-2.159***		-2.223***		-1.295***		-1.501***		-2.520***		-2.432***		-0.644***		-0.339		-0.569		-0.962**		-1.666***		-1.554***	
	(0.360)		(0.342)		(0.318)		(0.269)		(0.258)		(0.233)		(0.123)		(0.302)		(0.465)		(0.472)		(0.463)		(0.446)	
border	-0.393	0.276	-0.626	-0.635*	0.851	0.952**	0.248	-0.118	-0.628***	-0.629***	-0.609***	-0.189	0.963***	0.769***	1.233***	1.181***	3.105***	2.380***	3.020***	3.895***	2.447**	2.208**	1.890***	2.645***
	(0.679)	(0.564)	(0.539)	(0.372)	(0.555)	(0.465)	(0.448)	(0.270)	(0.134)	(0.136)	(0.114)	(0.172)	(0.134)	(0.162)	(0.178)	(0.154)	(0.675)	(0.663)	(0.708)	(0.689)	(1.105)	(0.965)	(0.771)	(0.716)
EA	0.451***	0.433***	0.589***	0.590***	0.514***	0.507***	0.671***	0.695***									0.516**	0.696***	1.314***	1.114***	0.557***	0.732***	0.986***	0.774***
	(0.158)	(0.151)	(0.172)	(0.172)	(0.177)	(0.175)	(0.192)	(0.195)									(0.229)	(0.256)	(0.309)	(0.312)	(0.212)	(0.232)	(0.198)	(0.215)
EURO									-0.029	0.047	0.078	0.066	0.037	0.118	0.081	0.080								
									(0.107)	(0.103)	(0.107)	(0.102)	(0.100)	(0.089)	(0.073)	(0.073)								
constant	-33.310***	-43.873***	-29.979***	-30.533***	-32.185***	-34.795***	-29.667***	-23.600***	-11.370	-0.694	8.112*	-17.904***	-1.792	15.232***	16.465***	17.840***	-84.446***	-40.602***	-5.450	-9.561	-71.519***	-34.200***	-13.073***	-23.091***
	(8.136)	(4.683)	(6.483)	(2.378)	(7.826)	(4.020)	(5.916)	(1.916)	(7.814)	(4.217)	(4.895)	(2.046)	(5.742)	(2.417)	(4.734)	(3.017)	(16.203)	(3.382)	(5.858)	(5.917)	(17.506)	(5.473)	(4.834)	(3.638)
No obs	908	908	908	908	918	918	918	918	320	320	320	320	321	321	321	321	243	243	243	243	241	241	241	241
R2	0.979	0.9803	0.9742	0.9746	0.983	0.984	0.982	0.982	0.997	0.996	0.996	0.996	0.996	0.997	0.995	0.995	0.9572	0.9622	0.9404	0.9388	0.924	0.932	0.933	0.914
Wald Chi2	1875.05***	2751.8***	1996.69***	1757.5***	6278.73***	6989.47***	4537.59***	4159.58***	7204.71***	5314.88***	3388.27***	2354.34***	2103.65***	2468.43***	1458.24***	1290.87***	3001.74***	2691.93***	2012.53***	1222.11***	718.57***	632.33***	819.38***	718.27***

