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Abstract

This study looks at the relationship between trade integration and labour markets for a group of OECD economies (USA, Japan, France, Germany, Netherlands, Sweden, United Kingdom). We examine particularly trade relationships between these OECD economies and different groups of 'Southern' economies: Southern Europe, the advanced South East Asian economies, a larger group of developing and catching-up economies, and transition countries from Central and Eastern Europe. The analysis uses a disaggregated data-set comprising 23 manufacturing industries for which production, employment and trade statistics were compiled. It looks at the differentiated pattern of trade integration over the period 1980-96 and examines labour market effects (on employment and on wages) both at a descriptive level and by means of econometric analysis. Evidence for trade effects on labour market variables are found, although the pattern of trade integration proceeds quite differently from what a Heckscher-Ohlin framework would expect. The pattern is much more compatible with a dynamic Ricardian model with catching-up features.

JEL-Classification: C21,F14,F15,F16,L6

Keywords: trade liberalisation, labour markets, OECD economies, North-South trade

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Trade Liberalization and Labour Markets: Perspective from OECD Economies

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1 Introduction

This study attempts to contribute to the by now large literature on the link between increasing international trade integration and labour market outcomes in OECD economies.

Previous research to this area has been surveyed in a number of contributions (see e.g. Wood, 1995; Slaughter, 1998; Lawrence, 1996). Studies on European countries can be found e.g. in Dewatripont et al. (1999). The justification for another quantitative study in this field is the following:

1. So far there is much less research on the European economies as compared to those on the US. Furthermore, the available studies on Europe are already somewhat outdated (see e.g. Dewatripont et al. (1999), where the time series underlying the work mostly finish in 1992). We shall see that, differently from the US, trade integration with the 'South' picked up in Europe particularly in the 1990s, so that an up-to-date database covering much of the 1990s is needed to explore the issue for the European economies.

2. In the 1990s a new theme of international integration arose in Europe: integration with the formerly planned economies of Central and Eastern Europe. These had previously been members of their own, relatively autarkic trade bloc. Since 1990 they underwent a dramatic process of trade liberalization and trade reorientation, particularly towards the European Union. Evidence suggests that the countries of Central and Eastern Europe (CEECs) are different in terms of the technological (productivity) levels from their EU trading partners and might also be different in terms of factor endowments (skill composition of their labour force, ease of access to capital). Hence both Ricardian as well as Heckscher-Ohlin reasoning would apply regarding labour market implications of increasing trade integration between the CEECs and the EU.

3. In Europe another group of countries which might require attention in this context are the 'Southern' European countries (Portugal, Spain, Greece, Turkey) as this group of countries also represents the 'South' from the 'Northern' European perspective. The 1980s and 1990s also saw increasing trade integration between these countries and the rest of the EU.

4. Lastly, we shall put some emphasis in our analysis on the decomposition of the 'non-European South'. We shall distinguish a group of countries which have undergone dramatic 'upgrading' of their industrial and export structures over the period under study. The resulting changes in their positions in the international division of labour has, in turn, implications for the labour markets in 'Northern' economies. Much of the analysis of international integration and labour markets has worked with a basically static analytical framework. We have shown in a number of contributions (see Landesmann

and Stehrer, 2000, 2001; Stehrer, 2001) that adopting a dynamic framework of trade and catching-up changes the perspective on labour market effects as well.

2 Theoretical Approaches

While this study is an applied economic exercise, a short review of existing theoretical approaches on the issue of trade liberalization and labour markets might be appropriate. Broadly, we can distinguish 3 approaches:

1. Heckscher-Ohlin framework from which a number of implications for the impact of international trade liberalization on labour markets can be deduced. It has been the most widely used theoretical framework in the literature so far.

2. Ricardian approach which emphasizes differences in technological (productivity) levels amongst trading partners. This approach has also been dynamically extended to include changes in relative productivity positions (for example through a process of catching-up which can be differentiated across different types of industries).

3. 'Labour economics' approach, often adopted by labour market economists who are deterred by the other two approaches' assumptions of perfectly competitive markets and who emphasize the role which labour market institutions (unionization and bargaining institutions, minimum wage legislation, etc) and labour market segmentation phenomena (on the demand and supply side) play in determining labour market outcomes.

We shall briefly address some issues in each of the three approaches:

2.1 The Heckscher-Ohlin framework

In a situation of trade liberalization, world market product prices determine factor incomes in this approach. Given the traditional assumptions concerning production functions and mobility of factors across industries, full trade liberalization implies - in a situation without complete specialization - that all producers will produce in positions which equalize their marginal products across the globe; this leads to factor price equalization. A Northern (N) economy which is relatively well endowed with either capital or skilled labour and which opens up trade with a Southern (S) economy which, in turn, is relatively well endowed with unskilled labour, will find that factor rewards to capital and skilled labour will rise and those to unskilled labour will fall, and vice versa for the Southern economy. The mechanism through which this occurs is specialization towards skill- and capital-intensive products/industries in the North and towards unskilled labour-intensive products/industries in the South.

In empirical studies which attempted to apply this approach to North-South trade integration, emphasis is laid on showing that the impact on factor prices occurs via changes in relative product prices (Lawrence and Slaughter, 1993; Sachs and Shatz, 1994). Hence evidence has to be found which shows that the relative prices of goods which are intensive in capital and skilled labour will rise in the Northern economies relative to autarky, while the opposite would

be the case in the Southern economy. The empirical evidence is rather weak that this is the case, with a main complication arising that with data over time, technology cannot be assumed constant, and hence uneven productivity growth rates will co-determine relative product price movements. On the employment side, the H-O framework would predict shifts in employment (and output) structures in the N economies towards capital- and skill-intensive branches and the opposite in the S economies. It is clear that a study guided by the H-O framework requires data disaggregated by industry. Full employment of the stocks of skilled and unskilled labour and of capital is assured through a within-industry shift in the choice of techniques.

2.2 The Ricardian approach

In the core of this approach are productivity level differences across economies and, in particular, differences in those productivity differentials across branches. Formulated usually in a one-factor constant returns modelling framework, it predicts (complete) specialization across branches in those areas where a particular economy has the largest productivity differential. Traditionally the model assumes a unique wage rate across all sectors and hence relative productivity differentials determine relative unit costs and hence comparative advantage. Just as in the Heckscher-Ohlin framework, there is an assumption of full employment and hence labour market clearing determines the wage rate (Dornbusch et al., 1977; Krugman, 1986). The analysis of the real wage rate (i.e. nominal wage rate divided by the price index of the basket of wage goods consumed) becomes difficult as productivity levels of both domestic producers and of importers affect the real wage rate. Hence, workers real incomes are a function of productivity levels in all economies. Nonetheless, the productivity levels of the industries on which their own economies specialize also determine relative wage rates across economies; hence no factor price equalization is predicted. In dynamic formulations of the Ricardian model, productivity catching-up (or falling behind) of the S economy relative to the N economy can be considered. Catching-up implies that the cut-off point of specialization shifts in the direction of higher-productivity industries (from the S economy's point of view) which are being added to the S economy's specialization and are being lost to the Northern economy (where these industries are the low productivity industries).

There are two important changes which could be made to the Ricardian model of international trade and catching-up: one is that one might not want to assume the same wage rate in a country across sectors. In the labour market approach discussed below, numerous reasons for wage differentials across sectors are considered even for homogenous labour (these turn around various entry and exit barriers into/out of particular jobs and industries). In such a situation, comparative advantage is not simply determined by relative productivity differentials across sectors but also by wage structures. The other change is that productivity catching-up might not proceed at the same rates across sectors (as assumed, e.g. in Krugman, 1979). It could e.g. be the case that the fastest catching-up rates take place in industries in which there are the largest gaps in technology levels. This amounts to an application of the Gerschenkron thesis ('advantage of backwardness') at the industry level. Both these two changes affect the dynamics of comparative advantage and the impact on labour markets (employment and wages) in both the advanced and the catching-up economies.

What about the empirical predictions of a dynamic Ricardian model with regard to trade

liberalization and labour markets? Two issues are to be distinguished: The move from autarky to trade (i.e. the effects of trade liberalization) and the effects of catching-up (i.e. closing the productivity differential between the N and the S economy). The move from autarky to trade implies that the industry mix shifts in the N economy towards the high productivity industries (where productivity differentials are the greatest) and the opposite in the S economies. If we do think of higher productivity industries requiring more skilled labour (thus extending the model to a two factor framework, but restricting ourselves to limitational production functions) then trade liberalization would mean in the N economy an increase in the relative demand for skilled labour as against unskilled labour and vice versa in the S economy. This is equivalent to the H-O model prediction. Moving to the dynamic context of catching-up, however, here both types of economies' output mix would shift towards higher productivity growth industries: in the case of the S economy because it acquires some higher productivity growth industries as the cut-off point of international specialization moves in its favour and in the N economy because it loses these industries which from its point of view are relatively low productivity industries. This dynamic version of the model implies, differently from the H-O predictions, that the demand for labour would in both economies shift towards skilled labour.

2.3 Labour economics approach

The approach adopted by labour market economists views the effects of international integration as shifting labour demand schedules for different types of workers. It takes as a starting point a model similar to the Heckscher-Ohlin framework, in that trade liberalization would through specialization shift labour demand towards the factor with which an economy is relatively better endowed. However, there is a difference in the approach to how product and labour markets function. In particular, they do not envisage wage rates in an economy to be entirely determined by world market prices as in the H-O model (through an adjustment of industry mix and a choice of techniques responding to specialization advantages and disadvantages) but allow for imperfections both in product and labour markets. In an economy in which trade is liberalized there remain imperfections on product markets: through the 'home market bias', information and other advantages of domestic producers, the nature of market structures (oligopolistic or monopolistic competition) etc. On labour markets, in turn, the existence of mark-ups in an imperfectly competitive product market opens up scope for bargaining. The positions of different types of workers (e.g. skill groups) in this industry (and firm) level bargaining depend in turn on entry and exit barriers to the labour market of the industry, barriers to skill acquisition, sunk cost advantages in human capital, insider relationships, as well as on the organizational and institutional features of the bargaining process (industry- or economy-wide bargaining, organizational strength of different skill groups, the impact of minimum wage and outside income, etc.) These imperfections put a wedge between the tight link postulated between world market prices and factor prices in the H-O model. Nonetheless, international competition on export and home markets do affect product and labour market outcomes.

From the empirical angle, labour market economists focus on shifts in the demand schedules for different (skill, gender, age) types of workers brought about by international competition. The H-O predictions with regard to international specialization still feature in accounting for such shifts, but so does technology which might shift demand in favour of different (skill,

gender, age) types of workers. Wage determination in the sheltered (non-tradable) sector has an impact on wage determination in the tradable sector and not only the other way round. On top of this, the factors mentioned above regarding imperfections on product and labour markets leave a lot of scope for differentiated responses by different economies to the process of international integration. In particular, the different impact of international integration on labour market outcomes in the US and the UK and the continental European countries has traditionally been emphasized. We shall also refer to this distinction in future research.

In our work we shall adopt an eclectic approach. Elements of each of the above approaches will be brought into the discussion both in specifying the model for our econometric analysis as well as in interpreting the results.

3 The Data and Descriptive Analysis

3.1 The data sets used in this study

The analysis in this paper has singled out the following countries for which trade, production and employment statistics have been compiled:

- France
- Germany
- Netherlands
- Sweden
- United Kingdom
- USA
- Japan

We shall call this group the 'reporting countries'. The following datasets have been mostly relied upon in this study:

- OECD STAN database which compiles production, employment, investment statistics at the (ISIC) industry level
- OECD Bilateral Trade Database (BTD) which contains bilateral trade data for each of the reporting OECD economies by 4-digit ISIC industries.

The above two datasets have been matched which resulted in a consistent production, employment and trade dataset for 23 manufacturing industries (for a listing of these industries see table A.1 in the appendix).

In general, the STAN database contains data from 1970 to 1997 although data in the last year for some countries turned out to be incomplete. The OECD Bilateral Trade Database

contains only data from 1980-1998. Thus, in the analysis we were constrained to consider two different time periods within the period 1980 to 1996.

Apart from the above two datasets we used also data compiled by Papaconstantinou from the OECD on employment by 4 skill categories (blue collar unskilled, blue collar skilled, white collar unskilled, white collar skilled) also available at the ISIC industry level (see OECD, 1998) (see table A.2 in the appendix for a list of industries ranked by the share of the white collar high skilled labour force in total employment).

As regards trade relations of the above reporting OECD countries, we compiled trade figures with the following six groups of trading partners (see also table A.3 in the appendix for a list of countries included):

1. Trading partners from the 'North':

   (a) **Group A**: Austria, Switzerland, Finland, Norway, United States, Italy, Denmark, Sweden, Germany, United Kingdom, New Zealand, Australia, France, Canada, Netherlands, Belgium/Luxembourg

   (b) **Group C**: consisting only of Japan

2. Trading partners from the 'South':

   (a) **Group B**: Southern European economies (Spain, Portugal, Greece, Turkey)

   (b) **Group D**: Four Asian Tigers (Hong Kong, Singapore, Taiwan, South Korea)

   (c) **Group E**: Selected Developing Countries comprising Brazil, Mexico, India, Philippines, China, Indonesia, Thailand, Malaysia, Argentina, and RoW

   (d) **Group F**: Eastern European transition countries comprising Czechoslovakia, after 1993 the Czech Republic, Poland, Hungary

At times we also look at aggregates of 'Southern' economies comprising groups D+E or B+D+E or B+D+E+F.

The growth rates of the respective variables used in the descriptive analysis below and the econometric research were calculated as linear time trends over the two subperiods 1980 to 1988 and 1989 to 1996.

3.2 Descriptive features of OECD trade integration with the 'South'

3.2.1 Aggregate import penetration and export ratios, 1980-96

Figure 3.1 shows the shares of imports from 'North' (group A) and 'South' (group B+D+E defined above) set in relation to production levels. It is clear that, with the exception of the USA and Japan, the shares of imports in production are much higher for imports from the 'North' than from the 'South'. For the European countries, manufactured imports from the 'South' amounted to between 5 and 10 percent of manufacturing production, while imports from the 'North' (which include imports from other EU economies) amount to between 15 and 50 percent of manufacturing production. Thus, the order of magnitude is quite different as

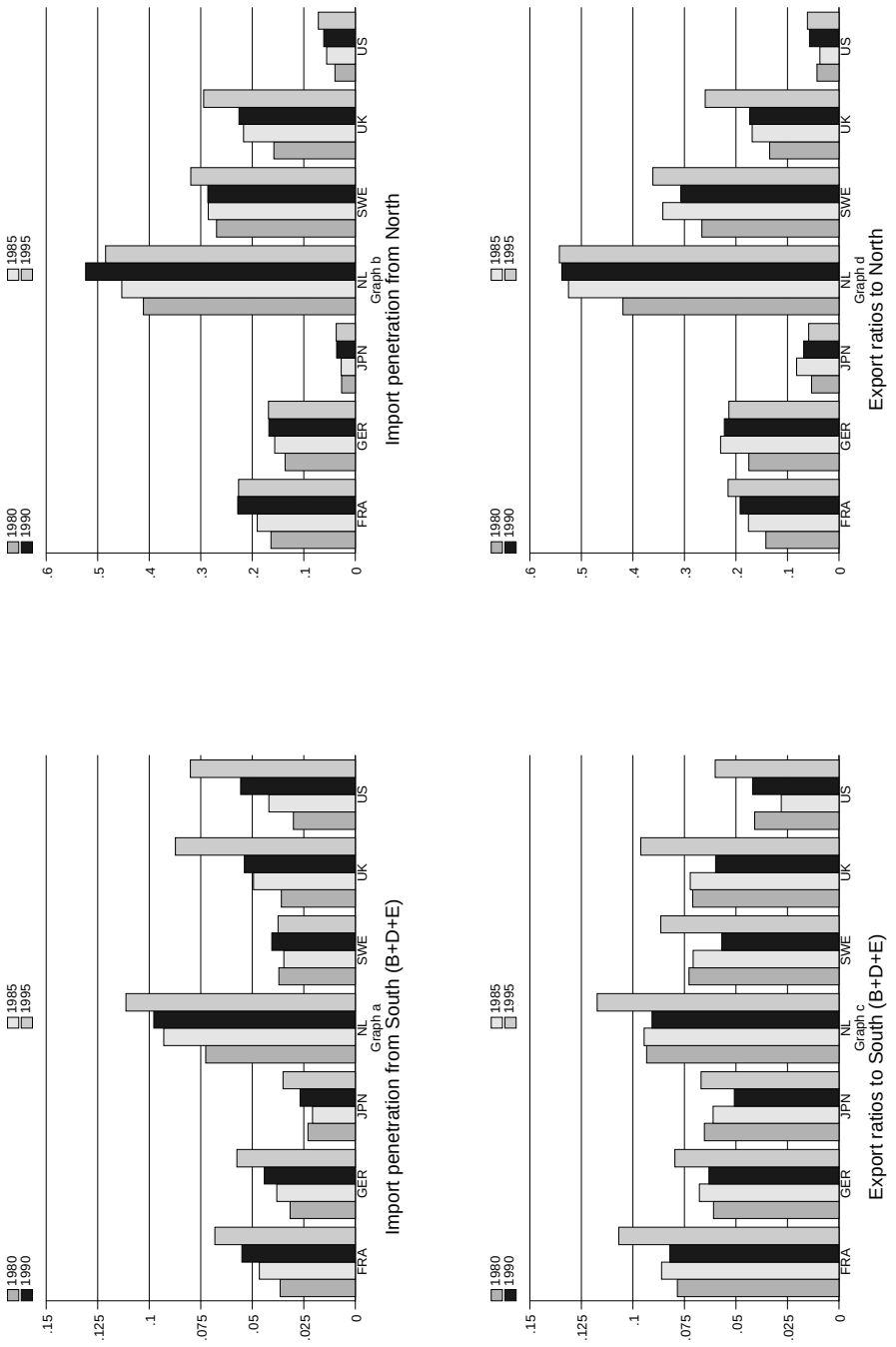

Figure 3.1: Aggregate import penetration and export ratios

regards the presence of imports on EU markets from other 'Northern' or 'Southern' economies. On the exports side the picture looks rather similar. Excluding intra-EU trade would, of course, dramatically change the picture for EU economies, bringing the importance of trade relations with the rest of the 'North' down to the US level where, by the mid-1990s, the relative importance of imports/exports from/to the 'South' and the 'North' is quite similar. The latter is also the case for Japan.

The above described pattern of import penetration can be further explored by looking at the trend growth rates of import penetration. Graph 3.2 gives the growth rates of import penetration and of export ratios (exports/production) over the period 1982-96. We can see that over the whole period 1982-96, the growth rates of import penetration from the 'South' outstrip import penetration from the 'North' by almost double. The discrepancies are smaller in the case of the smaller EU economies, Netherlands and Sweden, and also in Japan than in the other depicted OECD economies. If we subdivide the overall period into two sub-periods 1982-89 and 1989-96 we can see that the sharp increases in Europe (and Japan) in import penetration rates occurred in the second period, while in the US this happened already in the earlier sub-period (see figure 3.3). Thus import penetration from the 'South' is a more recent phenomenon in Europe (and Japan) than for the US. No wonder that the debate on 'North-South' issues took off earlier in the US than in Europe in spite of Wood's pioneering study!

3.2.2 Import penetration and export ratios to groups of 'Southern' economies

Let us now distinguish trade relations with different groups of countries from the 'South' (groups B, D, E and F; we shall also refer at times to trade with Japan, designated as group C). We examine whether there are differentiated patterns of import penetration and export ratios from/to these different groups of 'Southern' economies vis-á-vis the 'Northern' economies. The following pattern emerges (see tables 3.1 and 3.2, respectively):

- Import penetration by the 'South' as a whole increased for the European economies and Japan mostly over the second period 1989-1996, while for the US import penetration increased over both sub-periods.

- On the export side, the second period is the main period of exports/production growth to the 'South' for all the 'Northern' countries; this might be due to the opening up of these economies to imports.

There is an interesting pattern with respect to the main periods in which import penetration increased from the different country groups B, C, D, E, F:

- As one would expect the main growth of imports from the Eastern European countries is in the period after 1989. This import penetration is only relevant for the European reporting countries in our sample.

- From the Southern European countries (group B) we observe a continuous increase of import penetration (and also in export ratios) over both periods.

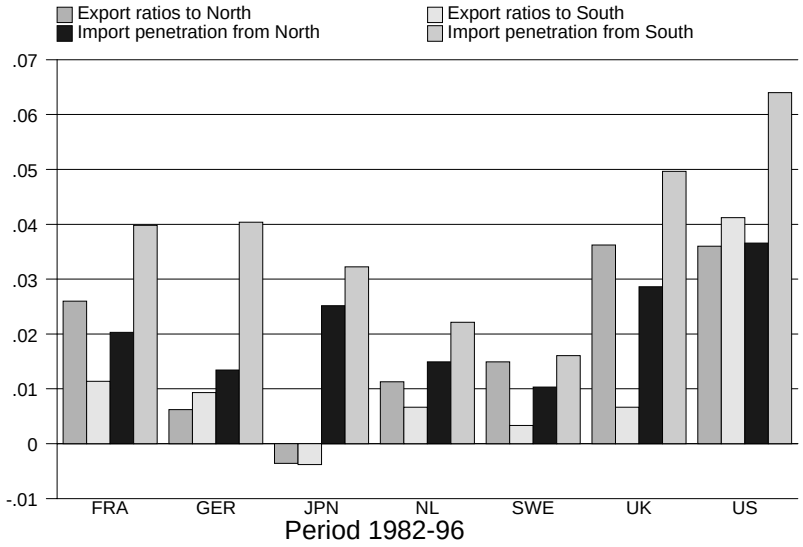

Figure 3.2: Average growth rates of export ratios and import penetration

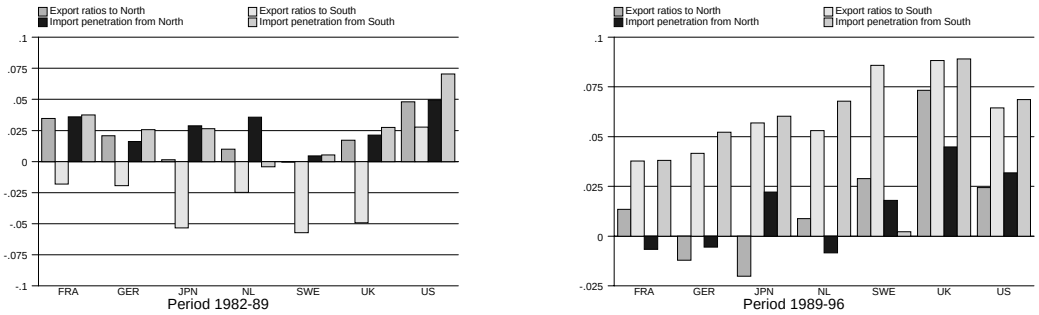

Figure 3.3: Average growth rates of export ratios and import penetration

		Country groups						
Country	**Year**	**A**	**B**	**C**	**D**	**E**	**F**	**B+D+E+F**
France	1980	0.162	0.010	0.006	0.005	0.024	0.001	0.040
	1989	0.227	0.020	0.014	0.011	0.027	0.002	0.059
	1996	0.215	0.028	0.011	0.013	0.035	0.003	0.078
Sweden	1980	0.268	0.006	0.011	0.008	0.024	0.005	0.043
	1989	0.287	0.010	0.025	0.015	0.018	0.004	0.046
	1996	0.305	0.010	0.010	0.016	0.017	0.005	0.049
Germany	1980	0.135	0.006	0.008	0.007	0.020	0.004	0.037
	1989	0.166	0.010	0.016	0.011	0.021	0.004	0.047
	1996	0.161	0.016	0.016	0.013	0.033	0.014	0.076
Netherlands	1980	0.408	0.010	0.013	0.014	0.053	0.003	0.079
	1989	0.505	0.015	0.022	0.024	0.044	0.004	0.087
	1996	0.505	0.023	0.031	0.045	0.072	0.009	0.149
United Kingdom	1980	0.150	0.006	0.010	0.016	0.022	0.001	0.046
	1989	0.218	0.012	0.021	0.026	0.027	0.002	0.067
	1996	0.291	0.020	0.024	0.038	0.058	0.004	0.120
United States	1980	0.040	0.001	0.018	0.010	0.019	0.000	0.031
	1989	0.059	0.002	0.034	0.023	0.030	0.000	0.055
	1996	0.073	0.002	0.031	0.024	0.060	0.000	0.086
Japan	1980	0.027	0.000		0.006	0.017	0.000	0.023
	1989	0.033	0.000		0.011	0.015	0.000	0.027
	1996	0.043	0.001		0.013	0.029	0.000	0.043

Table 3.1: Import penetration by country groups

		Country groups						
Country	**Year**	**A**	**B**	**C**	**D**	**E**	**F**	**B+D+E+F**
France	1980	0.141	0.012	0.002	0.003	0.065	0.002	0.081
	1989	0.191	0.024	0.006	0.008	0.051	0.001	0.084
	1996	0.204	0.035	0.006	0.013	0.053	0.005	0.106
Sweden	1980	0.264	0.010	0.004	0.007	0.058	0.005	0.080
	1989	0.308	0.016	0.007	0.010	0.033	0.003	0.062
	1996	0.356	0.019	0.016	0.019	0.062	0.010	0.110
Germany	1980	0.174	0.009	0.003	0.004	0.049	0.005	0.067
	1989	0.239	0.020	0.008	0.009	0.038	0.005	0.072
	1996	0.212	0.022	0.009	0.014	0.051	0.017	0.104
Netherlands	1980	0.417	0.015	0.002	0.006	0.074	0.003	0.099
	1989	0.515	0.029	0.006	0.011	0.051	0.003	0.095
	1996	0.569	0.038	0.008	0.023	0.067	0.011	0.138
United Kingdom	1980	0.122	0.008	0.003	0.019	0.057	0.003	0.086
	1989	0.144	0.012	0.005	0.020	0.035	0.001	0.068
	1996	0.243	0.027	0.011	0.040	0.057	0.005	0.130
United States	1980	0.043	0.002	0.007	0.007	0.033	0.000	0.042
	1989	0.047	0.002	0.012	0.012	0.026	0.000	0.041
	1996	0.061	0.002	0.014	0.017	0.044	0.000	0.064
Japan	1980	0.053	0.002		0.018	0.046	0.000	0.066
	1989	0.069	0.002		0.023	0.024	0.000	0.048
	1996	0.061	0.002		0.033	0.037	0.000	0.072

Table 3.2: Export ratios by country groups

- For Japan (country C) the main period of rising import penetration in the other 'Northern' economies' markets is the first period, and this feature is also the case for the group of Asian Tigers (group D).
- In contrast, for the group of Southern developing countries (group E which includes China) the main period of penetrating the 'Northern' countries' markets is the second period.
- On the export side, the main difference to the import penetration side is that the expansion of 'Northern' exports into the first group of Asian Tigers (D) and also Japan (C) remains important over the second period - due possibly to the above mentioned process of import liberalization.

3.2.3 Import penetration and export orientation by industry

Appendix tables A.4 and A.5 give an overview of the industries with the highest import penetration rates and export ratios from/to 'North' and 'South'. Amongst the industries with the highest import penetration rates from the 'South' feature non-ferrous metals, textiles, apparel and leather pds, other manufacturing pds (which include toys, etc.), petroleum pds, wood pds and furniture, professional goods, food, beverages and tobacco. If we look at import penetration over time (see tables A.6 and A.7, respectively, in the appendix), we find that the industries with the highest growth rates in import penetration from the 'South' over the period 1980-96 were other transport equipment, office and computing equipment, machinery and equipment nec, electrical machinery, textiles, clothing and leather pds., metal pds, radio, TV and communications equipment, and professional goods. Hence there was a significant difference in terms of industries with highest levels of import penetration and industries in which the highest rates of change in import penetration occurred!

The highest growth rates in import penetration from other 'Northern' economies are to be found in the areas: other transport equipment, radio, TV and communications equipment, iron and steel, drugs and medicines, office and computing equipment, aircraft and professional goods. If we look at the second period, 1989-96, we find that quite a few of these industries also appear as industries with the highest rates of growth of import penetration from the 'South'. Thus, while there are some differences in the industries in which import penetration proceeds fastest with 'Southern' and 'Northern' economies, there is also considerable overlap.

Industry composition of import penetration and export ratios over the periods 1982-89 and 1989-96: Appendix tables A.8 and A.9 give a detailed picture of the industries with the highest (average) rates of import penetration and exports/production ratios over the two periods 1982-89 and 1989-96 in relation to each of the groups of trading partners (A-F). Table 3.3 extracts a few industries in which most of import penetration occurred with these groups of trading partners. A few comments on this industry pattern: 'North-North' integration (i.e. with groups A and C respectively) shows a stable and similar pattern, with Japan (group C) showing a relatively stronger presence in Office machinery and Computing and in Radio, TV and Communications Equipment than does the 'Rest of the North' (group A).

Amongst the 'Southern' groups of trading partners there is quite a bit of differentiation: While amongst groups B, E and F Textiles, Apparel and Clothing comes top of the list in

Period 1 (1982-89)	Period 2 (1989-96)
Group A	
Professional goods	Professional goods
Office mach. and computing	Office mach. and computing
Aircraft	Aircraft
Motor Vehicles	Chemicals
Chemicals	Motor Vehicles
Group C	
Professional goods	Office mach. and computing
Other transport equ.	Other transport equ.
Office mach. and computing	Professional goods
Radio, TV, communications equ.	Motor vehicles
Motor vehicles	Radio, TV, communications equ.
Group B	
Textiles, Apparel and leather	Textiles, Apparel and leather
Non-ferrous metals	Motor Vehicles
Motor Vehicles	Machinery and equipment
Office mach. and computing	Mineral pds.
Machinery and equipment	Non-ferrous metals
Group D	
Textiles, Apparel and leather	Office mach. and computing
Other manufact.	Other manufact.
Office mach. and computing	Textiles, Apparel and leather
Professional goods	Professional goods
Radio, TV and communications	Radio, TV and communications
Group E	
Textiles, Apparel and leather	Textiles, Apparel and leather
Non-ferrous metals	Other Manufact.
Petroleum pds.	Non-ferrous metals
Other Manufact.	Petroleum pds
Wood pds.	Office mach. and computing
Group F	
Irrelevant for this group	Textiles, Apparel and leather
	Non-ferrous metals
	Machinery and equipment
	Wood pds.

Table 3.3: Industries with highest levels of import penetration from groups A-F in periods 1982-89 and 1989-96

both periods (we checked group F, the Central and Eastern European countries, only for the second period), in group D (the 'Asian Tigers') Office Machinery and Computing tops the list in the second period. This industry also starts to feature in group E's list of top industries in the second period. In group B, on the other hand, Motor vehicles feature in the top list, particularly in the second period. In groups B, E and F a number of natural resource-based industries also feature (non-ferrous metals, petroleum pds, wood pds, mineral pds).

Revealed comparative advantage in different skill groups of industries: Next we look at RCA (revealed comparative advantage) indicators.[1] We use here an industry ranking constructed on the basis of information available on the skill composition of the labour force in the various industries. Using OECD statistics on the share of highly skilled employees in total employment (see section 3.1 and appendix A.2) we look at RCAs and patterns of import penetration in those industries which employ the most/the least skilled work forces. Again our focus is on patterns across trading partners and changes over time. Our first set of figures 3.4a-d shows the RCAs in the industries (always an aggregate of 8 out of 23) with highest and lowest skill content where the RCAs are always calculated from the point of view of the reporting countries. The graphs show the 3 year averages for the periods 1984-86 and 1994-96. We can see that in relation with the 'North', Japan and to a lesser extent the US, maintain relatively high positive RCAs in the most skill-intensive industries. In relation to the 'South' (groups B and the combined group D+E) the reporting countries all have high positive RCAs in high skill industries in the first period and, while these remain positive in the second period, they diminish significantly in relation to group D+E and in some instances also in relation to group B. For completeness sake we also show the graph for the industries with lowest skill content (3.4b) without further discussing it.

Graphs 3.4c and 3.4d allow us to further concentrate on the 'South' (groups B, D, E). We can see here that the reporting countries except Japan are building up pretty high negative RCAs in the industries with the highest skill content with country group D (with the exception of Sweden due to communications equipment). With group E we observe significantly shrinking positive RCAs in this group of industries. This is also the case in some instances in relation to group B. To avoid overload, we did not include group F (the Central and Eastern European economies) in the graphs, but here the reporting countries show positive RCAs in the group of high skill industries. Graph 3.4d shows RCAs for industries with the lowest skill content.

3.2.4 Import penetration, export activity, employment and wage growth

Before coming to our econometric analysis on the relationship between trade integration and labour markets we shall present a few descriptive features of increasing trade integration, on the one hand, and labour market developments, on the other.

We do this by looking at various groups of industries which occupy 'top' or 'bottom positions' in a number of rankings and check at the same time the other characteristics of

[1] The RCA measure was calculated as

$$RCA_i = \frac{X_i - M_i}{\sum_i (X_i + M_i)}$$

where $i = 1, \ldots, n$ stands for industries.

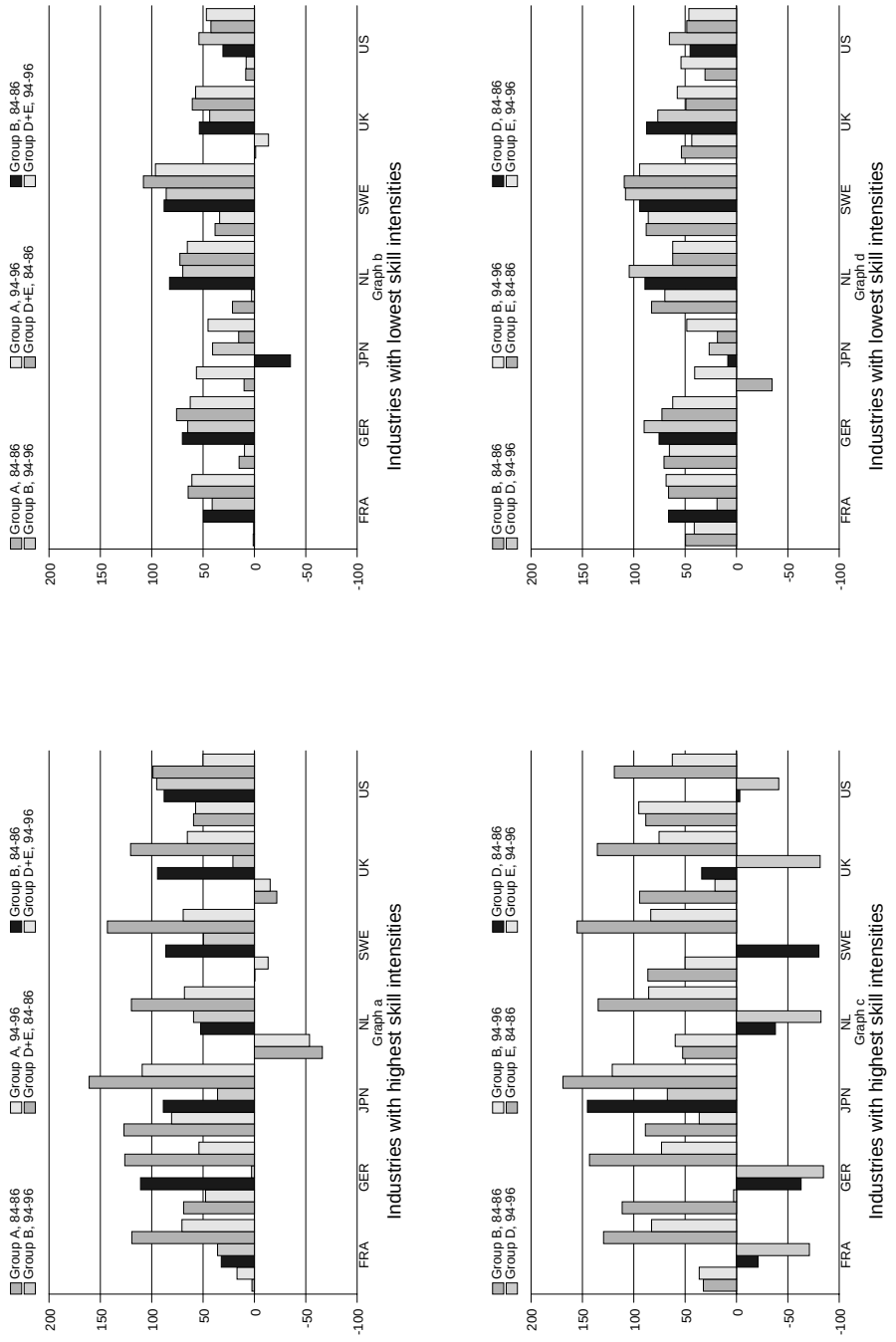

Figure 3.4: Revealed comparative advantages with country groups

these industries. Thus, e.g. we look at the industries which experienced the highest growth rates in import penetration over the period 1980-96 from the 'South' and check what happened to employment or wage growth in these industries relative to the total set of industries. Let us start again with the industries which have the highest/lowest skill content. Graphs 3.5a-d show what happened to (rates of change of) import penetration - from the different groups of trading partners - as well as to employment and wage growth in these industries, all relative to the average in total manufacturing.