Transport Equipment	North-East								North-South								South-East							
	Dependent Variable: Export Value				Dependent Variable: Import Value				Dependent Variable: Export Value				Dependent Variable: Import Value				Dependent Variable: Export Value				Dependent Variable: Import Value			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
popi	1.584***	1.575***	1.505***	1.507***	1.362***	1.350***	1.358***	1.280***	1.667***	1.675***	1.693***	1.796***	1.541***	1.421***	1.565***	1.659***	0.277	2.829***	3.636***	3.128***	0.444	1.361***	1.589***	0.537
	(0.058)	(0.062)	(0.072)	(0.073)	(0.099)	(0.099)	(0.106)	(0.117)	(0.074)	(0.070)	(0.056)	(0.076)	(0.088)	(0.106)	(0.163)	(0.161)	(0.904)	(0.243)	(0.308)	(0.442)	(0.826)	(0.466)	(0.545)	(0.570)
popj	1.094***	1.011***	0.589***	0.594***	1.547***	1.601***	1.316***	1.263***	-0.053	0.508*	1.025***	1.206***	-0.841	2.372***	3.726***	3.641***	1.037***	1.377***	0.703***	0.478*	1.284***	1.357***	1.295***	1.030***
	(0.135)	(0.137)	(0.135)	(0.144)	(0.120)	(0.125)	(0.100)	(0.122)	(0.411)	(0.277)	(0.197)	(0.181)	(0.755)	(0.343)	(0.262)	(0.216)	(0.226)	(0.227)	(0.213)	(0.275)	(0.291)	(0.268)	(0.204)	(0.207)
gdppci	2.905***				2.358***				0.760**				2.981***				12.217***				3.254			
	(0.429)				(0.543)				(0.332)				(0.762)				(3.885)				(3.393)			
gdppcj	0.712***				2.179***				3.680**				15.082***				1.294***				2.340***			
	(0.160)				(0.229)				(1.557)				(2.857)				(0.329)				(0.333)			
gdppci*hkpci		3.485***				1.880***				0.788***				1.798**				3.185***				-0.597		
		(0.277)				(0.348)				(0.325)				(0.830)				(1.018)				(1.022)		
gdppcj*hkpcj		0.722***				2.176***				1.220*				0.711				1.706***				2.434***		
		(0.158)				(0.239)				(0.644)				(1.189)				(0.318)				(0.320)		
ecdist			2.605***				0.407				0.344***				0.902**				-1.447***				-1.867***	
			(0.454)				(0.349)				(0.130)				(0.387)				(0.546)				(0.386)	
ecdist*hkdist				2.552***				1.801***				0.451***				0.946**				-1.267***				-0.219
				(0.152)				(0.183)				(0.107)				(0.395)				(0.502)				(0.283)
hkpci	0.816***				1.240***				0.310				0.384				-3.870***				2.422***			
	(0.295)				(0.294)				(0.311)				(0.466)				(1.385)				(0.738)			
hkpcj	1.811***				0.091				-0.536*				-4.431***				1.652***				-1.894			
	(0.317)				(0.335)				(0.297)				(0.519)				(0.652)				(1.194)			
hkdist			0.002				-0.272***				0.074				0.098				0.169				0.005	
			(0.054)				(0.077)				(0.080)				(0.112)				(0.170)				(0.202)	
dist*hkpci		-2.864***				-0.402				-0.135				0.482				-4.595***				3.291**		
		(0.279)				(0.319)				(0.451)				(1.007)				(0.936)				(1.461)		
dist*hkpcj		0.689***				-1.825***				-1.436*				-3.471***				1.561***				-3.750***		
		(0.279)				(0.265)				(0.753)				(1.164)				(0.611)				(0.904)		
dist*hkdist				-2.545***				-2.129***				-0.402***				-0.824*				0.752**				-0.329
				(0.133)				(0.183)				(0.150)				(0.436)				(0.369)				(0.378)
dist	-2.378***		-2.528***		-2.082***		-3.051***		-1.353***		-1.085***		-1.147		-1.135**		-3.858***		-1.799***		-0.350		-1.558**	
	(0.215)		(0.184)		(0.318)		(0.282)		(0.373)		(0.286)		(0.809)		(0.491)		(0.648)		(0.302)		(0.650)		(0.808)	
border	-1.222***	-0.782**	-1.403***	-1.365***	-0.174	-0.191	-1.699***	-0.414	0.539***	0.491***	0.531**	0.603***		-0.121	-0.190	-0.115	0.432	0.510	2.421***	6.367***	3.536***	3.124***	1.264	2.422***
	(0.367)	(0.325)	(0.270)	(0.259)	(0.451)	(0.361)	(0.470)	(0.350)	(0.195)	(0.194)	(0.225)	(0.226)		(0.318)	(0.382)	(0.435)	(0.593)	(0.632)	(0.524)	(0.913)	(1.296)	(1.184)	(1.563)	(0.813)
EA	0.451***	0.459***	0.598***	0.601***	0.736***	0.730***	0.911***	0.851***									1.274***	1.117***	1.410***	1.186***	-0.120	-0.019	0.406	0.217
	(0.175)	(0.173)	(0.194)	(0.194)	(0.188)	(0.192)	(0.223)	(0.221)									(0.405)	(0.437)	(0.419)	(0.429)	(0.350)	(0.343)	(0.336)	(0.304)
EURO									0.061	0.204*	0.272**	0.244**	-0.054	0.878*	0.642	0.651*								
									(0.114)	(0.109)	(0.114)	(0.105)	(0.315)	(0.463)	(0.400)	(0.398)								
constant	-39.178***	-46.755***	-27.498***	-26.937***	-56.138***	-49.532***	-13.979***	-32.582***	-41.802***	-24.704***	-21.888***	-32.819***	-171.294***	-50.830***	-70.714***	-73.439***	-113.052***	-73.027***	-32.896***	-44.857***	-59.085***	-36.710***	-5.951	-10.514
	(6.812)	(3.815)	(6.319)	(2.541)	(8.803)	(3.423)	(5.068)	(1.901)	(11.347)	(5.355)	(5.249)	(3.228)	(16.901)	(7.416)	(8.028)	(4.937)	(22.015)	(8.396)	(6.576)	(8.764)	(21.877)	(9.859)	(11.032)	(10.431)
No obs	900	900	900	900	869	869	869	869	320	320	320	320	319	319	319	319	200	200	200	200	222	222	222	222
R2	0.9712	0.9718	0.9679	0.9677	0.939	0.938	0.934	0.926	0.990	0.990	0.988	0.988	0.976	0.952	0.959	0.959	0.912	0.9078	0.9015	0.8595	0.911	0.910	0.868	0.890
Wald Chi2	4072.88***	3470.12***	1674.04***	1876.18***	2112.48***	2001.87***	1537.23***	1044.2***	4930.12***	5108.39***	1822.89***	1527.77***	1218.83***	2792.47***	1653.99***	1338.15***	922.74***	807.04***	344.08***	170.13***	327.82***	305.5***	156.36***	52.98***