Graphs 3.5a and 3.5b (covering respectively the full period 1980-96 and the more recent period 1989-96) reveal that the industries with the highest skill intensities experienced high growth of import penetration particularly from the 'South' (groups D+E and B), a pattern which is even more marked in the more recent period. With few exceptions (Sweden over the whole period, Germany over the more recent period) these are also industries in which employment growth is above average, in which (labour) productivity growth is above average (with UK an exception over the whole period, and Netherlands and Sweden over the more recent period) and wage growth is above average (again with UK as an exception over the longer period, and a few more exceptions over the more recent period).

Graph 3.5c gives the information for the period 1980-96 for the group of low skill industries: these show below average growth rates of import penetration, especially from the 'South' (groups D+E and B); they are (with UK as exception) industries with below average (labour) productivity growth, below average wage growth (Sweden and Netherlands are exceptions) and, interestingly, like the high-skill industries, they show above average employment growth. The latter result implies that the industries in between, i.e. neither the high- nor low-skill industries, experienced below average employment growth.

Finally, we look at one more grouping of industries to check preliminarily the relationship between trade integration with the 'South' (defined as group D+E) and labour market variables. Graph 3.5d presents the industries with the highest growth rates of import penetration with the 'South' and allows to check whether these industries have above/below average wage, employment and productivity growth. We can see that the industries with highest growth in import penetration from the 'South' had above average productivity growth rates. Interpreting this causally, this could be seen as evidence for 'defensive restructuring'. However, we caution against this interpretation as we also saw that these industries were also more skill-intensive than average manufacturing and this alone could be the course of uneven productivity growth. As regards direct evidence from this grouping, we cannot detect a clear picture concerning relative wage or employment growth for these industries.

Thus while this preliminary analysis of the relationship between increasing trade integration and labour market variables brought some insights, it is time to turn to econometric estimation which can exploit the variation in the full dataset (across industries and countries) and allows for joint estimations of the impact of a variety of relevant variables.

4 Econometric Model and Analysis

In the following we shall first derive a simple model with which the impact of international trade integration upon labour market variables (employment and wage rates) can be analysed.

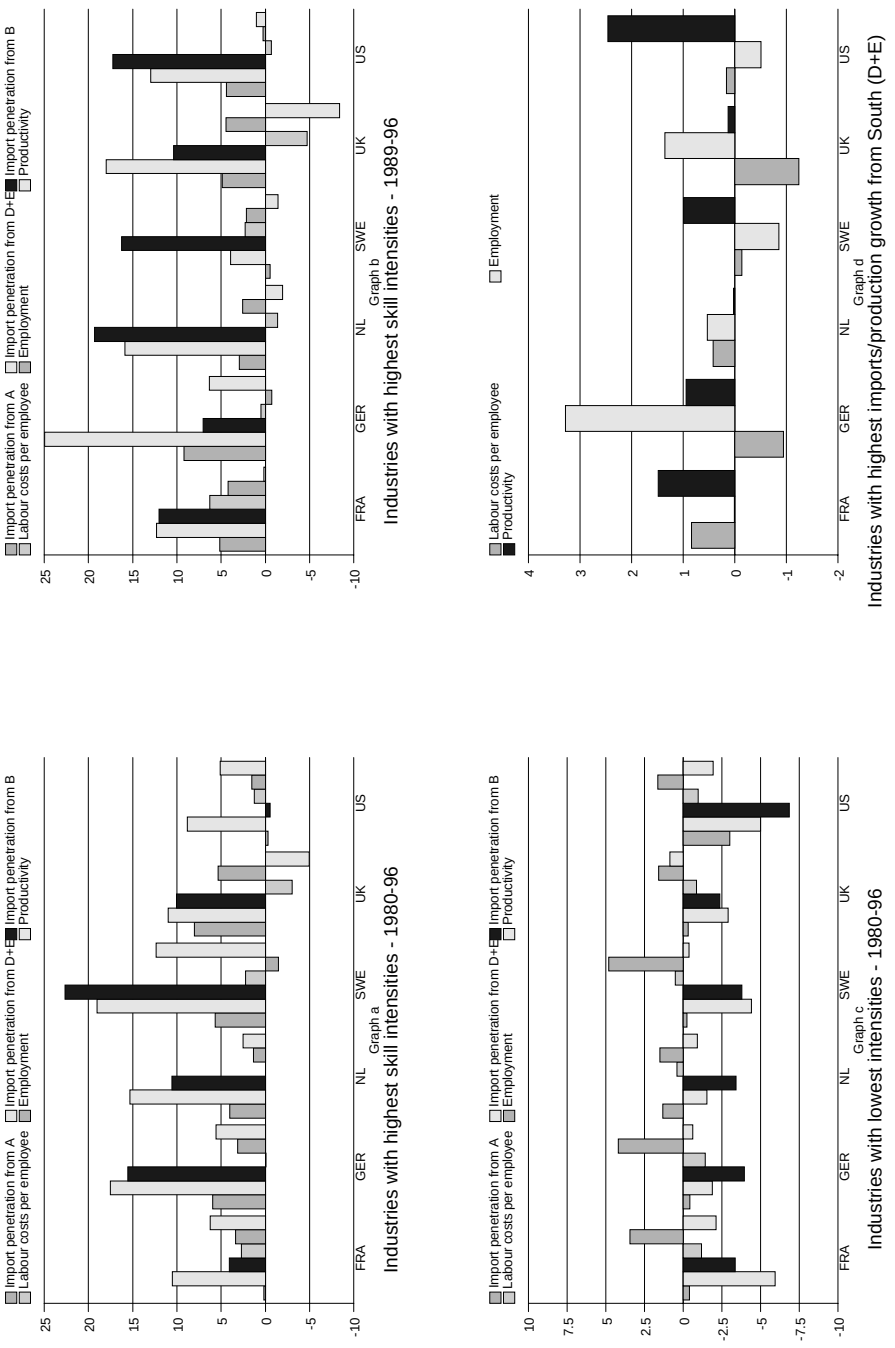

Figure 3.5: Differences in growth rates from total manufacturing

Secondly, we present the estimates of this model within the constraints of our dataset.

4.1 Theoretical model

We start with a simple production function for a firm in industry i as

$$q_i = (A_i l_i)^{\alpha_i} K_i^{1-\alpha_i}$$

with $0 < \alpha_i < 1$, where we assume that technical progress A_i is labour augmenting. This production function is the same for each firm in industry i but may differ across industries. Further we assume that prices p_i are determined exogenously in world markets. The production factor K_i refers to infrastructure, etc. and can thus be seen as a fixed factor for each firm. Standard profit maximization (with respect to efficiency units of labour) yields labour demand for each firm in industry i as determined by

$$l_i = (\alpha_i p_i)^{\frac{1}{1-\alpha_i}} w_i^{\frac{1}{\alpha_i - 1}} A_i^{-1} K_i$$

Given p_i, the industry wage rate w_i, K_i and A_i, then employment levels l_i and output levels q_i are determined for the individual firm. Given total industry demand Q_i, this determines the number of firms in the industry as $n_i = \frac{Q_i}{q_i}$. Total employment demand in industry i is then $L_i = n_i l_i$. Assuming that the production functions are linearly homogenous, total demand for labour in industry i can be written as

$$L_i = (\alpha_i p_i)^{\frac{1}{1-\alpha_i}} w_i^{\frac{1}{\alpha_i - 1}} A_i^{-1} K_i n_i = (\alpha_i p_i)^{\frac{1}{1-\alpha_i}} w_i^{\frac{1}{\alpha_i - 1}} A_i^{-1} K_i \frac{Q_i}{q_i}$$

In this formulation rising industry demand (other parameters remaining constant) increases the number of firms while the output level of each firm remains constant. The demand components are domestic demand D_i and foreign demand (exports) X_i. Further one has to subtract imports M_i which are assumed to be perfect substitutes to domestic production. To calculate the effect on home labour demand one can calculate the labour equivalent of home production as

$$L_i^m = (\alpha_i p_i)^{\frac{1}{1-\alpha_i}} w_i^{\frac{1}{\alpha_i - 1}} A_i^{-1} K_i n_i^m = (\alpha_i p_i)^{\frac{1}{1-\alpha_i}} w_i^{\frac{1}{\alpha_i - 1}} A_i^{-1} K_i \frac{M_i}{q_i}$$

This is just the amount of labour which would be demanded if these goods would be produced in the home country. Production at home is $Q_i = D_i + X_i - M_i$ and total employment demand can be calculated as

$$L_i = (\alpha_i p_i)^{\frac{1}{1-\alpha_i}} w_i^{\frac{1}{\alpha_i - 1}} A_i^{-1} K_i \frac{1}{q_i} (D_i + X_i - M_i)$$

Taking logarithms and the derivative with respect to time yields

$$\frac{\dot{L}_i}{L_i} = \frac{1}{1-\alpha_i}\frac{\dot{p}_i}{p_i} - \frac{1}{1-\alpha_i}\frac{\dot{w}_i}{w_i} - \frac{\dot{A}_i}{A_i} + \frac{\dot{K}_i}{K_i} + \left(\frac{D_i}{Q_i}\frac{\dot{D}_i}{D_i} + \frac{X_i}{Q_i}\frac{\dot{X}_i}{X_i} - \frac{M_i}{Q_i}\frac{\dot{M}_i}{M_i}\right)$$

This equation shows that employment demand is negatively affected by rising wage rates and labour productivity growth and positively affected by rising prices and an increase in the fixed factor (infrastructure). Further the growth rates of domestic demand and exports have a positive impact on the growth rate of labour demand and rising imports have a negative impact. These growth rates are weighted by the shares of the respective components in domestic production Q_i. In a more advanced setting one would have to take into account that these shares are changing over time if domestic demand, exports and imports experience different growth rates. We shall skirt around this theoretical problem by using fixed mid-period ratios of these shares in the econometric model we estimate below.

The underlying model to estimate the effects of export and import growth on wage rates (by industry) is very straightforward: higher demand for goods in industry i shifts the demand curve for labour outward which leads to higher wages assuming a normally positively sloped supply curve. Symmetrically, an increase in import penetration shifts the demand curve for labour inwards which results in lower wages. Increases in labour productivity raises the marginal product of labour which results in higher (real) wages. This assumes that the pressure on wages by laid off workers is small.

4.2 Econometric analysis: Employment and wage effects of international trade

In this section we use the same data as in section 3 and we do not include the Central and Eastern European countries as the relevant data period after trade liberalization is too short. We divide the period into two subperiods 1980 to 1988 and 1989 to 1996. The growth rates of the respective variables were calculated as above. Further we dropped industry 384d (Discrepancy, scrap metals) for reasons of data quality. Labour productivity is measured as output per employee. Unfortunately data for the price movements and the development of domestic demand are not available. The effects of these variables (such as different shifts in domestic demand across countries and industries) together with the not specified stock of a complementary factor (infrastructure) K_i is taken into account by industry and country dummies.

As mentioned above the changes in the shares of exports and imports in domestic production over the estimation period should be taken into account. However, in the cross sectional framework used below (which works only with trend growth rates over the relevant period), this cannot be modelled dynamically over time. In the econometric analysis we proxied the shares by taking averages over the respective time periods. The respective growth rates are then multiplied by these shares (see last equation in section 4.1 above). The implication is that imports and exports have a larger impact on employment or wages if either the share of imports or exports in domestic production is high or the growth rates of imports or exports are high, or both.

The simple theoretical framework introduced above resulted in the following econometric

model.

$$\begin{aligned} EMPN_i^c &= \beta_1 EXP_i^{cg} + \beta_2 IMP_i^{cg} + \\ &+ \beta_3 OPR_i^c + \beta_4 LCPE_i^c + \\ &+ d_i + d^c \end{aligned}$$

The variables included in the analysis thus were the growth rates of employment in sector i ($EMPN_i^c$) as dependent variable, the growth rates of labour productivity (OPR_i^c), and finally the growth rates of labour costs per employee ($LCPE_i^c$). d_i and d^c denote industry and country dummies respectively. The variables EXP_i^{cg} and imports IMP_i^{cg} denote the growth rates of exports and imports by industry i from country group g (g=A,B,C,D,E) multiplied by the export shares and import penetration ratios for each industry (time averages over the two sub-periods) to which the reporting country is exporting and from which it is importing.

Similarly the equation for wage rates is specified as:

$$\begin{aligned} LCPE_i^c &= \beta_1 EXP_i^{cg} + \beta_2 IMP_i^{cg} + \\ &+ \beta_3 OPR_i^c + \\ &+ d_i + d^c \end{aligned}$$

The regressions are estimated for the two periods separately. The introduction of dummies for each industry and country means that we estimate a two-way panel data set using the LSDV-estimator. These two sets of dummy variables account for the effects of industry and country specific characteristics (price changes, shifts in domestic demand, etc.).

4.2.1 Results for the total sample

The tables below report the results for two time periods and both dependent variables. Further the results are differentiated by the five country groups OECD-North (A), Southern Europe (B), Japan (C), 'Asian Tigers' (D), and Developing Countries(E). The tables in the text only report the estimated parameters for exports, imports, productivity and labour costs per employee. The complete set of estimates, including the industry and country dummies are presented in the appendix (tables A.10 to A.14). In the first analysis we included all industries in the sample and estimated the equations above for the five country groups and for both periods separately. Tables 4.1 and 4.2 report the results for employment growth and the growth of labour costs per employee, respectively. Below the coefficients the p-values are reported. ***, **, and * denote significance at the 1, 5, and 10 percent level respectively. Tables A.10 to A.14 in the appendix show the results for all variables including industry and country dummies and further statistics.

The growth rates of productivity and labour costs per employee have the expected negative effect on employment growth in the first period but not so in the second in which only the estimate for labour costs per employee is significant. Productivity had a significant and, as expected, positive effect on labour costs per employee (wages) in both periods. For the trade variables it turned out that the division into the two periods is quite important. Import penetration had a significant negative effect on employment growth in the first period (1982-1989) with the exception of imports from Japan (C). But this effect vanishes in the second

	Period 1				
	A	**B**	**C**	**D**	**E**
Exports	0.093	-0.940	-1.293	1.977 **	-0.138
	0.476	0.162	0.466	0.024	0.671
Imports	-0.194 *	-1.363 **	-0.072	-0.757 ***	-1.364 ***
	0.060	0.041	0.847	0.000	0.002
Productivity	-0.259 ***	-0.254 ***	-0.284 ***	-0.267 ***	-0.253 ***
	0.000	0.000	0.000	0.000	0.000
Labour costs	-0.294 **	-0.288 **	-0.179	-0.245 **	-0.212 *
	0.023	0.026	0.206	0.047	0.098
R^2	0.784	0.777	0.792	0.794	0.779
$\bar{R}^2$	0.727	0.719	0.728	0.739	0.720
$Prob > F$	0.000	0.000	0.000	0.000	0.000
N	154	154	132	154	154
	Period 2				
	A	**B**	**C**	**D**	**E**
Exports	0.179 ***	1.863 ***	6.008 ***	1.299	0.834 *
	0.001	0.001	0.000	0.266	0.097
Imports	-0.310 **	1.021	0.388 *	0.108	0.125
	0.014	0.316	0.089	0.484	0.649
Productivity	-0.044	-0.029	-0.119	-0.022	-0.075
	0.595	0.725	0.191	0.792	0.394
Labour costs	-0.468 ***	-0.489 ***	-0.551 ***	-0.453 **	-0.404 **
	0.007	0.005	0.004	0.013	0.026
R^2	0.517	0.515	0.592	0.480	0.487
$\bar{R}^2$	0.391	0.388	0.467	0.344	0.353
$Prob > F$	0.000	0.000	0.000	0.000	0.000
N	154	154	132	154	154

Table 4.1: Regression results for employment growth including all industries

	Period 1				
	A	**B**	**C**	**D**	**E**
Exports	0.207 **	-0.346	0.860	-0.184	0.337
	0.023	0.462	0.490	0.774	0.140
Imports	-0.181 **	-0.516	-0.147	-0.071	-0.043
	0.011	0.000	0.575	0.588	0.890
Productivity	0.138 ***	0.139 ***	0.126 ***	0.136 ***	0.144 ***
	0.000	0.917	0.001	0.000	0.000
R^2	0.967	0.966	0.970	0.965	0.966
$\bar{R}^2$	0.959	0.958	0.961	0.957	0.957
$Prob > F$	0.000	0.000	0.000	0.000	0.000
N	154	154	132	154	154
	Period 2				
	A	**B**	**C**	**D**	**E**
Exports	0.007	0.135	0.135	0.135	0.135
	0.796	0.649	0.612	0.861	0.319
Imports	0.006	0.466	0.466	0.466	0.466
	0.925	0.378	0.930	0.621	0.281
Productivity	0.197 ***	0.194 ***	0.194 ***	0.194 ***	0.194 ***
	0.000	0.000	0.000	0.000	0.000
R^2	0.868	0.869	0.879	0.869	0.869
$\bar{R}^2$	0.835	0.836	0.843	0.836	0.836
$Prob > F$	0.000	0.000	0.000	0.000	0.000
N	154	154	132	154	154

Table 4.2: Regression results for growth of labour costs per employee including all industries

period for all country groups with the exception of imports from OECD 'Northern' countries (A) where it remained significantly negative and was even higher than in the first period. For the other countries the coefficients become even positive, but only significant at the 10 % level for imports from Japan. Exports had a significant and positive effect on employment growth only for exports to country group D ('Asian Tigers') in the first period. But the estimates for this variable are positive and significant in the second period with the exception of increased exports/production growth to country group D. We found no significant impacts of the trade variables on the growth rates of labour costs per employee with the exception of a positive and significant effect of increased export ratios to OECD 'Northern' countries. Summarizing this, it seems, first, that trade integration (i.e. growth in import penetration and in exports/production) matters, but differently in the two periods: Whereas in the first period the negative effects (on employment growth) are more important, in the second period there are positive effects on employment growth. Second, it seems that there is on average more impact on the quantity side of the labour market (i.e. employment) than on the wage side.

In the regressions with employment growth as the dependent variable the dummies for 3200 (textiles, apparel and leather), 3534a (petroleum refineries and products), 3556a (rubber and plastic products), 3710 (iron and steel), 3720 (non-ferrous metals), 3825 (office and computing equipment), 3832 (radio, TV and communication nec), 3841 (shipbuilding and repairing), and 3842a (other transport equipment nec) are negatively significant and for industry 3522 (drugs and medicine) the dummy is positively significant (at the 5 % level) in the first period. These dummies become insignificant in the second period with the exception of 3825 (office and computing equipment) where it becomes negatively significant. On the other hand the industry dummies are not at all significant for growth of labour costs per employee in the first period, but are significantly negative in the second period for almost all industries (15 out of 22 industries). Further the country dummies are significant in the employment regressions for Japan, Sweden and the US in the first period.

4.2.2 Results for high- and low-skill intensive industries

From a Heckscher-Ohlin perspective one would expect that developing countries would exert more pressure on low-skill intensive sectors. This kind of specialization effect cannot be directly estimated in the form that we have set up our model as we implicitly assume the same impact of the trade variables across all industries. However, we can decompose our sample into groups of high-skill and low-skill industries, as we have already done in section 3 above. Especially on the wage side, trade liberalization with the 'South' should have a stronger impact on the industries which employ more unskilled labour. On the employment side, we do not expect a priori differences in the parameter estimates for these two types of industries, as differences due to specialization would already be included in the sizes of the import and export growth rates for the different industries. Nonetheless, there could be differences also here due to the problem with variable shares which we have assumed to remain constant over the period (see discussion above). As against the expectations of the Heckscher-Ohlin model, we also introduced in section 3 above a 'dynamic Ricardian' model with Gerschenkron features (for a full discussion of such a model, see Landesmann and Stehrer, 2000; Stehrer, 2001) in which the pressures of trade integration with a 'catching-up South' could be felt more in industries

in which the 'scope for productivity catching-up' is the highest, i.e. in the industries with the highest initial productivity gap; and these industries could very well be the industries with a higher share of skilled labour. The following estimates could also be seen as a test of these two competing models. So, let us look at the results.

We estimated the same model introduced above for the two subsets of industries (low-skill intensive and high-skill intensive, respectively). Again, the exercise was done for both the dependent variables, employment growth and wage growth and for each of the two sub-periods separately. Tables 4.3 to 4.6 report the results. (The complete set of results is reported in the appendix tables A.15 to A.19.)

			Period 1		
	A	**B**	**C**	**D**	**E**
Exports	0.535 **	0.646	-0.319	2.000	0.141
	0.021	0.572	0.887	5.441	0.816
Imports	-0.515 ***	-5.844 **	-0.565	-0.594 **	-2.518 ***
	0.005	0.024	0.264	0.010	0.001
Productivity	-0.269 **	-0.256 *	-0.435 ***	-0.344 ***	-0.352 ***
	0.030	0.050	0.003	0.008	0.005
Labour costs	-0.264	-0.227	-0.017	-0.083	-0.081
	0.289	0.381	0.949	0.738	0.742
R^2	0.815	0.798	0.818	0.805	0.821
$\bar{R}^2$	0.727	0.703	0.719	0.713	0.736
$Prob > F$	0.000	0.000	0.000	0.000	0.000
N	56	56	48	56	56
			Period 2		
	A	**B**	**C**	**D**	**E**
Exports	0.200 **	1.806	6.875 **	1.878	0.751
	0.033	0.104	0.017	0.498	0.426
Imports	-0.499 **	3.228	0.299	0.040	0.125
	0.046	0.272	0.458	0.877	0.797
Productivity	-0.010	0.071	-0.076	0.085	0.007
	0.956	0.682	0.680	0.633	0.970
Labour costs	-0.618	-0.773 *	-1.009 **	-0.629	-0.569
	0.139	0.077	0.036	0.155	0.194
R^2	0.413	0.363	0.452	0.331	0.347
$\bar{R}^2$	0.134	0.061	0.151	0.014	0.038
$Prob > F$	0.151	0.307	0.159	0.439	0.369
N	56	56	48	56	56

Table 4.3: Regression results for employment growth in high-skill intensive industries

Again, labour productivity has a negatively significant effect on emplyoment growth in the first period which vanishes in the second period. This is the same in both industry groups.

	Period 1				
	A	**B**	**C**	**D**	**E**
Exports	0.180	0.470	0.381	-0.149	-0.667 *
	0.212	0.510	0.802	0.866	0.085
Imports	-0.153	-1.908	-0.146	-0.013	0.093
	0.175	0.609	0.668	0.928	0.834
Productivity	0.304 ***	0.314 ***	0.328 ***	0.312 ***	0.285 ***
	0.000	0.023	0.000	0.000	0.000
R^2	0.974	0.974	0.976	0.973	0.975
$\bar{R}^2$	0.963	0.962	0.964	0.961	0.964
$Prob > F$	0.000	0.000	0.000	0.000	0.000
N	56	56	48	56	56
	Period 2				
	A	**B**	**C**	**D**	**E**
Exports	0.016	0.419	0.419	0.419	0.419
	0.654	0.305	0.339	0.442	0.900
Imports	0.026	1.188	1.188	1.188	1.188
	0.787	0.275	0.983	0.870	0.704
Productivity	0.156 **	0.141 **	0.141 **	0.141 **	0.141 **
	0.018	0.024	0.108	0.020	0.027
R^2	0.867	0.872	0.882	0.867	0.865
$\bar{R}^2$	0.809	0.816	0.823	0.808	0.807
$Prob > F$	0.000	0.000	0.000	0.000	0.000
N	56	56	48	56	56

Table 4.4: Regression results for growth of labour costs per employee in high-skill intensive industries

	Period 1				
	A	**B**	**C**	**D**	**E**
Exports	-0.428	8.908 **	7.237	0.997	-0.355
	0.255	0.032	0.524	0.640	0.676
Imports	-0.502	-1.540 *	3.424 **	-3.070 ***	-0.799
	0.154	0.062	0.015	0.003	0.600
Productivity	-0.249 **	-0.192 *	-0.261 **	-0.313 ***	-0.222
	0.024	0.067	0.025	0.007	0.060
Labour costs	-0.756 **	-0.965 ***	-0.498	-0.729 **	-0.789
	0.045	0.004	0.234	0.022	0.067
R^2	0.839	0.848	0.858	0.861	0.814
$\bar{R}^2$	0.753	0.768	0.770	0.787	0.715
$Prob > F$	0.000	0.000	0.000	0.000	0.000
N	49	49	42	49	49
	Period 2				
	A	**B**	**C**	**D**	**E**
Exports	-0.004	-0.438	-1.170	-0.590	-0.133
	0.988	0.653	0.749	0.689	0.825
Imports	-0.014	0.096	0.027	-0.715	0.634
	0.918	0.877	0.955	0.347	0.147
Productivity	0.000	0.007	0.008	0.032	-0.007
	0.998	0.939	0.945	0.750	0.942
Labour costs	-0.375 **	-0.368 *	-0.414 *	-0.410 **	-0.315 *
	0.039	0.050	0.066	0.022	0.076
R^2	0.932	0.932	0.938	0.934	0.936
$\bar{R}^2$	0.895	0.896	0.899	0.898	0.903
$Prob > F$	0.000	0.000	0.000	0.000	0.000
N	49	49	42	49	49

Table 4.5: Regression results for employment growth in low-skill intensive industries

	Period 1				
	A	**B**	**C**	**D**	**E**
Exports	0.447 ***	1.127	-1.235	-0.757	1.067 ***
	0.008	0.609	0.816	0.536	0.001
Imports	-0.274 *	-0.321	-0.281	0.235	-0.807
	0.091	0.609	0.651	0.670	0.199
Productivity	0.080	0.124 **	0.099 **	0.118 *	0.118 **
	0.107	0.023	0.049	0.053	0.010
R^2	0.984	0.980	0.986	0.980	0.986
$\bar{R}^2$	0.976	0.971	0.979	0.971	0.979
$Prob > F$	0.000	0.000	0.000	0.000	0.000
N	49	49	42	49	49
	Period 2				
	A	**B**	**C**	**D**	**E**
Exports	0.029	1.320	1.320	1.320	1.320
	0.908	0.151	0.114	0.951	0.423
Imports	0.155	0.945	0.945	0.945	0.945
	0.266	0.107	0.469	0.299	0.266
Productivity	0.191 **	0.157 *	0.157 *	0.157 *	0.157 *
	0.036	0.073	0.002	0.034	0.019
R^2	0.956	0.960	0.967	0.956	0.958
$\bar{R}^2$	0.935	0.941	0.949	0.934	0.938
$Prob > F$	0.000	0.000	0.000	0.000	0.000
N	49	49	42	49	49

Table 4.6: Regression results for growth of labour costs per employee in low-skill intensive industries

Further productivity growth has a positive impact on the growth rates of wages (labour costs per employee) in both periods. The estimated coefficient for this variable is higher in the skill intensive industries in the first period and almost the same for both types of industries in the second period. Further, labour costs per employee have a negatively significant impact on the growth rate of employment in the low-skill intensive industries in both periods, although the size of the coefficient is smaller in the second. In the high-skill intensive industry we found no significant effect of labour costs per employee, with the exceptions of the estimates for country groups B and C as trading partners in the second period.

With respect to the import penetration variable we see the following: In the low-skill intensive industries there is a significant and negative effect from country groups B (Southern Europe) and D ('Asian Tigers') in the first period on employment growth. For country group C (Japan) the effect is positive and significant. In the second period we found no significant impact. In the high-skill industries there was a significant and negative impact in the first period from all country groups with the exception of Japan, with at times larger coefficients than for the low-skill intensive industries. Again, this effect vanishes in the second period in which only import penetration from OECD 'Northern' countries (A) has a significant impact. Increased export orientation is positively significant in the first period only for country group A (OECD 'North') in the high-skill intensive sectors and for country group B (OECD 'South') in the low-skill intensive sectors. In the second period there are positively significant effects of increased export orientation with country groups A (OECD 'North') and Japan (C).

With respect to the growth rates of labour costs by employee we found no significant impact of the trade variables in the high-skill intensive industries. In the low-skill intensive industries the estimated coefficients are positive and significant for exports to country group A (OECD 'North') and country group E (Developing countries) in the first period and not significant at all in the second period.

For the dummies we find a similar pattern as already discussed in the regressions including all industries. In the employment regressions the industry dummies are significantly positive in the first period for all but one industry amongst the low-skill intensive industries but become insignificant or negatively significant for 3300 (textiles, apparel, and leather) and 3710 (iron and steel). In the skill-intensive industries the dummies are significantly positive in 3825 (office and computing equipment) and significantly negative in 3841 (shipbuilding and repairing). These are becoming insignificant in the second period.

In the regressions with labour costs per employee as dependent variable the industry dummies are not significant in the first period (the only exception being industry 3825 in the high-skill intensive industries with a significantly positive industry dummy). In the second period the dummies are significant in most of the low-skill intensive industries (positive) and negatively significant in industry 3841 (shipbuilding and repairing) in the skill intensive industries.

Country dummies in the employment growth regressions are negatively significant for Sweden in the low-skill industries in the second period and positively significant for the US.

5 Conclusions

This study is a quantitative examination of the relationship between 'North-South' trade integration over the period 1980-1996 and labour market developments in the 'North'. It has a number of specific features:

- First, it looked at a range of OECD economies which - for the purposes of this study - comprised 'the North': France, Germany, Netherlands, Sweden, United Kingdom, USA, Japan. The literature on North-South trade integration and labour markets has had so far few contributions on the European economies. Quantitatively, the process of trade integration with the 'South' speeded up in the 1990s in Europe as compared to the 1980s, while for the US it was more evenly spread; hence the inclusion of a range of European economies in the analysis was deemed important.

- Secondly, we found it useful to look at a number of country groupings comprising the 'South': Southern European economies (group B), Central and Eastern European economies (group F), the first group of 'Asian Tigers' (group D), and a large group of Asian and Latin American developing and catching-up economies (group E). Trade integration with these different 'Southern' country groupings had a number of differentiating features which we wanted to explore in this study.

Let us mention a few of these differences:

- We found that the main thrust of import penetration from the 'Asian Tigers' into 'Northern' markets (and also from Japan) took place over the period 1980-89 (the 'first period' of our analysis), while that from the larger set of developing and catching-up economies (group E) was mainly the period 1989-96; this was of course also the case for the Central and Eastern European transition economies (group F). Import penetration from Southern Europe (group B) proceeded evenly over both sub-periods.

- With regard to the composition of imports by industry from these country groupings also important differences emerged: We could see that as regards the presence of the more traditional labour intensive branches (textiles, apparel and leather pds) there is a differentiation between the more advanced of the catching-up economies (group D) which have vacated this area of specialization and the larger group of developing economies (group E) which maintain a strong presence in this area (also the case for the Southern European and Eastern European economies). The same is true with respect to resource-based industries, such as mineral pds, non-ferrous metals, petroleum pds, and wood pds. In both groups D and E, office machinery and computing equipment is occupying a prominent place in the range of industries in which import penetration is highest. On the other hand, amongst the Southern European economies and Central and Eastern European economies feature, apart from the labour-intensive and resource-intensive industries mentioned above, machinery and motor vehicles.

- Using an industry ranking by skill content, we find that the most advanced amongst the catching-up economies (group D) achieve positive RCA values (net trade balance

ratios) in the group of industries with the highest skill content and the wider group of developing and catching-up economies (group E) has significantly shrinking negative RCAs in this industry grouping in relation to the Northern economies. This is also the case (in some instances) with the Southern European economies (group B). The evidence is thus of an increasingly strong presence of some of the 'Southern' economies in higher-skill industries.

*T*rade integration with the South and labour market effects

- A first examination of the relationship between *trade integration with the South and labour market variables* gives further evidence to the fact that the industries with the highest skill content also showed higher than average increases in import penetration from the 'South' (defined here as groups D+E and B) a pattern which gets more marked in the most recent period. These are also the industries in which there is - in the 'North' - above average employment growth and also productivity and wage growth. If, on the other hand, we focus on the industries with the highest rates of increase in import penetration from the South we can not detect a general pattern with regard to (above/below average) employment and wage growth; they are, however, generally industries with above average productivity growth. Consistent with the earlier pattern observed, we find that the industries with the lowest skill content (in the North), show below average increases in import penetration from the South and below average productivity and wage growth.

- Let us now move to summarizing the results from *econometric estimates* which linked both increasing import penetration and export orientation to the two types of labour market variables, employment and wage growth. The model estimating a relationship between employment growth and increasing trade integration also allowed for productivity and wage effects on employment as well as for country and industry-specific shifts in demand. The model estimating the effects of trade integration on wage rates (or labour costs) included productivity changes and, again, country- and industry-specific shifts in labour demand and supply schedules. Further the model was estimated for two sub-periods 1982 to 1988 and 1989 to 1996. The following results were obtained:

- In the employment regressions the growth rates of productivity and labour costs per employee had the expected signs, although the effect of productivity growth was not significant in the second period. Generally, import penetration had a significant negative effect on employment growth in the first period which vanishes in the second period (with the exception of import penetration from the OECD Northern countries which remained significant). Export growth had a significant positive effect on employment growth in the first period only for exports to the 'Asian tigers'. In the second period this variable is positively significant for all the other country groups with exception of exports to the 'Asian tigers'.

- For the second set of equations with the growth rate of labour costs per employee as the dependent variable we found no significant impact of the trade integration variables. The only exception here is the growth rate of export ratios to OECD 'Northern' economies.

- Summarizing the results it seems, that trade integration matters in general, although quite differently in the two sub-periods and for the two labour market variables. Whereas in the first period the negative effects are more important we find positive effects in the second period. Further, the labour market seems to be more affected on the quantity side (employment growth) than on the wage side.

In an additional exercise, we divided the sample into high- and low-skill intensive industries to capture the effects of a possible sector-bias of trade integration (i.e. specialization effect). We shall report here only the effects of the trade variables.