Wood products	North-East								North-South								South-East							
	Dependent Variable: Export Value				Dependent Variable: Import Value				Dependent Variable: Export Value				Dependent Variable: Import Value				Dependent Variable: Export Value				Dependent Variable: Import Value			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
popi	1.219***	1.145***	1.110***	1.101***	1.187***	1.220***	1.088***	1.101***	1.396***	1.339***	1.228***	1.148***	0.939***	1.001***	0.978***	1.069***	0.259	1.078***	1.728***	1.429***	0.498	1.551***	2.165***	1.420***
	(0.071)	(0.074)	(0.064)	(0.073)	(0.107)	(0.112)	(0.110)	(0.114)	(0.136)	(0.121)	(0.105)	(0.082)	(0.064)	(0.033)	(0.070)	(0.080)	(1.113)	(0.399)	(0.425)	(0.508)	(0.518)	(0.224)	(0.319)	(0.397)
popj	0.890***	0.731***	0.597***	0.584***	1.044***	1.078***	0.791***	0.809***	0.622	1.161**	1.077***	1.241***	-0.534	0.762***	1.634***	1.888***	0.768***	0.879***	0.276	-0.047	1.211***	1.329***	0.715***	0.559***
	(0.135)	(0.141)	(0.099)	(0.106)	(0.170)	(0.170)	(0.138)	(0.138)	(0.607)	(0.555)	(0.408)	(0.261)	(0.455)	(0.219)	(0.171)	(0.111)	(0.210)	(0.190)	(0.210)	(0.253)	(0.138)	(0.163)	(0.207)	(0.210)
gdppci	1.753***				2.867***				3.344***				1.162**				7.394				6.416***			
	(0.343)				(0.474)				(0.564)				(0.563)				(4.577)				(1.938)			
gdppcj	0.510***				0.890***				2.867*				7.733***				0.964***				1.488***			
	(0.183)				(0.218)				(1.723)				(1.812)				(0.363)				(0.162)			
gdppci*hkpci		2.670***				2.386***				3.245***				0.620				4.107***				1.933***		
		(0.190)				(0.269)				(0.621)				(0.604)				(0.881)				(0.636)		
gdppcj*hkpcj		0.501***				0.925***				-0.983				1.478*				1.094***				1.643***		
		(0.175)				(0.210)				(1.174)				(0.872)				(0.272)				(0.148)		
ecdist			1.335***				1.751***				0.585***				0.098				-0.261				-0.804***	
			(0.276)				(0.370)				(0.215)				(0.141)				(0.377)				(0.267)	
ecdist*hkdist				2.006***				1.320***				0.822***				0.093				0.419				0.448
				(0.143)				(0.204)				(0.194)				(0.150)				(0.365)				(0.356)
hkpci	1.170***				1.191***				0.127				0.654***				0.904				0.682			
	(0.207)				(0.240)				(0.330)				(0.178)				(0.802)				(0.644)			
hkpcj	1.060***				0.814**				-0.230				-3.024***				1.336*				0.286			
	(0.312)				(0.395)				(0.363)				(0.410)				(0.728)				(0.680)			
hkdist			-0.034				0.100*				-0.003				0.112*				0.133				0.177	
			(0.041)				(0.053)				(0.038)				(0.067)				(0.152)				(0.137)	
dist*hkpci		-1.976***				-1.045***				-2.833***				1.054				-2.733***				-0.859		
		(0.230)				(0.359)				(0.798)				(0.712)				(0.862)				(0.885)		
dist*hkpcj		-0.056				-0.018				1.321				-3.603***				0.770				-0.626		
		(0.214)				(0.327)				(1.205)				(0.682)				(0.512)				(0.668)		
dist*hkdist				-2.091***				-1.197***				-0.805***				-0.034				-0.711*				-0.737***
				(0.157)				(0.230)				(0.205)				(0.176)				(0.397)				(0.281)
dist	-2.270***		-2.361***		-0.822**		-0.984***		-0.325		-0.285		-2.119***		-1.111***		-2.110***		-2.627***		-1.543***		-2.784***	
	(0.253)		(0.235)		(0.408)		(0.347)		(0.589)		(0.728)		(0.210)		(0.393)		(0.766)		(0.545)		(0.388)		(0.471)	
border	-0.657**	-0.143	-0.909***	0.005	1.962***	1.477***	1.545***	1.111***	0.181	0.143	0.901*	0.443	0.476**	0.581***	0.952***	1.261***	1.353*	1.264	1.094**	4.028***	2.02***	1.779***	0.198	3.080***
	(0.293)	(0.263)	(0.309)	(0.187)	(0.695)	(0.476)	(0.598)	(0.363)	(0.571)	(0.493)	(0.510)	(0.351)	(0.204)	(0.214)	(0.245)	(0.258)	(0.826)	(0.893)	(0.471)	(0.715)	(0.649)	(0.661)	(0.539)	(0.573)
EA	0.554***	0.577***	0.710***	0.642***	0.374***	0.380***	0.463***	0.486***									0.992***	1.091***	1.589***	1.157***	0.353**	0.518***	1.034***	0.870***
	(0.179)	(0.176)	(0.195)	(0.199)	(0.154)	(0.155)	(0.152)	(0.157)									(0.260)	(0.260)	(0.315)	(0.288)	(0.179)	(0.180)	(0.209)	(0.271)
EURO									-0.106	0.088	0.173	0.156	-0.037	0.318	0.233	0.221								
									(0.185)	(0.198)	(0.220)	(0.222)	(0.176)	(0.208)	(0.191)	(0.192)								
constant	-20.383***	-30.620***	-11.362***	-19.823***	-46.035***	-40.088***	-26.128***	-20.710***	-76.522***	-35.874***	-25.989**	-25.462***	-67.929***	-17.010***	-20.243***	-34.343***	-60.786***	-44.406***	-0.196	-12.592	-73.216***	-48.804***	-6.892	-21.021***
	(7.890)	(4.225)	(4.680)	(2.047)	(9.423)	(4.840)	(6.251)	(2.423)	(14.571)	(9.292)	(11.996)	(4.203)	(12.317)	(3.129)	(6.041)	(2.876)	(24.598)	(8.604)	(11.356)	(11.461)	(10.629)	(4.720)	(4.943)	(6.163)
No obs	893	893	893	893	915	915	915	915	320	320	320	320	321	321	321	321	212	212	212	212	217	217	217	217
R2	0.9734	0.9739	0.9724	0.969	0.974	0.974	0.966	0.966	0.979	0.978	0.980	0.983	0.981	0.982	0.980	0.974	0.768	0.7848	0.8268	0.8174	0.945	0.951	0.947	0.923
Wald Chi2	2166.29***	2431.36***	1957.5***	2598.88***	2075.33***	2292.92***	1871.08***	1879.7***	1668.00***	1112.95***	949.85***	513.82***	12770.07**	6329.83***	5064.83***	2138.20***	283.05***	280.87***	136.84***	96.38***	840.31***	692.88***	387.07***	267.61***