Starting again with the impact on employment growth as the dependent variable, we found in the low-skill intensive industries significant and negative impact of import penetration from catching up countries (Southern Europe and the Asian tigers) which vanishes in the second period. But we found again negative (and significant) and even higher coefficients in the high-skill intensive industries from all country groups with exception of import penetration from Japan. Again, this effect vanishes in the second period in which only the effect of import penetration from OECD 'Northern' countries remain significant. On the other hand, increased export orientation has a positive impact in the first period only for exports to the OECD 'Northern' countries in the high-skill intensive and to the Southern European countries in the low-skill intensive industries. In the second period there were positive effects for exports to OECD 'Northern' countries and Japan. With respect to the impact on the growth of labour costs by employee we found no significant impact of the trade variables in the high-skill intensive industries. In the low-skill intensive industries the estimated coefficients are positive and significant for exports to the OECD 'Northern' countries and to the developing countries in the first period and not significant at all in the second period.

These results lead to the conclusion that trade integration with emerging countries in the period 1982-1988 had a negative effect on employment. But this was seemingly larger in the high-skill intensive industries than in the low-skill intensive industries in contradiction to a simple Heckscher-Ohlin framework. On the other hand there are also positive effects from increased exports in both types of sectors which do not vanish in the second period. With respect to labour costs there are positive effects of export growth in the low-skill intensive industries.

A Tables

Description	ISIC	Note
Food, beverages and tobacco	3100	
Textiles, apparel and leather	3200	
Wood products and furniture	3300	
Paper, products and printing	3400	
Chemicals excl. drugs	3512x	3510+3520-3522
Drugs and medicines	3522	
Petroleum refineries and products	3534a	3530+3540
Rubber and plastic products	3556a	3550+3560
Non-metallic mineral products	3600	
Iron and steel	3710	
Non-ferrous metals	3720	
Metal products	3810	
Office and computing equipment	3825	
Machinery and equipment nec (3820 less 3825)	382x	3820-3825
Radio, TV and communication equipment	3832	
Machinery and equipment nec (3830 less 3832)	383x	3830-3832
Shipbuilding and repairing	3841	
Other transport equipment nec	3842a	3842+3844+3849
Motor vehicles	3843	
Aircraft	3845	
Discrepancy (scrap metals)	384d	3840-(3841+3842+3843+3844+ +3845+3849)
Professional goods	3850	
Other manufacturing	3900	
Total manufacturing	**3000**	

Table A.1: Industries available in STAN and Bilateral Trade Database (BTD)

Description	ISIC	Skill intensity	Rank
Textiles, apparel and leather	3200	0.058	1
Wood products and furniture	3300	0.084	2
Food, beverages and tobacco	3100	0.093	3
Non-metallic mineral products	3600	0.104	4
Rubber and plastic products	3556a	0.106	5
Iron and steel	3710	0.110	6
Other transport equipment nec	3842a	0.120	7
Other manufacturing	3900	0.124	8
Metal products	3810	0.132	9
Non-ferrous metals	3720	0.133	10
Motor vehicles	3843	0.171	11
Paper, products and printing	3400	0.183	12
Machinery and equipment nec (3820 less 3825)	382x	0.188	13
Petroleum refineries and products	3534a	0.244	14
Chemicals excl. drugs	3512x	0.282	15
Radio, TV and communication equipment	3832	0.302	16
Professional goods	3850	0.302	17
Machinery and equipment nec (3830 less 3832)	383x	0.303	18
Shipbuilding and repairing	3841	0.352	19
Aircraft	3845	0.401	20
Drugs and medicines	3522	0.410	21
Office and computing equipment	3825	0.552	22

Table A.2: Industries ranked by skill intensity

Country	Name	Group
AUS	Australia	A
AUT	Austria	A
BLX	Belgium/Luxembourg	A
CAN	Canada	A
CHE	Switzerland	A
DNK	Denmark	A
FIN	Finland	A
FRA	France	A
GER	Germany	A
IRL	Ireland	A
ITA	Italy	A
NL	Netherlands	A
NOR	Norway	A
NZL	New Zealand	A
SWE	Sweden	A
UK	United Kingdom	A
US	United States	A
ESP	Spain	B
GRC	Greece	B
ISL	Iceland	B
PRT	Portugal	B
TUR	Turkey	B
JPN	Japan	C
HKG	Hong Kong (China)	D
IRL	Ireland	D
KOR	Korea	D
SGP	Singapore	D
TWN	Chinese Taipai	D
ARG	Argentina	E
BRA	Brazil	E
CHN	China	E
IDN	Indonesia	E
IND	India	E
MEX	Mexico	E
MYS	Malaysia	E
PHL	Philippines	E
ROW	Rest of World	E
THA	Thailand	E
CSK	Former Czechoslovakia	F
CZE	Czech Republic	F
HUN	Hungary	F
POL	Poland	F

Table A.3: Country groupings

Nr.	France		Germany		Japan		Netherlands		Sweden		UK		US	
							Imports from North							
1	*3850*	0.5722	*3845*	0.5695	*3845*	0.8284	*383x*	4.0699	*3850*	1.0383	*3825*	0.6940	*3843*	0.1421
2	*3825*	0.4239	*3900*	0.5201	*3850*	0.0921	*3825*	1.6618	*3825*	0.8140	*3850*	0.5424	*3720*	0.0897
3	*3512x*	0.3305	*3825*	0.3822	*3522*	0.0711	*3843*	1.5811	*3200*	0.7314	*3720*	0.4256	*3900*	0.0692
4	*3900*	0.2827	*3850*	0.3145	*3512x*	0.0652	*3850*	1.5631	*3512x*	0.5618	*3900*	0.2584	*3842a*	0.0600
5	*382x*	0.2478	*3200*	0.2651	*3825*	0.0575	*3200*	1.1066	*383x*	0.4935	*3843*	0.2566	*382x*	0.0554
6	*3720*	0.2478	*3720*	0.2115	*3300*	0.0527	*3900*	1.0763	*3534a*	0.4930	*3512x*	0.1919	*3512x*	0.0474
7	*383x*	0.1849	*3512x*	0.2078	*3720*	0.0513	*3845*	0.8644	*3900*	0.4913	*382x*	0.1630	*3845*	0.0473
8	*3843*	0.1838	*3842a*	0.1876	*3100*	0.0441	*3842a*	0.7897	*3522*	0.4601	*3710*	0.1566	*3300*	0.0460
							Imports from South							
1	*3720*	0.0979	*3200*	0.2027	*3534a*	0.1415	*3200*	0.3461	*3200*	0.3628	*3720*	0.1576	*3832*	0.1247
2	*3200*	0.0879	*3900*	0.1771	*3720*	0.0814	*3900*	0.2249	*3534a*	0.2109	*3200*	0.1557	*3900*	0.1138
3	*3900*	0.0730	*3720*	0.0848	*3200*	0.0567	*3534a*	0.2074	*3900*	0.0989	*3900*	0.1448	*3200*	0.0770
4	*3534a*	0.0620	*3850*	0.0516	*3100*	0.0334	*3720*	0.1844	*3720*	0.0830	*3850*	0.1038	*3720*	0.0717
5	*3512x*	0.0583	*3534a*	0.0460	*3300*	0.0237	*383x*	0.1662	*3850*	0.0504	*3825*	0.0832	*3534a*	0.0596
6	*3300*	0.0583	*3832*	0.0382	*3900*	0.0226	*3300*	0.1605	*3556a*	0.0434	*3300*	0.0822	*3556a*	0.0308
7	*3850*	0.0532	*3300*	0.0373	*3841*	0.0166	*3850*	0.1013	*3832*	0.0351	*3100*	0.0610	*383x*	0.0282
8	*3100*	0.0394	*3100*	0.0322	*3522*	0.0158	*3825*	0.0764	*3512x*	0.0285	*3832*	0.0465	*3100*	0.0243

Table A.4: Top 8 industries in terms of imports/production from North and South (Mean levels, period 1980-96)

Table A.5: Top 8 industries in terms of exports/production to North and South (Mean levels, period 1980-96)

Nr.	France		Germany		Japan		Netherlands		Sweden		UK		US	
						Exports to North								
1	*3850*	0.3259	*3850*	0.4692	*3842a*	0.7197	*383x*	1.7696	*3825*	0.6945	*3900*	1.1283	*3825*	0.1840
2	*3825*	0.2750	*3845*	0.4583	*3850*	0.2806	*3850*	1.4533	*3850*	0.5799	*3825*	0.5399	*3845*	0.1043
3	*3512x*	0.2729	*3900*	0.3795	*3843*	0.1717	*3825*	1.0599	*3843*	0.4577	*3850*	0.5019	*3843*	0.0996
4	*3843*	0.2718	*3825*	0.3574	*3832*	0.1641	*3720*	0.8406	*3522*	0.4134	*3720*	0.3660	*382x*	0.0783
5	*3720*	0.1965	*3843*	0.2868	*3825*	0.1049	*3900*	0.8288	*3710*	0.3671	*3845*	0.2183	*3900*	0.0738
6	*3900*	0.1770	*3512x*	0.2775	*3841*	0.0858	*3843*	0.7136	*3720*	0.3643	*3843*	0.1887	*3832*	0.0695
7	*3710*	0.1766	*3842a*	0.2639	*3845*	0.0576	*3200*	0.6781	*382x*	0.3529	*3512x*	0.1872	*3512x*	0.0689
8	*3200*	0.1725	*382x*	0.2595	*382x*	0.0527	*3845*	0.6551	*3200*	0.3370	*382x*	0.1673	*3720*	0.0666
						Exports to South								
1	*3850*	0.2498	*3841*	0.1649	*3842a*	0.3479	*383x*	0.4510	*3832*	0.2300	*3850*	0.2828	*3845*	0.0994
2	*3841*	0.2037	*382x*	0.1496	*3841*	0.3373	*3841*	0.2244	*3841*	0.2240	*3900*	0.2469	*382x*	0.0967
3	*382x*	0.1557	*3850*	0.1468	*3850*	0.1632	*3845*	0.2133	*3850*	0.1754	*382x*	0.1761	*3512x*	0.0869
4	*383x*	0.1447	*3512x*	0.1148	*3832*	0.1192	*3850*	0.2072	*382x*	0.1600	*3825*	0.1537	*3832*	0.0716
5	*3843*	0.1328	*3522*	0.0995	*382x*	0.1058	*3710*	0.1570	*383x*	0.1389	*3522*	0.1509	*383x*	0.0635
6	*3522*	0.1240	*3710*	0.0922	*383x*	0.0980	*382x*	0.1551	*3843*	0.1321	*3843*	0.1481	*3841*	0.0585
7	*3512x*	0.1149	*3842a*	0.0909	*3843*	0.0976	*3512x*	0.1392	*3825*	0.1090	*383x*	0.1383	*3825*	0.0569
8	*3842a*	0.1072	*3843*	0.0837	*3512x*	0.0961	*3832*	0.1388	*3400*	0.0793	*3842a*	0.1283	*3843*	0.0533

Table A.6: Top 8 industries in terms of growth rates of imports/production from North and South (Mean levels, period 1980-96)

Nr.	France		Germany		Japan		Netherlands		Sweden		UK		US	
						Imports from North								
1	*3842a*	0.1071	*3843*	0.0390	*3843*	0.1264	*3825*	0.0578	*3845*	0.0846	*3842a*	0.0626	*3841*	0.0949
2	*3845*	0.0461	*3832*	0.0293	*3842a*	0.0674	*3522*	0.0320	*3825*	0.0731	*3832*	0.0321	*3825*	0.0846
3	*3522*	0.0448	*3522*	0.0292	*3600*	0.0604	*3710*	0.0268	*3400*	0.0361	*3810*	0.0302	*3842a*	0.0728
4	*3100*	0.0268	*3850*	0.0248	*3850*	0.0535	*3512x*	0.0256	*383x*	0.0341	*3710*	0.0269	*3850*	0.0691
5	*3710*	0.0254	*3842a*	0.0242	*3832*	0.0528	*3850*	0.0148	*3300*	0.0289	*3522*	0.0255	*3534a*	0.0556
6	*3841*	0.0221	*382x*	0.0238	*3710*	0.0494	*3845*	0.0135	*3100*	0.0272	*3600*	0.0228	*383x*	0.0541
7	*3832*	0.0206	*3710*	0.0217	*3200*	0.0464	*3100*	0.0097	*3600*	0.0270	*3200*	0.0192	*3845*	0.0513
8	*382x*	0.0202	*3825*	0.0198	*3300*	0.0408	*3842a*	0.0096	*3832*	0.0249	*3512x*	0.0175	*3200*	0.0508
						Imports from South								
1	*3842a*	0.1989	*3842a*	0.1762	*3842a*	0.2262	*3825*	0.1567	*3845*	0.4080	*3842a*	0.1161	*3825*	0.2330
2	*3825*	0.1111	*3825*	0.1576	*3825*	0.1646	*3710*	0.1214	*3841*	0.2562	*383x*	0.0739	*3843*	0.1478
3	*3200*	0.0859	*3843*	0.1088	*3843*	0.1553	*3842a*	0.1044	*3825*	0.2177	*3710*	0.0675	*3850*	0.1325
4	*383x*	0.0832	*383x*	0.1042	*3810*	0.1471	*3845*	0.0915	*3842a*	0.1457	*3600*	0.0618	*383x*	0.1122
5	*3522*	0.0753	*382x*	0.0793	*3556a*	0.1325	*3512x*	0.0798	*383x*	0.1286	*3512x*	0.0612	*3842a*	0.1026
6	*3832*	0.0749	*3832*	0.0754	*382x*	0.1297	*3850*	0.0784	*3200*	0.0753	*3832*	0.0559	*382x*	0.0982
7	*3845*	0.0689	*3850*	0.0744	*3850*	0.1253	*3900*	0.0759	*3810*	0.0749	*3810*	0.0527	*3600*	0.0919
8	*382x*	0.0672	*3810*	0.0740	*3832*	0.1214	*382x*	0.0723	*382x*	0.0744	*3200*	0.0517	*3200*	0.0915

Nr.	France		Germany		Japan		Netherlands		Sweden		UK		US	
							Exports to North							
1	*3845*	0.0620	*3841*	0.0261	*3534a*	0.0974	*3825*	0.0893	*3845*	0.1707	*3710*	0.0588	*3842a*	0.1125
2	*3842a*	0.0523	*3522*	0.0247	*3845*	0.0444	*3710*	0.0344	*383x*	0.0607	*3842a*	0.0492	*3710*	0.0674
3	*3832*	0.0431	*3200*	0.0199	*3522*	0.0434	*3850*	0.0262	*3556a*	0.0466	*3832*	0.0448	*3841*	0.0635
4	*3300*	0.0385	*383x*	0.0168	*3825*	0.0401	*3200*	0.0231	*3100*	0.0361	*3100*	0.0411	*3810*	0.0517
5	*3100*	0.0339	*3850*	0.0157	*3512x*	0.0296	*3522*	0.0230	*3842a*	0.0339	*3200*	0.0350	*3556a*	0.0467
6	*382x*	0.0327	*3845*	0.0143	*382x*	0.0207	*3300*	0.0221	*3512x*	0.0272	*3400*	0.0331	*383x*	0.0463
7	*383x*	0.0315	*3100*	0.0114	*3850*	0.0052	*3845*	0.0214	*3200*	0.0222	*3810*	0.0308	*3534a*	0.0424
8	*3710*	0.0264	*3400*	0.0096	*383x*	-0.0022	*3100*	0.0176	*3832*	0.0220	*3300*	0.0293	*3600*	0.0423
							Exports to South							
1	*3200*	0.0749	*3845*	0.0731	3534a	0.1260	*3825*	0.0890	*3845*	0.2255	*3100*	0.0384	*3534a*	0.0936
2	*3845*	0.0614	*3200*	0.0610	3845	0.0587	*3842a*	0.0632	*3200*	0.0870	*3720*	0.0308	*3720*	0.0671
3	*3825*	0.0229	*3841*	0.0352	3825	0.0423	*3845*	0.0521	*3556a*	0.0574	*3710*	0.0299	*3825*	0.0665
4	*3720*	0.0216	*3400*	0.0348	3720	0.0394	*3850*	0.0493	*3842a*	0.0563	*3200*	0.0294	*3900*	0.0607
5	*3512x*	0.0164	*3850*	0.0318	3850	0.0284	*3400*	0.0433	*3534a*	0.0559	*3900*	0.0216	*383x*	0.0554
6	*3100*	0.0121	*3832*	0.0316	3512x	0.0241	*3556a*	0.0394	*3522*	0.0338	*3832*	0.0177	*3200*	0.0545
7	*3400*	0.0107	*3556a*	0.0299	3522	0.0221	*3200*	0.0344	*3720*	0.0329	*3400*	0.0164	*3845*	0.0542
8	*3900*	0.0105	*3900*	0.0280	382x	0.0115	*3843*	0.0310	*383x*	0.0313	*3600*	0.0022	*3850*	0.0520

Table A.7: Top 8 industries in terms of growth rates of exports/production to North and South (Mean levels, period 1980-96)