Appendix C
Real Wages: Prais-Winsten Regression with Panel-specific AR(1) Correlated Panels Corrected Standard Errors ‡

Chemicals	North		South		East	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
gdp	0.184	0.099	-7.719***	-9.121***	-0.062	-0.044
	(0.206)	(0.208)	(1.042)	(1.287)	(0.081)	(0.083)
ma	3.024***	2.739**	3.166***	6.696**	5.132***	6.371
	(1.108)	(1.155)	(0.858)	(3.108)	(1.042)	(1.496)
sa	-1.635***	-1.189*	5.407***	4.159	0.494	-0.741
	(0.670)	(0.650)	(0.816)	(4.049)	(0.598)	(0.850)
hk	0.067	0.061	0.828***	0.791***	0.995***	1.029
	(0.136)	(0.162)	(0.078)	(0.131)	(0.257)	(0.301)
hkma	0.854***	0.754**	0.320**	0.809	1.731***	2.322*
	(0.328)	(0.392)	(0.132)	(0.672)	(0.430)	(0.655)
hksa	-0.122	-0.099	-0.783***	-0.401	-3.197***	-3.870*
	(0.154)	(0.126)	(0.222)	(0.519)	(0.740)	(0.964)
pr	-0.058**	-0.060**	-0.095***	-0.056**	0.046**	0.049***
	(0.027)	(0.030)	(0.024)	(0.028)	(0.020)	(0.019)
prma	-0.066**	-0.071**	0.078***	0.074	-0.148***	-0.168***
	(0.034)	(0.036)	(0.011)	(0.053)	(0.053)	(0.068)
prsa	-0.028	-0.015	-0.240***	-0.413***	-0.058	-0.043***
	(0.021)	(0.014)	(0.045)	(0.126)	(0.045)	(0.066)
u	0.012	0.005	-0.662***	-0.628***	0.004	0.016
	(0.032)	(0.034)	(0.045)	(0.115)	(0.030)	(0.030)
active	-0.386	-0.393	1.346***	1.184***	1.921***	1.820
	(0.257)	(0.278)	(0.361)	(0.470)	(0.477)	(0.457)
aus	0.871*	0.920*				
	(0.488)	(0.520)				
bel	-1.412***	-1.561***				
	(0.241)	(0.328)				
fin	2.434***	2.410**				
	(0.940)	(1.050)				
fra	0.110	-0.058				
	(0.580)	(0.539)				
ger	0.962	1.099				
	(0.766)	(0.785)				
ire	1.112*	0.780				
	(0.598)	(0.573)				
ned	-0.986***	-1.058***				
	(0.208)	(0.256)				
swe	1.573**	1.632**				
	(0.684)	(0.777)				
uk	0.323	0.226				
	(0.442)	(0.415)				
gre			-13.603***	-14.127***		
			(1.759)	(2.214)		
por			-18.774***	-19.069***		
			(2.972)	(2.239)		
hun					2.296***	2.386***
					(0.563)	(0.641)
pol					0.377	0.414*
					(0.660)	(0.756)
constant	-37.266***	-36.110***	-1.802	-22.643	-136.358***	-133.999***
	(12.241)	(11.146)	(12.726)	(34.445)	(20.768)	(22.065)
No. obs.	99	99	30	30	28	28
R^2	0.9965	0.9954			0.9966	
Wald Chi^2	8920.37***	10073.93***	8099.68***	3301.89***	9737.93***	8198.95***

Leather & footwear	North		South		East	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
gdp	-0.181***	0.012	-1.136	0.210	0.524**	0.248***
	(0.060)	(0.055)	(0.866)	(0.377)	(0.241)	(0.190)
ma	-6.558***	-9.076***	1.246	-0.371	0.172	-0.690
	(0.818)	(0.729)	(0.847)	(0.696)	(0.944)	(3.369)
sa	7.182***	9.573***	-0.063	0.117	-0.101	1.314**
	(0.890)	(0.736)	(0.241)	(0.631)	(1.004)	(2.783)
hk	0.101***	0.161***	0.245**	0.237	0.854*	0.934**
	(0.029)	(0.038)	(0.120)	(0.171)	(0.450)	(0.302)
hkma	-0.747***	-0.519	0.524*	1.614	-0.236	1.379**
	(0.197)	(1.393)	(0.307)	(1.775)	(1.548)	(2.249)
hksa	0.874***	0.501	-0.819**	-1.682	-1.648***	-2.567***
	(0.263)	(1.415)	(0.401)	(1.552)	(0.671)	(1.488)
pr	0.005	-0.003	0.067**	0.033	0.078**	0.129
	(0.003)	(0.004)	(0.030)	(0.028)	(0.040)	(0.029)
prma	-0.261***	-1.820***	-0.007	0.001	0.101***	0.413***
	(0.052)	(0.345)	(0.016)	(0.018)	(0.034)	(0.133)
prsa	0.200***	1.759***	0.002	-0.002	-0.414*	-0.837***
	(0.054)	(0.344)	(0.011)	(0.006)	(0.219)	(0.211)
u	0.037***	0.039***	-0.132***	-0.097*	0.303***	0.232
	(0.008)	(0.006)	(0.045)	(0.057)	(0.091)	(0.066)
active	0.699***	0.296***	0.244	0.198	2.866***	1.823
	(0.111)	(0.121)	(0.335)	(0.349)	(0.827)	(0.757)
aus	-1.048***	-1.069***				
	(0.132)	(0.129)				
bel	-0.650***	-0.886***				
	(0.061)	(0.064)				
fin	-0.583***	-0.744***				
	(0.121)	(0.099)				
fra	-0.237	-0.941***				
	(0.181)	(0.182)				
ger	-0.260	-1.084***				
	(0.229)	(0.219)				
ire	-0.527***	-0.577***				
	(0.033)	(0.031)				
ned						
swe	-0.344***	-0.604***				
	(0.115)	(0.097)				
uk	-0.269*	-0.890***				
	(0.148)	(0.148)				
gre			-2.778*	-1.455		
			(1.512)	(1.605)		
por			-4.905**	-0.060		
			(2.506)	(0.866)		
hun					-0.313	-0.685***
					(0.470)	(0.412)
pol					-2.793***	-1.937***
					(0.504)	(0.525)
constant	-12.940***	-12.404***	11.407	11.026	-12.908	-12.645***
	(2.324)	(1.327)	(9.225)	(15.185)	(29.123)	(22.963)
No. obs.	90	90	30	30	30	30
R^2			0.9741	0.99	0.9841	
Wald Chi^2	15039.27***	31645.46***	2043.28***	2705.82***	1062.97***	1667.41***

Machinery	North		South		East	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
gdp	0.337*** (0.108)	0.430** (0.193)	-2.834*** (0.979)	-3.159*** (1.012)	-0.444*** (0.142)	-0.533*** (0.141)
ma	0.339 (0.842)	0.584 (1.157)			-1.055 (1.896)	-0.988*** (0.880)
sa	-0.221 (0.775)	-0.265 (0.978)	4.229*** (1.328)	4.627*** (1.369)	3.131 (2.112)	3.346*** (1.832)
hk	0.015 (0.035)	-0.027 (0.075)	0.511*** (0.121)	0.586*** (0.125)	2.991*** (0.392)	2.820*** (0.410)
hkma	-0.031 (0.222)	-0.261 (0.247)	-1.410 (7.119)	-2.196 (2.658)	-1.448 (1.145)	-0.892*** (1.037)
hksa	0.218 (0.210)	0.321* (0.175)	1.147 (6.926)	1.886 (2.483)	1.491*** (0.360)	1.095*** (0.366)
pr	0.099*** (0.012)	0.099*** (0.021)	0.087 (0.093)	0.142 (0.091)	0.004 (0.047)	-0.015 (0.047)
prma	-0.209*** (0.028)	-0.277*** (0.064)	-0.049 (0.738)	0.025 (0.237)	-0.190*** (0.062)	-0.172*** (0.064)
prsa	0.143*** (0.023)	0.208*** (0.053)	-0.099 (0.704)	-0.162 (0.198)	-0.001 (0.114)	0.036*** (0.125)
u	-0.007 (0.017)	0.009 (0.028)	-0.313*** (0.071)	-0.348*** (0.077)	0.014 (0.058)	-0.007 (0.054)
active	-0.063 (0.121)	0.057 (0.193)	0.720 (0.447)	0.429 (0.475)	5.885*** (1.062)	5.916 (0.912)
aus						
bel						
fin	-0.678*** (0.257)	-0.572 (0.739)				
fra	-1.705*** (0.260)	-1.697*** (0.470)				
ger	-1.457*** (0.386)	-1.515** (0.669)				
ire	-0.776*** (0.147)	-0.637*** (0.204)				
ned	-0.902*** (0.112)	-0.880*** (0.281)				
swe	-0.739*** (0.219)	-0.705 (0.601)				
uk	-1.268*** (0.244)	-1.290*** (0.377)				
gre			-5.346*** (1.556)	-6.739*** (1.765)		
por			-5.433*** (1.616)	-6.777*** (1.837)		
hun					0.863 (0.683)	1.095*** (0.700)
pol					-2.823*** (0.879)	-2.422*** (0.809)
constant	-11.834*** (2.234)	-18.834*** (6.624)	-45.043*** (16.170)	-74.116*** (19.759)	-109.528*** (30.902)	-115.569*** (35.143)
No. obs.	80	80	30	30	29	29***
R^2		0.9976			0.9834	0.9712***
Wald Chi^2	9580.37***	3018.27***	5398.54***	7851.54***	1289.33***	1094.07**