Country	Rank	Group A		Group B		Group C		Group D		Group E		Group F	
						Period 1980-1988							
FRA	1	3850	0.651	3843	0.050	3850	0.127	3900	0.045	3720	0.084	3841	0.004
FRA	2	3825	0.453	3200	0.036	3842a	0.080	3850	0.043	3200	0.072	3200	0.004
FRA	3	3512x	0.367	3300	0.020	3825	0.054	3825	0.036	3534a	0.071	3300	0.003
FRA	4	382x	0.288	3600	0.015	3832	0.053	3832	0.027	3900	0.035	383x	0.003
FRA	5	3720	0.233	383x	0.014	3900	0.026	3200	0.020	3300	0.035	3720	0.002
FRA	6	3843	0.229	3720	0.014	3841	0.017	3556a	0.011	3512x	0.035	3512x	0.002
FRA	7	383x	0.219	3825	0.014	382x	0.016	383x	0.010	3100	0.030	3710	0.002
FRA	8	3900	0.205	3710	0.013	383x	0.013	3512x	0.008	3850	0.016	3900	0.002
GER	1	3845	0.920	3200	0.070	3842a	0.127	3900	0.078	3200	0.129	3200	0.017
GER	2	3825	0.401	3825	0.010	3850	0.108	3200	0.068	3900	0.080	3720	0.012
GER	3	3850	0.389	3710	0.009	3825	0.069	3825	0.061	3720	0.076	3300	0.008
GER	4	3900	0.330	3900	0.008	3832	0.069	3850	0.032	3534a	0.042	3900	0.006
GER	5	3200	0.286	3720	0.007	3900	0.050	3832	0.028	3300	0.029	3710	0.006
GER	6	3512x	0.233	383x	0.007	3843	0.021	3556a	0.010	3100	0.025	3534a	0.005
GER	7	3720	0.213	3100	0.007	383x	0.011	3842a	0.009	3845	0.018	3100	0.004
GER	8	3400	0.194	3843	0.006	3512x	0.011	383x	0.008	3850	0.015	3841	0.004
JPN	1	3845	0.720	3720	0.002			3200	0.035	3534a	0.128	3720	0.001
JPN	2	3850	0.097	3522	0.001			3534a	0.031	3720	0.084	3522	0.000
JPN	3	3512x	0.078	3100	0.001			3850	0.013	3200	0.034	3100	0.000
JPN	4	3522	0.070	3841	0.001			3300	0.012	3300	0.021	3512x	0.000
JPN	5	3720	0.065	3200	0.001			3100	0.011	3100	0.018	3600	0.000
JPN	6	3300	0.046	3512x	0.001			3900	0.010	3900	0.013	3200	0.000
JPN	7	3100	0.042	3534a	0.001			3512x	0.009	3512x	0.012	3300	0.000
JPN	8	3825	0.041	3710	0.000			3842a	0.006	3841	0.007	3710	0.000
NL	1	383x	4.936	383x	0.098	3825	0.248	3825	0.397	3534a	0.205	383x	0.032
NL	2	3825	3.396	3200	0.096	3843	0.215	383x	0.177	3200	0.185	3200	0.029
NL	3	3850	1.786	3825	0.048	3850	0.194	3900	0.172	3300	0.139	3900	0.014
NL	4	3843	1.618	3843	0.038	383x	0.162	3200	0.148	3720	0.138	3300	0.013
NL	5	3200	1.192	3720	0.029	3842a	0.160	3850	0.073	3900	0.090	3842a	0.008
NL	6	3900	1.017	3900	0.019	3900	0.087	3832	0.038	383x	0.068	3710	0.006
NL	7	3845	0.896	3300	0.019	3832	0.052	3842a	0.034	3100	0.047	3600	0.006
NL	8	3842a	0.841	3534a	0.015	3841	0.031	3556a	0.033	3825	0.035	3841	0.004
SWE	1	3825	1.001	3200	0.165	3850	0.161	3200	0.189	3200	0.168	3200	0.019
SWE	2	3850	0.967	3825	0.013	3825	0.143	3900	0.077	3534a	0.112	3720	0.012
SWE	3	3200	0.834	3534a	0.012	3832	0.117	3825	0.053	3720	0.068	3900	0.010
SWE	4	3512x	0.598	3900	0.010	3842a	0.072	3832	0.044	3841	0.034	3841	0.008
SWE	5	383x	0.518	3600	0.010	3900	0.059	3850	0.041	3900	0.033	3512x	0.007
SWE	6	3720	0.433	3556a	0.009	3843	0.046	3841	0.032	3512x	0.029	3300	0.007
SWE	7	3522	0.423	3100	0.008	3841	0.034	3556a	0.032	3100	0.019	3600	0.006
SWE	8	3556a	0.420	383x	0.007	383x	0.027	383x	0.013	3556a	0.013	3534a	0.006
UK	1	3825	0.748	3200	0.042	3850	0.116	3825	0.150	3720	0.097	3300	0.009
UK	2	3850	0.725	3843	0.026	3842a	0.091	3900	0.123	3200	0.072	3200	0.005
UK	3	3720	0.403	3300	0.017	3825	0.091	3200	0.093	3900	0.071	3900	0.003
UK	4	3843	0.379	3720	0.016	3832	0.089	3850	0.070	3300	0.064	3710	0.002
UK	5	3900	0.296	3825	0.014	3843	0.059	3832	0.048	3534a	0.056	3600	0.002
UK	6	3512x	0.265	3534a	0.011	3900	0.048	3556a	0.027	3850	0.055	3720	0.002
UK	7	382x	0.234	3900	0.009	383x	0.029	383x	0.022	3845	0.038	3842a	0.002
UK	8	3200	0.210	3710	0.008	382x	0.018	3842a	0.019	3100	0.036	3843	0.002
US	1	3843	0.164	3200	0.006	3842a	0.235	3200	0.097	3900	0.099	3200	0.001
US	2	3720	0.102	3710	0.005	3832	0.134	3832	0.085	3200	0.069	3100	0.001
US	3	3900	0.096	3600	0.004	3843	0.127	3900	0.084	3534a	0.068	3710	0.001
US	4	3842a	0.083	3534a	0.003	3825	0.090	3842a	0.081	3832	0.063	3600	0.000
US	5	382x	0.078	3100	0.002	383x	0.042	3825	0.064	3720	0.063	3522	0.000
US	6	3710	0.061	3900	0.002	3710	0.041	3556a	0.042	383x	0.037	3842a	0.000
US	7	3845	0.055	3556a	0.002	3900	0.037	383x	0.035	3710	0.020	383x	0.000
US	8	3512x	0.055	3720	0.001	382x	0.036	3300	0.015	3100	0.018	3720	0.000

Country	Rank	Group A		Group B		Group C		Group D		Group E		Group F	
						Period 1989-1996							
FRA	1	3850	0.713	3843	0.081	3842a	0.133	3825	0.108	3200	0.177	3200	0.008
FRA	2	3512x	0.431	3200	0.066	3850	0.130	3850	0.047	3720	0.099	3841	0.007
FRA	3	3825	0.427	383x	0.028	3825	0.099	3900	0.046	3900	0.081	3720	0.006
FRA	4	382x	0.334	3600	0.024	3832	0.054	3832	0.042	3534a	0.048	383x	0.004
FRA	5	3845	0.303	3300	0.024	3900	0.042	3842a	0.033	3850	0.040	3300	0.003
FRA	6	3720	0.268	3556a	0.019	382x	0.022	3200	0.023	3300	0.037	3512x	0.003
FRA	7	3842a	0.258	3710	0.018	383x	0.021	383x	0.018	3832	0.037	3710	0.002
FRA	8	3710	0.252	3720	0.017	3512x	0.016	3512x	0.015	3512x	0.031	3842a	0.002
GER	1	3845	0.863	3200	0.130	3842a	0.155	3825	0.195	3200	0.274	3200	0.056
GER	2	3850	0.479	3843	0.021	3825	0.143	3900	0.083	3900	0.216	3300	0.029
GER	3	3825	0.472	3825	0.015	3850	0.128	3200	0.061	3720	0.074	3842a	0.019
GER	4	3200	0.332	383x	0.014	3900	0.072	3842a	0.054	3825	0.050	3900	0.018
GER	5	3900	0.326	3850	0.013	3832	0.066	3850	0.050	3850	0.048	3720	0.015
GER	6	3512x	0.261	3900	0.011	3843	0.028	3832	0.044	3300	0.038	3710	0.014
GER	7	3842a	0.230	3600	0.011	383x	0.018	383x	0.019	3832	0.035	3600	0.012
GER	8	3522	0.211	3720	0.010	3512x	0.016	3841	0.013	3842a	0.028	383x	0.012
JPN	1	3845	0.570	3200	0.002			3200	0.040	3534a	0.127	3720	0.001
JPN	2	3850	0.162	3100	0.001			3534a	0.030	3200	0.110	3522	0.001
JPN	3	3512x	0.085	3720	0.001			3825	0.029	3720	0.085	3100	0.000
JPN	4	3522	0.072	3600	0.001			3850	0.026	3300	0.062	3600	0.000
JPN	5	3300	0.069	3300	0.001			3842a	0.024	3100	0.026	3512x	0.000
JPN	6	3720	0.067	3512x	0.001			3832	0.015	3850	0.022	3200	0.000
JPN	7	3200	0.056	3522	0.001			3512x	0.015	3900	0.021	3710	0.000
JPN	8	3825	0.054	3900	0.000			3100	0.013	3825	0.018	3300	0.000
NL	1	3825	5.217	3200	0.146	3825	0.742	3825	1.385	3200	0.395	383x	0.079
NL	2	383x	4.104	383x	0.110	3843	0.232	3900	0.247	3825	0.255	3200	0.053
NL	3	3850	1.985	3825	0.104	383x	0.225	383x	0.242	3900	0.245	3300	0.020
NL	4	3843	1.648	3843	0.086	3850	0.217	3200	0.161	3720	0.239	3900	0.019
NL	5	3710	1.064	3720	0.039	3842a	0.202	3850	0.141	3300	0.151	3710	0.014
NL	6	3200	1.053	3710	0.028	3900	0.171	3842a	0.139	383x	0.125	3842a	0.013
NL	7	3842a	1.013	3900	0.019	3832	0.067	3832	0.057	3534a	0.085	3720	0.010
NL	8	3845	1.010	3600	0.018	382x	0.043	3556a	0.041	3850	0.069	3841	0.009
SWE	1	3825	2.187	3200	0.284	3825	0.204	3825	0.384	3200	0.472	3200	0.050
SWE	2	3200	0.975	383x	0.036	3850	0.082	3200	0.244	3841	0.099	3720	0.015
SWE	3	383x	0.707	3600	0.019	3832	0.077	3900	0.082	3900	0.093	383x	0.013
SWE	4	3512x	0.690	3845	0.017	383x	0.069	3841	0.055	3720	0.064	3900	0.011
SWE	5	3850	0.658	3556a	0.016	3900	0.055	3832	0.049	3534a	0.047	3300	0.010
SWE	6	3845	0.615	3900	0.013	3841	0.037	3842a	0.038	3556a	0.040	3600	0.009
SWE	7	3556a	0.496	3825	0.012	3842a	0.036	3556a	0.035	3512x	0.033	3512x	0.008
SWE	8	3720	0.465	3100	0.010	3843	0.033	3850	0.031	3825	0.031	3556a	0.008
UK	1	3850	0.741	3200	0.069	3825	0.111	3825	0.203	3200	0.205	3720	0.020
UK	2	3825	0.588	3843	0.040	3850	0.102	3900	0.107	3900	0.196	3200	0.007
UK	3	3720	0.432	3720	0.019	3832	0.096	3200	0.085	3720	0.133	3300	0.004
UK	4	3843	0.416	3710	0.015	3842a	0.092	3850	0.076	3850	0.087	383x	0.004
UK	5	3900	0.353	3600	0.014	3900	0.068	3832	0.067	3300	0.073	3710	0.004
UK	6	3512x	0.305	3300	0.012	3843	0.063	3842a	0.050	3832	0.070	3900	0.003
UK	7	3842a	0.273	3850	0.011	383x	0.039	383x	0.032	3556a	0.041	3600	0.002
UK	8	3832	0.272	383x	0.011	382x	0.029	3512x	0.028	3100	0.034	3556a	0.002
US	1	3843	0.182	3200	0.009	3825	0.194	3825	0.245	3900	0.234	3200	0.001
US	2	3842a	0.117	3600	0.006	3843	0.125	3832	0.091	3200	0.212	3600	0.001
US	3	3720	0.109	3710	0.005	3842a	0.124	3200	0.091	3832	0.127	383x	0.001
US	4	3900	0.107	3534a	0.003	3832	0.120	3842a	0.088	383x	0.111	3842a	0.001
US	5	382x	0.096	3900	0.002	3900	0.065	3900	0.079	3825	0.091	382x	0.001
US	6	3825	0.090	3100	0.002	383x	0.064	383x	0.037	3720	0.062	3710	0.001
US	7	3845	0.087	3720	0.002	3850	0.051	3556a	0.022	3556a	0.060	3900	0.001
US	8	3512x	0.080	382x	0.001	382x	0.050	3810	0.018	3534a	0.059	3720	0.001

Table A.8: Import penetration by country group

Country	Rank	Group A		Group B		Group C		Group D		Group E		Group F	
						Period 1980-1988							
FRA	1	3850	0.404	3843	0.050	3900	0.014	3850	0.025	3850	0.217	3512x	0.006
FRA	2	3512x	0.335	3850	0.035	3512x	0.013	3845	0.019	3841	0.172	382x	0.004
FRA	3	3825	0.298	3512x	0.029	3850	0.011	3512x	0.011	3842a	0.141	3850	0.003
FRA	4	3843	0.274	3825	0.028	3200	0.009	3200	0.008	382x	0.124	3522	0.002
FRA	5	3710	0.207	3710	0.025	3845	0.008	3900	0.008	383x	0.119	383x	0.002
FRA	6	383x	0.188	383x	0.021	3522	0.008	383x	0.007	3522	0.109	3200	0.002
FRA	7	3720	0.187	382x	0.021	3720	0.004	382x	0.007	3843	0.090	3600	0.002
FRA	8	3200	0.187	3845	0.013	3100	0.003	3832	0.005	3845	0.087	3710	0.002
GER	1	3845	0.790	3850	0.041	3850	0.029	3850	0.025	3841	0.151	3850	0.015
GER	2	3850	0.639	3825	0.029	3522	0.025	3841	0.023	3850	0.135	382x	0.012
GER	3	3900	0.419	3900	0.024	3900	0.015	3825	0.019	382x	0.114	3512x	0.012
GER	4	3825	0.396	382x	0.024	3512x	0.011	3900	0.017	3842a	0.093	3200	0.009
GER	5	3843	0.332	3512x	0.023	3843	0.010	382x	0.014	3512x	0.079	3900	0.007
GER	6	3512x	0.311	3200	0.021	382x	0.008	3512x	0.013	3710	0.078	3522	0.006
GER	7	382x	0.297	3842a	0.020	3842a	0.005	3832	0.010	3522	0.070	3710	0.004
GER	8	3842a	0.293	3843	0.019	3825	0.004	3522	0.009	3843	0.063	3825	0.004
JPN	1	3842a	0.630	3841	0.024			3850	0.085	3841	0.340	3512x	0.001
JPN	2	3850	0.332	3842a	0.011			3842a	0.050	3842a	0.232	3850	0.000
JPN	3	3843	0.209	3850	0.007			3512x	0.043	3850	0.074	3832	0.000
JPN	4	3825	0.181	3832	0.004			3841	0.041	382x	0.068	382x	0.000
JPN	5	3832	0.162	3843	0.003			3832	0.040	3843	0.064	383x	0.000
JPN	6	3841	0.104	382x	0.003			382x	0.035	3710	0.057	3810	0.000
JPN	7	382x	0.076	3825	0.003			383x	0.035	3512x	0.052	3710	0.000
JPN	8	3845	0.069	3512x	0.002			3200	0.025	383x	0.051	3522	0.000
NL	1	383x	2.699	383x	0.120	383x	0.025	383x	0.101	383x	0.382	3200	0.015
NL	2	3825	2.570	3825	0.116	3900	0.017	3825	0.066	3850	0.184	3850	0.010
NL	3	3850	1.772	3850	0.073	3522	0.014	3841	0.037	3841	0.134	383x	0.010
NL	4	3900	1.193	3710	0.060	3850	0.012	3850	0.029	3845	0.130	3522	0.007
NL	5	3720	0.853	3843	0.036	3512x	0.010	3900	0.022	382x	0.127	3512x	0.006
NL	6	3200	0.817	3900	0.034	382x	0.007	3845	0.019	3825	0.110	382x	0.006
NL	7	3843	0.778	3512x	0.031	3825	0.004	382x	0.019	3710	0.101	3900	0.005
NL	8	3534a	0.716	3720	0.025	3100	0.004	3512x	0.017	3522	0.095	3843	0.004
SWE	1	3825	0.809	3825	0.047	3850	0.043	3900	0.044	3841	0.199	3850	0.011
SWE	2	3850	0.661	3850	0.028	3522	0.027	3841	0.041	3832	0.182	382x	0.010
SWE	3	3843	0.539	3832	0.022	3512x	0.012	3832	0.030	383x	0.123	3512x	0.007
SWE	4	3522	0.473	382x	0.021	382x	0.011	3850	0.023	3850	0.121	3710	0.006
SWE	5	3710	0.411	3843	0.019	3825	0.010	382x	0.017	382x	0.105	383x	0.006
SWE	6	3200	0.408	3522	0.018	3841	0.010	3825	0.014	3843	0.080	3841	0.005
SWE	7	3720	0.385	3841	0.018	3710	0.006	3400	0.010	3825	0.051	3522	0.004
SWE	8	3841	0.381	3200	0.016	3832	0.005	383x	0.010	3400	0.049	3200	0.004
UK	1	3900	0.748	3850	0.039	3850	0.025	3850	0.061	3900	0.264	3850	0.009
UK	2	3850	0.623	3825	0.037	3720	0.014	3842a	0.059	3850	0.233	3512x	0.004
UK	3	3825	0.610	3843	0.023	3522	0.014	3900	0.049	382x	0.126	3841	0.004
UK	4	3720	0.286	3512x	0.017	3900	0.011	3825	0.043	3522	0.094	3825	0.003
UK	5	3845	0.230	382x	0.015	3200	0.010	3200	0.038	383x	0.089	382x	0.003
UK	6	3512x	0.226	3900	0.014	3512x	0.007	3522	0.029	3845	0.079	3522	0.002
UK	7	3843	0.191	3841	0.014	3825	0.006	383x	0.029	3825	0.075	3200	0.002
UK	8	382x	0.190	3522	0.011	382x	0.005	3534a	0.027	3843	0.071	3720	0.002
US	1	3825	0.185	3845	0.006	3825	0.027	3825	0.035	382x	0.064	3100	0.000
US	2	3843	0.091	3841	0.005	3845	0.020	3832	0.027	3842a	0.063	3522	0.000
US	3	3845	0.090	3825	0.005	3522	0.018	3845	0.017	3832	0.060	382x	0.000
US	4	382x	0.073	3522	0.004	3512x	0.016	3512x	0.016	3512x	0.049	3512x	0.000
US	5	3512x	0.061	382x	0.003	3720	0.014	382x	0.012	3845	0.049	3850	0.000
US	6	3832	0.059	3512x	0.003	3832	0.013	383x	0.011	383x	0.047	3845	0.000
US	7	3850	0.053	3832	0.002	3900	0.011	3900	0.010	3825	0.040	3200	0.000
US	8	383x	0.052	3850	0.002	3850	0.011	3200	0.008	3841	0.034	3825	0.000