Metals	North		South		East	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
gdp	0.163 (0.159)	0.099 (0.225)	-0.306 (0.758)	0.182 (0.648)	0.700*** (0.138)	-0.137 (0.113)
ma	-1.970** (0.953)	-2.039 (1.854)	-5.946 (6.501)	-0.693 (0.840)	9.396*** (1.297)	3.166 (2.258)
sa	3.341*** (1.222)	3.027 (2.068)	6.079 (6.698)		-6.416*** (1.000)	-1.811 (1.571)
hk	-0.094 (0.082)	-0.128 (0.085)	0.077 (0.152)	0.213** (0.110)	0.407** (0.187)	1.150*** (0.329)
hkma	0.034 (0.119)	0.165 (0.315)	-1.345 (2.884)	-0.711 (3.414)	-0.800 (2.982)	-4.545 (17.100)
hksa	0.184 (0.130)	0.017 (0.350)	1.912 (3.116)	1.200 (3.588)	-1.789 (3.083)	3.153 (17.087)
pr	-0.119*** (0.033)	-0.093** (0.045)	-0.032 (0.060)	-0.015 (0.059)	0.065*** (0.023)	-0.002 (0.035)
prma	-0.012 (0.017)	0.037 (0.026)	0.179 (0.226)	0.403** (0.177)	0.282*** (0.044)	-0.026 (0.036)
prsa	-0.050 (0.038)	-0.031 (0.038)	-0.206 (0.229)	-0.389** (0.176)	-0.215*** (0.039)	0.032 (0.079)
u	-0.002 (0.019)	0.013 (0.030)	-0.174* (0.101)	-0.209*** (0.071)	0.202*** (0.038)	0.102* (0.055)
active	-0.687*** (0.192)	-0.370 (0.259)	-0.613 (0.437)	-0.711** (0.314)	3.210*** (0.592)	1.292* (0.745)
aus	1.057** (0.500)	-0.104 (0.212)				
bel	-1.213*** (0.158)	-1.316*** (0.530)				
fin	2.050*** (0.809)	0.703 (0.800)				
fra	0.057 (0.566)	-1.249** (0.599)				
ger	1.079 (0.766)	0.000 (0.680)				
ire	0.469 (0.507)	-0.808*** (0.177)				
ned	-0.795*** (0.148)	-0.873** (0.382)				
swe	1.273** (0.622)	0.356 (0.606)				
uk	0.117 (0.431)	-0.723 (0.499)				
gre			0.185 (1.897)	-0.607 (1.287)		
por			-0.342 (1.719)	-0.490 (1.287)		
hun					0.261 (0.190)	-0.605*** (0.243)
pol					-2.388*** (0.313)	-2.083*** (0.556)
constant	-28.376*** (6.824)	-13.919** (6.280)	51.985 (46.012)	13.376 (19.005)	-74.703*** (6.142)	-33.179*** (11.536)
No. obs.	98	98	30	30	30	30
R^2	0.998	0.9762				
Wald Chi^2	12424.79***	3203.52***	5850.55***	6294.31***	3917.74***	1006.12***

Minerals	North		South		East	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
gdp	0.061	-0.374***	7.365	29.062**	0.003	-0.098*
	(0.330)	(0.061)	(4.595)	(13.722)	(0.183)	(0.052)
ma	3.082*	0.993***	-19.221***	-14.054	2.302***	1.524***
	(1.669)	(0.121)	(2.801)	(10.827)	(0.851)	(0.335)
sa	-1.234	-0.039	21.530	-19.887	-0.365	-0.133
	(1.306)	(0.091)	(15.872)	(14.888)	(0.435)	(0.267)
hk	0.082	0.082***	-1.193	-2.348	1.148***	1.441***
	(0.131)	(0.013)	(1.560)	(2.602)	(0.306)	(0.271)
hkma	0.438	-0.068	3.303	-0.864	1.246*	0.410
	(0.385)	(0.104)	(8.469)	(1.798)	(0.720)	(0.293)
hksa	-0.702*	0.053	-2.488	-0.470	-2.865**	-1.537***
	(0.407)	(0.119)	(2.448)	(4.910)	(1.364)	(0.552)
pr	-0.004	-0.011***	-0.501*	0.303	0.027	-0.008
	(0.023)	(0.002)	(0.274)	(0.746)	(0.029)	(0.027)
prma	-0.056	-0.063***	-0.137	0.166	0.044	0.070**
	(0.047)	(0.004)	(0.246)	(0.383)	(0.082)	(0.033)
prsa	-0.047	0.061***	-0.463	-0.200	-0.015	-0.113**
	(0.038)	(0.006)	(0.669)	(0.711)	(0.033)	(0.058)
u	0.002	-0.012**	0.231	1.750*	0.096***	0.073**
	(0.037)	(0.005)	(0.432)	(0.974)	(0.034)	(0.031)
active	0.052	0.597***	5.890***	18.941***	2.250***	2.994***
	(0.720)	(0.036)	(2.366)	(6.610)	(0.530)	(0.556)
aus	1.288*	0.380***				
	(0.791)	(0.079)				
bel	-1.122***	-0.565***				
	(0.310)	(0.067)				
fin	2.257*	0.297**				
	(1.285)	(0.151)				
fra	0.447	0.411***				
	(0.920)	(0.147)				
ger	1.084	0.899***				
	(1.083)	(0.216)				
ire	1.013	-0.344***				
	(0.809)	(0.083)				
ned	-0.786**	-0.265***				
	(0.337)	(0.054)				
swe	1.369	0.226**				
	(0.892)	(0.097)				
uk	0.104	0.199				
	(0.635)	(0.140)				
gre			16.754	42.553**		
			(10.728)	(21.228)		
por			22.879***	62.208*		
			(8.312)	(33.375)		
hun					-0.213	-0.191
					(0.291)	(0.193)
pol					-2.624***	-2.780***
					(0.424)	(0.377)
constant	-38.166***	-13.013***	-361.909	-71.349	-53.932***	-54.291***
	(12.091)	(1.272)	(345.253)	(159.294)	(19.381)	(5.887)
No. obs.	99	100	30	30	28	28
R^2	0.9257			0.7255	0.998	0.9986
Wald Chi^2	15023.41***	33366.27***	415.86***	134.99***	5735.14***	8216.2***

Textiles & clothing	North		South		East	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
gdp	0.371**	0.291	-0.344	0.984	0.370*	0.683***
	(0.190)	(0.193)	(0.879)	(0.886)	(0.220)	(0.193)
ma	6.190***	3.930***	0.097	0.850**	1.750	6.637***
	(1.839)	(0.988)	(0.209)	(0.440)	(1.452)	(1.450)
sa	-3.853***	-1.680***	2.703	-4.562**	2.141	-1.744
	(1.378)	(0.599)	(2.163)	(2.330)	(1.963)	(1.085)
hk	-0.001	0.010	0.375***	0.049	0.032	-0.429
	(0.085)	(0.088)	(0.086)	(0.164)	(0.692)	(0.434)
hkma	0.423	0.123	-0.938**	0.790	0.648	6.112***
	(0.294)	(0.105)	(0.397)	(0.489)	(0.992)	(2.402)
hksa	-0.541	-0.171	-0.017	-0.168	-3.578*	-10.304***
	(0.347)	(0.130)	(0.148)	(0.271)	(1.938)	(2.751)
pr	0.068**	0.057**	0.008	0.105**	0.154**	0.254***
	(0.029)	(0.028)	(0.042)	(0.045)	(0.067)	(0.038)
prma	-0.159***	-0.161***	0.002	0.027	0.121	0.350***
	(0.037)	(0.031)	(0.010)	(0.033)	(0.082)	(0.071)
prsa	-0.017	-0.005	-0.100	0.150*	-0.188	-0.276***
	(0.048)	(0.013)	(0.067)	(0.081)	(0.124)	(0.062)
u	-0.009	-0.012	-0.189***	-0.124*	0.208***	0.242***
	(0.026)	(0.028)	(0.061)	(0.066)	(0.073)	(0.049)
active	-0.201	-0.209	-0.444	0.320	2.600***	2.468***
	(0.178)	(0.206)	(0.370)	(0.445)	(0.913)	(0.666)
aus	1.486**	1.300***				
	(0.632)	(0.511)				
bel	-1.524***	-1.646***				
	(0.208)	(0.183)				
fin	2.911***	2.804***				
	(1.004)	(0.870)				
fra	0.307	0.085				
	(0.747)	(0.640)				
ger	1.066	1.088				
	(0.933)	(0.866)				
ire	1.411**	1.159**				
	(0.613)	(0.498)				
ned	-1.065***	-1.123***				
	(0.163)	(0.179)				
swe	1.783***	1.866***				
	(0.710)	(0.665)				
uk	-0.113	-0.202				
	(0.540)	(0.486)				
gre			-0.430	-0.299		
			(1.030)	(1.194)		
por			-0.955	-1.060		
			(1.152)	(1.230)		
hun					0.676	-0.067
					(0.777)	(0.280)
pol					-1.077	-1.683***
					(0.909)	(0.297)
constant	-58.072***	-53.203***	-51.055**	73.759**	-81.941**	-88.401***
	(12.152)	(9.591)	(26.421)	(37.345)	(35.009)	(11.428)
No. obs.	100	100	30	30	30	30
R^2	0.9969	0.9943		0.9897	0.9624	0.9939
Wald Chi^2	10175.4***	6000.12***	2630.49***	1291.33***	845.47***	4364.49***

Transport equipment	North		South		East	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
gdp	1.300*** (0.171)	1.222*** (0.322)	-5.642*** (1.429)	-7.507*** (1.391)	0.944** (0.422)	-0.341*** (0.105)
ma	-3.520*** (0.833)	2.201** (0.945)	7.970*** (1.519)	13.003*** (2.867)	-0.757** (0.384)	-0.824*** (0.340)
sa	4.326*** (0.895)	-1.220* (0.740)	0.243 (0.224)	-5.422** (2.302)	1.434*** (0.437)	3.305*** (0.532)
hk	-0.040 (0.045)	0.009 (0.092)	0.581*** (0.153)	0.546*** (0.175)	0.634*** (0.196)	0.683*** (0.198)
hkma	-0.179 (0.198)	0.211* (0.129)	0.180 (0.344)	-1.622 (4.198)	0.053 (0.543)	-1.332** (0.557)
hksa	0.302** (0.140)	-0.224 (0.199)	-1.056** (0.452)	1.898 (4.448)	-1.620*** (0.198)	-1.034** (0.431)
pr	-0.148*** (0.014)	-0.146*** (0.025)	-0.016 (0.018)	-0.015 (0.019)	0.185*** (0.019)	0.089*** (0.028)
prma	-0.040 (0.344)	-0.671 (0.601)	0.034 (0.037)	0.315 (0.304)	-0.024*** (0.003)	-0.219*** (0.026)
prsa	-0.001 (0.358)	0.665 (0.625)	-0.033** (0.014)	-0.289 (0.296)	0.013* (0.007)	0.328*** (0.043)
u	0.041*** (0.016)	0.036 (0.036)	-0.376*** (0.098)	-0.426*** (0.101)	0.043 (0.039)	0.113*** (0.042)
active	-0.841*** (0.168)	-0.698*** (0.269)	0.699 (0.522)	0.333 (0.490)	5.593*** (0.453)	5.901*** (0.416)
aus						
bel						
fin	1.795*** (0.364)	1.754** (0.737)				
fra	-2.230*** (0.508)	-2.464*** (0.925)				
ger	-2.063*** (0.647)	-2.177* (1.217)				
ire						
ned	-1.910*** (0.111)	-1.973*** (0.208)				
swe	0.379 (0.325)	0.376 (0.648)				
uk	-1.855*** (0.390)	-2.017*** (0.726)				
gre			-8.577*** (2.121)	-12.412*** (2.076)		
por			-16.620*** (3.552)	-22.810*** (3.823)		
hun					1.632*** (0.365)	0.866*** (0.180)
pol					-2.548*** (0.338)	-1.456*** (0.212)
constant	-43.794*** (3.763)	-44.837*** (7.234)	-10.392 (13.326)	47.998*** (15.007)	-57.205*** (13.522)	-66.686*** (8.177)
No. obs.	70	70	30	30	24	28
R^2		0.9978	0.9807		0.9988	0.9977
Wald Chi^2	12389.65***	19261.15***	2000.34***	1898.42***	37166.7***	15380.19***