Country	Rank	Group A		Group B		Group C		Group D		Group E		Group F	
		Period 1989-1996											
FRA	1	3850	0.476	3843	0.076	3900	0.029	3845	0.041	3845	0.178	3512x	0.006
FRA	2	3512x	0.395	3850	0.052	3200	0.020	3850	0.038	3841	0.168	3850	0.006
FRA	3	3825	0.326	3512x	0.048	3845	0.019	3512x	0.022	3850	0.160	382x	0.005
FRA	4	3845	0.297	383x	0.047	3850	0.018	3200	0.019	383x	0.103	3200	0.005
FRA	5	3843	0.296	3825	0.044	3512x	0.017	3832	0.018	3522	0.098	3522	0.004
FRA	6	3710	0.264	3842a	0.037	3720	0.007	383x	0.017	382x	0.097	383x	0.004
FRA	7	383x	0.246	3710	0.036	3100	0.006	382x	0.014	3512x	0.076	3825	0.004
FRA	8	3842a	0.242	3200	0.036	3522	0.005	3900	0.013	3832	0.065	3843	0.003
GER	1	3845	0.831	3850	0.067	3850	0.054	3850	0.051	3841	0.276	3200	0.042
GER	2	3850	0.674	3900	0.037	3522	0.028	3900	0.030	3850	0.141	3850	0.034
GER	3	3825	0.400	3200	0.036	3900	0.023	382x	0.028	3842a	0.134	3900	0.025
GER	4	3900	0.395	3825	0.034	3843	0.021	3841	0.023	382x	0.110	3825	0.020
GER	5	3512x	0.314	382x	0.032	3512x	0.012	3512x	0.019	3200	0.070	382x	0.020
GER	6	382x	0.293	3512x	0.030	382x	0.011	3832	0.018	3845	0.068	3842a	0.018
GER	7	3200	0.282	3843	0.030	3825	0.008	3825	0.014	3900	0.065	3512x	0.015
GER	8	3843	0.271	3522	0.027	3200	0.006	383x	0.012	3832	0.063	3522	0.014
JPN	1	3842a	0.349	3842a	0.026			3850	0.142	3841	0.304	3843	0.001
JPN	2	3850	0.333	3841	0.008			3842a	0.112	3842a	0.142	3832	0.001
JPN	3	3825	0.224	3850	0.007			3512x	0.071	3850	0.075	3842a	0.001
JPN	4	3843	0.161	3843	0.005			3832	0.063	382x	0.065	3850	0.001
JPN	5	3845	0.113	382x	0.004			382x	0.053	3843	0.054	3512x	0.000
JPN	6	3832	0.110	3832	0.002			3825	0.042	3512x	0.050	382x	0.000
JPN	7	3512x	0.080	3825	0.002			383x	0.040	3832	0.042	3825	0.000
JPN	8	382x	0.078	3512x	0.002			3841	0.037	383x	0.033	383x	0.000
NL	1	3825	5.534	3825	0.391	3850	0.026	3825	0.137	383x	0.292	383x	0.039
NL	2	3850	2.147	3850	0.165	383x	0.026	383x	0.102	3845	0.215	3825	0.033
NL	3	383x	2.024	383x	0.148	3825	0.023	3850	0.091	3850	0.186	3200	0.033
NL	4	3200	0.982	3843	0.064	3900	0.019	3845	0.081	3825	0.149	3900	0.029
NL	5	3710	0.905	3900	0.061	3522	0.015	382x	0.033	382x	0.117	3850	0.026
NL	6	3900	0.890	3710	0.051	3512x	0.015	3512x	0.025	3841	0.107	3843	0.025
NL	7	3843	0.879	3842a	0.048	382x	0.010	3710	0.020	3843	0.095	382x	0.012
NL	8	3720	0.866	3200	0.048	3200	0.008	3522	0.018	3522	0.095	3522	0.009
SWE	1	3825	0.874	3522	0.045	3522	0.066	3900	0.038	3832	0.185	3200	0.026
SWE	2	3845	0.604	3825	0.044	3850	0.043	3832	0.035	383x	0.142	383x	0.015
SWE	3	383x	0.561	3841	0.043	3832	0.030	383x	0.034	3841	0.112	3850	0.013
SWE	4	3522	0.529	3832	0.042	3512x	0.018	3841	0.034	382x	0.075	3534a	0.012
SWE	5	3850	0.525	383x	0.040	3843	0.016	3850	0.034	3850	0.070	3825	0.012
SWE	6	3200	0.481	3842a	0.035	3841	0.016	3825	0.033	3825	0.067	382x	0.012
SWE	7	3843	0.460	3850	0.029	382x	0.014	382x	0.025	3200	0.058	3832	0.011
SWE	8	3556a	0.456	3200	0.023	3900	0.010	3845	0.023	3843	0.054	3556a	0.011
UK	1	3850	0.667	3850	0.055	3850	0.037	3850	0.088	3900	0.295	3850	0.010
UK	2	3825	0.614	3843	0.046	3720	0.023	3900	0.075	3850	0.176	3825	0.007
UK	3	3900	0.610	3825	0.041	3522	0.019	3200	0.055	382x	0.084	3522	0.006
UK	4	3720	0.294	3200	0.027	3825	0.017	3825	0.048	3512x	0.060	3720	0.005
UK	5	3843	0.276	3832	0.026	3200	0.013	3832	0.048	3522	0.057	3512x	0.005
UK	6	3512x	0.275	3710	0.025	3900	0.013	3720	0.038	383x	0.052	382x	0.004
UK	7	3832	0.269	3512x	0.025	3843	0.009	383x	0.038	3832	0.050	3900	0.004
UK	8	382x	0.212	3900	0.024	3512x	0.009	3512x	0.035	3720	0.045	3200	0.004
US	1	3825	0.242	3845	0.013	3825	0.054	3825	0.055	383x	0.088	3825	0.002
US	2	3845	0.135	3825	0.007	3845	0.030	3832	0.053	3832	0.083	3845	0.001
US	3	3842a	0.112	3841	0.005	3832	0.025	3845	0.046	3845	0.082	3832	0.001
US	4	3843	0.109	382x	0.005	3850	0.020	3512x	0.029	382x	0.081	382x	0.001
US	5	382x	0.097	3832	0.004	3512x	0.020	382x	0.026	3825	0.076	3850	0.000
US	6	3832	0.094	3850	0.003	3720	0.018	383x	0.024	3512x	0.059	383x	0.000
US	7	383x	0.091	3512x	0.003	3900	0.018	3850	0.017	3200	0.046	3522	0.000
US	8	3512x	0.088	3522	0.003	3100	0.017	3900	0.013	3842a	0.044	3842a	0.000

Table A.9: Export shares by country group

	Dependent Variable: Employment growth				Dependent Variable: Labour costs growth			
	Period 1		Period 2		Period 1		Period 2	
	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$
Exports	0.093	0.476	0.179***	0.001	0.207**	0.023	0.007	0.796
Imports	-0.194*	0.060	-0.310**	0.014	-0.181**	0.011	0.006	0.925
Productivity	-0.259***	0.000	-0.044	0.595	0.138***	0.000	0.197***	0.000
Labour costs	-0.294**	0.023	-0.468***	0.007				
3100	-0.009	0.370	-0.001	0.962	0.002	0.799	-0.004	0.614
3200	-0.023**	0.027	-0.049***	0.002	-0.004	0.526	-0.013	0.108
3300	-0.012	0.216	-0.009	0.548	-0.007	0.298	-0.012	0.150
3400	0.006	0.565	-0.004	0.818	0.004	0.601	-0.009	0.269
3512x	-0.004	0.693	-0.009	0.572	0.005	0.490	-0.021**	0.012
3522	0.024**	0.020	0.018	0.267	0.000	0.950	-0.015*	0.078
3534a	-0.045***	0.000	-0.025	0.129	0.010	0.196	-0.028***	0.001
3556a	0.021**	0.034	-0.003	0.871	0.000	0.963	-0.018**	0.031
3600	-0.018*	0.067	-0.017	0.285	-0.003	0.673	-0.010	0.212
3710	-0.040***	0.000	-0.029*	0.077	-0.009	0.203	-0.024***	0.004
3720	-0.020**	0.049	-0.022	0.158	0.008	0.269	-0.015*	0.062
3810	-0.005	0.649	-0.011	0.485	-0.004	0.558	-0.019**	0.017
3825	0.063***	0.000	-0.037**	0.041	-0.011	0.157	-0.031***	0.001
382x	-0.009	0.378	-0.007	0.641	-0.004	0.619	-0.018**	0.031
3832	0.031***	0.003	-0.004	0.817	-0.001	0.921	-0.027***	0.004
383x	0.006	0.577	0.038**	0.027	-0.001	0.944	-0.022**	0.013
3841	-0.069***	0.000	-0.030*	0.067	0.002	0.749	-0.032***	0.000
3842a	-0.043***	0.000	-0.007	0.669	-0.009	0.218	-0.023***	0.007
3843	0.014	0.152	-0.003	0.849	-0.002	0.782	-0.016**	0.045
3845	0.015	0.139	-0.030*	0.064	-0.007	0.337	-0.022**	0.010
3850	0.015	0.151	-0.006	0.683	0.004	0.543	-0.010	0.199
3900								
France	0.011	0.413	-0.001	0.966	0.079***	0.000	0.039***	0.000
Germany	0.013	0.175	0.007	0.649	0.039***	0.000	0.045***	0.000
Japan	0.022**	0.021	0.021	0.148	0.040***	0.000	0.044***	0.000
Netherlands	0.014	0.127	0.021	0.162	0.032***	0.000	0.045***	0.000
Sweden	0.035***	0.007	0.009	0.620	0.075***	0.000	0.066***	0.000
UK	0.017	0.207	0.020	0.173	0.084***	0.000	0.045***	0.000
US	0.018*	0.076	0.024	0.106	0.049***	0.000	0.050***	0.000
R^2	0.784		0.517		0.967		0.868	
$\bar{R}^2$	0.727		0.391		0.959		0.835	
$Prob > F$	0.000		0.000		0.000		0.000	
N	154		154		154		154	

Table A.10: Regression results for group A including all industries

	Dependent Variable: Employment growth				Dependent Variable: Labour costs growth			
	Period 1		Period 2		Period 1		Period 2	
	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$
Exports	-0.940	0.162	1.863***	0.001	-0.346	0.462	0.135	0.649
Imports	-1.363**	0.041	1.021	0.316	-0.516	0.267	0.466	0.378
Productivity	-0.254***	0.000	-0.029	0.725	0.139***	0.000	0.194***	0.000
Labour costs	-0.288**	0.026	-0.489***	0.005				
3100	-0.009	0.363	0.001	0.959	0.001	0.917	-0.004	0.616
3200	-0.013	0.246	-0.044***	0.006	-0.002	0.790	-0.013	0.107
3300	-0.013	0.203	-0.005	0.757	-0.008	0.242	-0.011	0.163
3400	0.005	0.628	-0.001	0.967	0.003	0.681	-0.009	0.277
3512x	-0.005	0.599	-0.012	0.463	0.004	0.553	-0.021**	0.012
3522	0.022**	0.029	0.012	0.452	0.000	0.966	-0.015*	0.075
3534a	-0.045***	0.000	-0.021	0.198	0.008	0.292	-0.028***	0.001
3556a	0.020*	0.056	-0.003	0.868	-0.001	0.892	-0.018**	0.029
3600	-0.019*	0.062	-0.014	0.386	-0.004	0.543	-0.010	0.213
3710	-0.041***	0.000	-0.026	0.109	-0.009	0.191	-0.024***	0.004
3720	-0.023**	0.028	-0.021	0.192	0.005	0.456	-0.016*	0.055
3810	-0.006	0.532	-0.008	0.600	-0.006	0.405	-0.019**	0.018
3825	0.060***	0.000	-0.046***	0.007	-0.007	0.402	-0.030***	0.001
382x	-0.010	0.302	-0.005	0.762	-0.004	0.537	-0.017**	0.034
3832	0.029***	0.006	-0.009	0.605	-0.001	0.875	-0.026***	0.003
383x	0.002	0.817	0.031*	0.078	-0.002	0.773	-0.023***	0.009
3841	-0.073***	0.000	-0.021	0.203	-0.001	0.930	-0.031***	0.000
3842a	-0.043***	0.000	-0.011	0.493	-0.011	0.113	-0.022***	0.006
3843	0.017	0.109	-0.010	0.559	-0.001	0.903	-0.018**	0.031
3845	0.012	0.230	-0.026	0.112	-0.007	0.331	-0.023***	0.006
3850	0.012	0.248	-0.016	0.309	0.007	0.349	-0.011	0.178
3900								
France	0.013	0.339	-0.004	0.771	0.081***	0.000	0.038***	0.000
Germany	0.016	0.105	0.006	0.657	0.042***	0.000	0.045***	0.000
Japan	0.022**	0.023	0.022	0.132	0.041***	0.000	0.044***	0.000
Netherlands	0.014	0.153	0.014	0.369	0.035***	0.000	0.044***	0.000
Sweden	0.036***	0.006	0.004	0.804	0.079***	0.000	0.067***	0.000
UK	0.018	0.207	0.014	0.334	0.085***	0.000	0.045***	0.000
US	0.018*	0.081	0.024	0.114	0.049***	0.000	0.051***	0.000
R^2	0.777		0.515		0.966		0.869	
$\bar{R}^2$	0.719		0.388		0.958		0.836	
$Prob > F$	0.000		0.000		0.000		0.000	
N	154		154		154		154	

Table A.11: Regression results for group B including all industries

	Dependent Variable: Employment growth				Dependent Variable: Labour costs growth			
	Period 1		Period 2		Period 1		Period 2	
	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$
Exports	-1.293	0.466	6.008***	0.000	0.860	0.490	0.408	0.612
Imports	-0.072	0.847	0.388*	0.089	-0.147	0.575	-0.011	0.930
Productivity	-0.284***	0.000	-0.119	0.191	0.126***	0.001	0.186***	0.000
Labour costs	-0.179	0.206	-0.551***	0.004				
3100	-0.011	0.337	-0.001	0.965	0.003	0.689	-0.003	0.739
3200	-0.026**	0.024	-0.042**	0.015	-0.001	0.850	-0.016*	0.075
3300	-0.007	0.515	-0.007	0.669	-0.007	0.404	-0.012	0.167
3400	0.005	0.660	-0.001	0.955	0.006	0.420	-0.008	0.369
3512x	-0.002	0.823	-0.012	0.475	0.007	0.374	-0.019**	0.036
3522	0.028**	0.015	0.004	0.799	0.003	0.739	-0.013	0.163
3534a	-0.043***	0.001	-0.022	0.234	0.011	0.188	-0.028***	0.003
3556a	0.020*	0.075	0.002	0.926	0.003	0.672	-0.016*	0.086
3600	-0.019	0.101	-0.015	0.364	0.000	0.953	-0.011	0.234
3710	-0.044***	0.000	-0.024	0.172	-0.004	0.634	-0.022**	0.019
3720	-0.024**	0.038	-0.015	0.374	0.005	0.525	-0.014	0.123
3810	-0.007	0.532	-0.009	0.612	-0.002	0.787	-0.018**	0.042
3825	0.049***	0.003	-0.060***	0.001	-0.002	0.855	-0.035***	0.000
382x	-0.011	0.334	-0.004	0.831	-0.001	0.891	-0.019**	0.039
3832	0.024**	0.047	-0.018	0.362	0.005	0.520	-0.029***	0.005
383x	-0.008	0.481	0.045**	0.016	0.002	0.766	-0.020**	0.036
3841	-0.068***	0.000	-0.028	0.118	0.002	0.768	-0.036***	0.000
3842a	-0.046***	0.000	-0.014	0.432	-0.004	0.649	-0.021**	0.024
3843	0.011	0.326	-0.007	0.687	0.001	0.901	-0.016*	0.080
3845	0.017	0.138	-0.035**	0.042	0.002	0.771	-0.021**	0.023
3850	0.016	0.192	-0.017	0.319	0.010	0.252	-0.014	0.136
3900								
France	0.002	0.863	0.002	0.879	0.076***	0.000	0.039***	0.000
Germany	0.012	0.274	0.010	0.538	0.037***	0.000	0.045***	0.000
Japan								
Netherlands	0.006	0.531	0.021	0.188	0.029***	0.000	0.045***	0.000
Sweden	0.027*	0.061	0.004	0.819	0.073***	0.000	0.067***	0.000
UK	0.008	0.569	0.018	0.259	0.081***	0.000	0.045***	0.000
US	0.016	0.169	0.025	0.120	0.046***	0.000	0.051***	0.000
R^2	0.792		0.592		0.970		0.879	
$\bar{R}^2$	0.728		0.467		0.961		0.843	
$Prob > F$	0.000		0.000		0.000		0.000	
N	132		132		132		132	