Wood products	North		South		East	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
gdp	1.200*** (0.249)	1.259*** (0.262)	-3.523** (1.679)	-2.293*** (0.621)	1.190*** (0.234)	1.007*** (0.220)
ma	0.237 (0.481)	0.306 (0.708)	0.336 (1.026)	-5.623*** (2.010)	-0.419* (0.256)	-0.442* (0.239)
sa	-0.449 (0.509)	-0.338 (0.884)	3.571*** (1.008)	9.241*** (2.133)	5.622*** (1.134)	5.642*** (1.050)
hk	-0.169* (0.093)	-0.176** (0.089)	0.409*** (0.137)	-0.014 (0.112)	-0.190 (0.211)	-0.001 (0.196)
hkma	-0.491*** (0.175)	-0.420*** (0.171)	-0.225 (0.166)	-0.722 (0.664)	-2.162*** (0.511)	-2.042*** (0.477)
hksa	0.605*** (0.177)	0.309*** (0.120)	0.097 (0.155)	1.184 (0.864)	-0.385 (0.348)	-0.384 (0.371)
pr	-0.013* (0.008)	-0.013* (0.007)	0.065 (0.049)	-0.051 (0.039)	0.118*** (0.016)	0.114*** (0.015)
prma	0.020 (0.015)	0.025* (0.015)	-0.064*** (0.024)	-0.166*** (0.049)	-0.024*** (0.005)	-0.021*** (0.005)
prsa	0.009 (0.009)	0.010 (0.015)	0.004 (0.012)	0.141*** (0.053)	-0.220*** (0.038)	-0.229*** (0.037)
u	0.080*** (0.024)	0.083*** (0.026)	-0.212** (0.109)	-0.240*** (0.054)	0.291*** (0.042)	0.282*** (0.037)
active	0.119 (0.183)	0.074 (0.192)	0.329 (0.605)	-0.297 (0.266)	4.685*** (0.596)	4.516*** (0.612)
aus	-1.107*** (0.220)	-1.001*** (0.403)				
bel	-1.050*** (0.135)	-1.137*** (0.180)				
fin	-0.359 (0.381)	-0.388 (0.718)				
fra	-3.002*** (0.596)	-3.219*** (0.705)				
ger	-3.252*** (0.732)	-3.389*** (0.911)				
ire	0.211 (0.318)	0.146 (0.456)				
ned	-1.338*** (0.200)	-1.432*** (0.217)				
swe	-0.923*** (0.310)	-0.937* (0.571)				
uk	-2.257*** (0.491)	-2.473*** (0.555)				
gre			-6.667** (2.779)	-2.712*** (0.892)		
por			-12.127*** (4.209)	-6.716*** (1.227)		
hun					3.017*** (0.462)	3.052*** (0.461)
pol					-1.224** (0.556)	-0.810 (0.545)
constant	-22.833*** (4.514)	-26.022*** (5.667)	14.282 (11.985)	21.680 (15.325)	-150.509*** (22.591)	-143.755*** (19.272)
No. obs.	97	97	30	30	25	25
R^2	0.9961	0.9959	0.9972			
Wald Chi^2	45453.48***	68577.11***	13834.07***	10985.07***	23284.71***	23074.46***

Appendix D

Employment Shares

Country Shares / Sectoral Shares	North	South	East
High scale economies and high skill-intensity	0.786 / 0.533	0.095 / 0.327	0.119 / 0.379
High scale economies and low skill-intensity	0.752 / 0.220	0.118 / 0.174	0.131 / 0.180
Low scale economies and high skill-intensity	0.714 / 0.059	0.135 / 0.057	0.150 / 0.058
Low scale economies and low skill-intensity	0.526 / 0.187	0.245 / 0.442	0.229 / 0.383

[‡] The default regression method is the Prais-Winsten Correlated Panels Corrected Standard Errors with panel-specific AR(1). Standard errors are shown in parenthesis. *, ** and *** represent significance at 10, 5 and 1%, respectively. The omitted countries in each group are those with higher real wages: Denmark in the North, Spain in the South and Czech Republic in the East. Whenever the R^2 is not reported, the FGLS with panel-specific AR(1) and panel correlation was used instead as the Prais-Winsten was not accepted by STATA. The coefficients obtained through the two methods are exactly the same, though the FGLS estimator is more efficient. In the FGLS the R^2 is not reported as when the GLS parameters are estimated the total sum of squares cannot be broken down as in an OLS regression, making the R^2 less useful as a diagnostic tool for GLS regressions. Specifically, an R^2 computed from GLS sums of squares need not be bounded between zero and one and does not represent the percentage of total variation in the dependent variable that is accounted for by the model. Additionally, eliminating or adding variables in a model does not always increase or decrease the computed R^2 value.