Table A.12: Regression results for group C including all industries

	Dependent Variable: Employment growth				Dependent Variable: Labour costs growth			
	Period 1		Period 2		Period 1		Period 2	
	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$
Exports	1.977**	0.024	1.299	0.266	-0.184	0.774	0.103	0.861
Imports	-0.757***	0.000	0.108	0.484	-0.071	0.588	-0.039	0.621
Productivity	-0.267***	0.000	-0.022	0.792	0.136***	0.000	0.194***	0.000
Labour costs	-0.245**	0.047	-0.453**	0.013				
3100	-0.014	0.174	0.001	0.937	0.000	0.974	-0.004	0.625
3200	-0.025**	0.012	-0.043**	0.010	-0.007	0.351	-0.013	0.105
3300	-0.017*	0.099	-0.005	0.757	-0.009	0.219	-0.012	0.156
3400	0.000	0.990	0.000	0.977	0.002	0.742	-0.009	0.275
3512x	-0.013	0.187	-0.012	0.470	0.004	0.622	-0.021**	0.012
3522	0.017*	0.095	0.016	0.338	0.000	0.971	-0.014*	0.084
3534a	-0.048***	0.000	-0.022	0.192	0.008	0.323	-0.028***	0.001
3556a	0.017*	0.084	0.000	0.995	-0.001	0.855	-0.017**	0.034
3600	-0.023**	0.020	-0.014	0.406	-0.005	0.491	-0.010	0.217
3710	-0.045***	0.000	-0.027	0.107	-0.010	0.170	-0.024***	0.004
3720	-0.027***	0.008	-0.020	0.231	0.005	0.465	-0.015*	0.062
3810	-0.009	0.362	-0.008	0.617	-0.006	0.392	-0.019**	0.019
3825	0.063***	0.000	-0.048**	0.013	-0.008	0.317	-0.028***	0.003
382x	-0.016	0.101	-0.008	0.642	-0.005	0.500	-0.018**	0.031
3832	0.025**	0.016	-0.012	0.506	-0.001	0.917	-0.026***	0.004
383x	-0.004	0.659	0.033*	0.063	-0.003	0.664	-0.022**	0.014
3841	-0.071***	0.000	-0.025	0.150	0.000	0.947	-0.032***	0.000
3842a	-0.043***	0.000	-0.012	0.461	-0.012	0.106	-0.022***	0.007
3843	0.005	0.597	-0.004	0.805	-0.004	0.582	-0.016**	0.047
3845	0.007	0.507	-0.027	0.111	-0.007	0.348	-0.022***	0.008
3850	0.001	0.954	-0.016	0.367	0.006	0.418	-0.011	0.219
3900								
France	0.009	0.457	-0.003	0.854	0.080***	0.000	0.039***	0.000
Germany	0.016*	0.098	0.005	0.738	0.042***	0.000	0.045***	0.000
Japan	0.024**	0.011	0.019	0.223	0.042***	0.000	0.044***	0.000
Netherlands	0.013	0.163	0.018	0.245	0.034***	0.000	0.045***	0.000
Sweden	0.034***	0.008	-0.001	0.970	0.078***	0.000	0.067***	0.000
UK	0.017	0.222	0.012	0.441	0.086***	0.000	0.045***	0.000
US	0.023**	0.027	0.020	0.200	0.050***	0.000	0.050***	0.000
R^2	0.794		0.480		0.965		0.869	
$\bar{R}^2$	0.739		0.344		0.957		0.836	
$Prob > F$	0.000		0.000		0.000		0.000	
N	154		154		154		154	

Table A.13: Regression results for group D including all industries

	Dependent Variable: Employment growth				Dependent Variable: Labour costs growth			
	Period 1		Period 2		Period 1		Period 2	
	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$
Exports	-0.138	0.671	0.834*	0.097	0.337	0.140	-0.249	0.319
Imports	-1.364***	0.002	0.125	0.649	-0.043	0.890	-0.148	0.281
Productivity	-0.253***	0.000	-0.075	0.394	0.144***	0.000	0.211***	0.000
Labour costs	-0.212*	0.098	-0.404**	0.026				
3100	-0.017	0.117	0.004	0.831	0.003	0.662	-0.007	0.380
3200	-0.020*	0.065	-0.045***	0.006	-0.004	0.579	-0.012	0.139
3300	-0.017	0.111	-0.003	0.863	-0.006	0.417	-0.015*	0.075
3400	-0.003	0.745	0.002	0.900	0.005	0.503	-0.012	0.140
3512x	-0.013	0.209	-0.007	0.681	0.006	0.425	-0.024***	0.005
3522	0.014	0.182	0.018	0.288	0.001	0.892	-0.017**	0.045
3534a	-0.065***	0.000	-0.017	0.341	0.012	0.198	-0.033***	0.000
3556a	0.013	0.201	0.002	0.885	0.001	0.869	-0.020**	0.015
3600	-0.027**	0.011	-0.011	0.510	-0.002	0.773	-0.013	0.109
3710	-0.048***	0.000	-0.021	0.237	-0.006	0.391	-0.028***	0.001
3720	-0.031***	0.005	-0.016	0.325	0.008	0.274	-0.018**	0.029
3810	-0.014	0.198	-0.005	0.760	-0.003	0.742	-0.023***	0.007
3825	0.042***	0.000	-0.041**	0.018	-0.011	0.159	-0.027***	0.001
382x	-0.019*	0.079	-0.006	0.736	-0.002	0.842	-0.020**	0.020
3832	0.024**	0.023	-0.009	0.614	0.000	0.996	-0.027***	0.003
383x	-0.006	0.586	0.036**	0.046	-0.002	0.835	-0.022**	0.011
3841	-0.075***	0.000	-0.026	0.142	0.006	0.431	-0.034***	0.000
3842a	-0.052***	0.000	-0.007	0.676	-0.007	0.335	-0.025***	0.003
3843	0.002	0.863	-0.003	0.840	0.000	0.953	-0.018**	0.027
3845	0.006	0.539	-0.022	0.195	-0.004	0.548	-0.024***	0.004
3850	0.004	0.724	-0.009	0.574	0.005	0.485	-0.011	0.188
3900								
France	0.013	0.333	-0.007	0.626	0.077***	0.000	0.042***	0.000
Germany	0.020**	0.049	-0.001	0.963	0.040***	0.000	0.048***	0.000
Japan	0.026***	0.008	0.014	0.372	0.040***	0.000	0.047***	0.000
Netherlands	0.014	0.134	0.014	0.403	0.031***	0.000	0.050***	0.000
Sweden	0.037***	0.005	-0.005	0.794	0.075***	0.000	0.070***	0.000
UK	0.019	0.171	0.010	0.553	0.081***	0.000	0.049***	0.000
US	0.026**	0.019	0.014	0.391	0.047***	0.000	0.054***	0.000
R^2	0.779		0.487		0.966		0.869	
$\bar{R}^2$	0.720		0.353		0.957		0.836	
$Prob > F$	0.000		0.000		0.000		0.000	
N	154		154		154		154	

Table A.14: Regression results for group E including all industries

	Dependent Variable: Employment growth				Dependent Variable: Labour costs growth			
	Period 1		Period 2		Period 1		Period 2	
	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$
Low skill intensive industries								
Exports	-0.428	0.255	-0.004	0.988	0.447***	0.008	0.029	0.908
Imports	-0.502	0.154	-0.014	0.918	-0.274*	0.091	0.155	0.266
Productivity	-0.249**	0.024	0.000	0.998	0.080	0.107	0.191**	0.036
Labour costs	-0.756**	0.045	-0.375**	0.039				
3100	0.045***	0.001	0.009	0.239	0.005	0.366	0.022***	0.002
3200	0.041***	0.007	-0.035***	0.000	-0.001	0.935	0.015**	0.038
3300	0.041***	0.002	0.003	0.700	-0.003	0.610	0.015**	0.028
3556a	0.085***	0.000	0.008	0.179	0.005	0.479	0.008	0.183
3600	0.037***	0.003	-0.006	0.457	0.003	0.648	0.017**	0.018
3710	0.015	0.237	-0.018**	0.011	-0.005	0.411	0.002	0.707
3842a								
France	0.001	0.972	-0.009	0.185	0.074***	0.000	0.012*	0.084
Germany	-0.024	0.140	-0.003	0.697	0.031***	0.000	0.019***	0.004
Japan	-0.022	0.223	0.010	0.129	0.035***	0.000	0.015**	0.022
Netherlands	-0.006	0.705	0.006	0.514	0.028***	0.000	0.026***	0.001
Sweden	0.038	0.186	-0.027**	0.035	0.070***	0.000	0.041***	0.000
UK	0.013	0.692	0.003	0.748	0.083***	0.000	0.017**	0.023
US	-0.018	0.371	0.020***	0.009	0.044***	0.000	0.018**	0.011
R^2	0.839		0.932		0.984		0.956	
$\bar{R}^2$	0.753		0.895		0.976		0.935	
$Prob > F$	0.000		0.000		0.000		0.000	
N	49		49		49		49	
High skill intensive industries								
Exports	0.535**	0.021	0.200**	0.033	0.180	0.212	0.016	0.654
Imports	-0.515***	0.005	-0.499**	0.046	-0.153	0.175	0.026	0.787
Productivity	-0.269**	0.030	-0.010	0.956	0.304***	0.000	0.156**	0.018
Labour costs	-0.264	0.289	-0.618	0.139				
3512	-0.011	0.332	-0.006	0.816	0.002	0.795	-0.009	0.353
3522	0.015	0.191	0.024	0.333	-0.006	0.402	-0.003	0.734
3825	0.047***	0.001	-0.027	0.343	-0.024***	0.004	-0.021*	0.051
3832	0.023*	0.085	-0.001	0.965	-0.014*	0.085	-0.012	0.277
383x	0.001	0.931	0.041	0.136	-0.013	0.122	-0.008	0.440
3841	-0.073***	0.000	-0.033	0.218	-0.003	0.697	-0.020**	0.043
3845	0.006	0.628	-0.033	0.209	-0.011	0.154	-0.009	0.352
3850								
France	0.016	0.486	-0.001	0.952	0.079***	0.000	0.025***	0.008
Germany	0.016	0.334	0.001	0.956	0.044***	0.000	0.035***	0.000
Japan	0.027*	0.058	0.019	0.500	0.034***	0.000	0.038***	0.000
Netherlands	0.009	0.539	0.035	0.188	0.031***	0.001	0.026***	0.008
Sweden	0.031	0.198	0.032	0.387	0.082***	0.000	0.057***	0.000
UK	0.027	0.242	0.026	0.325	0.078***	0.000	0.029***	0.002
US	0.027	0.135	0.011	0.722	0.055***	0.000	0.047***	0.000
R^2	0.815		0.413		0.974		0.867	
$\bar{R}^2$	0.727		0.134		0.963		0.809	
$Prob > F$	0.000		0.151		0.000		0.000	
N	56		56		56		56	

Table A.15: Regression results for group A by skill-intensity of industries

	Dependent Variable: Employment growth				Dependent Variable: Labour costs growth			
	Period 1		Period 2		Period 1		Period 2	
	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$
Low skill intensive industries								
Exports	8.908**	0.032	-0.438	0.653	1.127	0.609	1.320	0.151
Imports	-1.540*	0.062	0.096	0.877	-0.321	0.467	0.945	0.107
Productivity	-0.192*	0.067	0.007	0.939	0.124**	0.023	0.157*	0.073
Labour costs	-0.965***	0.004	-0.368*	0.050				
3100	0.048***	0.000	0.009	0.171	0.012*	0.059	0.018***	0.002
3200	0.035***	0.009	-0.034***	0.000	0.007	0.295	0.009*	0.077
3300	0.041***	0.001	0.003	0.631	0.004	0.532	0.012**	0.034
3556a	0.077***	0.000	0.009	0.118	0.011*	0.067	0.004	0.448
3600	0.039***	0.002	-0.005	0.373	0.008	0.190	0.013**	0.021
3710	0.005	0.644	-0.018***	0.003	0.002	0.744	0.000	0.988
3842a								
France	-0.002	0.930	-0.010	0.134	0.068***	0.000	0.014**	0.016
Germany	-0.027*	0.081	-0.004	0.609	0.026***	0.000	0.023***	0.000
Japan	-0.010	0.431	0.010	0.113	0.025***	0.000	0.018***	0.001
Netherlands	-0.027*	0.097	0.006	0.444	0.024***	0.003	0.024***	0.000
Sweden	0.023	0.369	-0.028**	0.022	0.067***	0.000	0.049***	0.000
UK	0.016	0.559	0.002	0.724	0.074***	0.000	0.020***	0.001
US	-0.010	0.552	0.020***	0.007	0.036***	0.000	0.022***	0.000
R^2	0.848		0.932		0.980		0.960	
$\bar{R}^2$	0.768		0.896		0.971		0.941	
$Prob > F$	0.000		0.000		0.000		0.000	
N	49		49		49		49	
High skill intensive industries								
Exports	0.646	0.572	1.806	0.104	0.470	0.510	0.419	0.305
Imports	-5.844**	0.024	3.228	0.272	-1.908	0.219	1.188	0.275
Productivity	-0.256*	0.050	0.071	0.682	0.314***	0.000	0.141**	0.024
Labour costs	-0.227	0.381	-0.773*	0.077				
3512	-0.013	0.289	0.001	0.964	0.001	0.857	-0.007	0.477
3522	0.015	0.224	0.027	0.296	-0.007	0.352	-0.001	0.886
3825	0.055***	0.001	-0.032	0.237	-0.022**	0.012	-0.016	0.119
3832	0.020	0.144	-0.002	0.957	-0.016**	0.049	-0.009	0.395
383x	0.003	0.824	0.035	0.221	-0.012	0.158	-0.009	0.400
3841	-0.080***	0.000	-0.008	0.775	-0.006	0.468	-0.017*	0.093
3845	0.005	0.694	-0.017	0.510	-0.011	0.148	-0.011	0.275
3850								
France	0.018	0.453	-0.014	0.584	0.080***	0.000	0.022**	0.020
Germany	0.023	0.179	-0.002	0.934	0.047***	0.000	0.033***	0.001
Japan	0.027*	0.065	0.017	0.549	0.035***	0.000	0.037***	0.000
Netherlands	0.019	0.214	0.009	0.777	0.036***	0.000	0.021*	0.066
Sweden	0.031	0.215	0.003	0.933	0.083***	0.000	0.055***	0.000
UK	0.026	0.275	0.011	0.696	0.079***	0.000	0.027***	0.005
US	0.024	0.190	0.007	0.825	0.055***	0.000	0.046***	0.000
R^2	0.798		0.363		0.974		0.872	
$\bar{R}^2$	0.703		0.061		0.962		0.816	
$Prob > F$	0.000		0.307		0.000		0.000	
N	56		56		56		56	

Table A.16: Regression results for group B by skill-intensity of industries

	Dependent Variable: Employment growth				Dependent Variable: Labour costs growth			
	Period 1		Period 2		Period 1		Period 2	
	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$
Low skill intensive industries								
Exports	7.237	0.524	-1.170	0.749	-1.235	0.816	-5.012	0.114
Imports	3.424**	0.015	0.027	0.955	-0.281	0.651	0.310	0.469
Productivity	-0.261**	0.025	0.008	0.945	0.099**	0.049	0.307***	0.002
Labour costs	-0.498	0.234	-0.414*	0.066				
3100	0.030**	0.041	0.008	0.401	0.005	0.453	0.021***	0.006
3200	0.010	0.425	-0.035***	0.000	0.001	0.808	0.005	0.421
3300	0.032**	0.031	0.006	0.494	-0.005	0.458	0.014*	0.053
3556a	0.058***	0.000	0.009	0.249	0.006	0.361	0.006	0.400
3600	0.020	0.136	-0.006	0.437	0.002	0.761	0.013*	0.074
3710	-0.001	0.931	-0.018**	0.023	-0.002	0.783	-0.002	0.767
3842a								
France	-0.022	0.520	-0.008	0.299	0.075***	0.000	0.016**	0.022
Germany	-0.024	0.222	-0.002	0.858	0.033***	0.000	0.021***	0.004
Japan								
Netherlands	-0.019	0.343	0.007	0.483	0.032***	0.000	0.028***	0.001
Sweden	0.006	0.848	-0.024*	0.081	0.074***	0.000	0.045***	0.000
UK	-0.005	0.885	0.004	0.663	0.082***	0.000	0.023***	0.002
US	-0.013	0.573	0.022**	0.025	0.043***	0.000	0.022***	0.003
R^2	0.858		0.938		0.986		0.967	
$\bar{R}^2$	0.770		0.899		0.979		0.949	
$Prob > F$	0.000		0.000		0.000		0.000	
N	42		42		42		42	
High skill intensive industries								
Exports	-0.319	0.887	6.875**	0.017	0.381	0.802	1.004	0.339
Imports	-0.565	0.264	0.299	0.458	-0.146	0.668	0.003	0.983
Productivity	-0.435***	0.003	-0.076	0.680	0.328***	0.000	0.112	0.108
Labour costs	-0.017	0.949	-1.009**	0.036				
3512	-0.023	0.103	0.005	0.845	-0.004	0.647	-0.002	0.873
3522	0.009	0.534	0.023	0.386	-0.012	0.205	0.003	0.779
3825	0.054***	0.007	-0.049	0.102	-0.025**	0.046	-0.018*	0.099
3832	0.017	0.250	-0.004	0.901	-0.017*	0.095	-0.008	0.477
383x	-0.018	0.227	0.064**	0.048	-0.018*	0.067	0.000	0.980
3841	-0.087***	0.000	-0.019	0.521	-0.010	0.302	-0.021*	0.060
3845	-0.002	0.874	-0.020	0.456	-0.010	0.332	-0.005	0.608
3850								
France	0.013	0.600	-0.003	0.918	0.082***	0.000	0.022**	0.026
Germany	0.024	0.194	0.007	0.796	0.050***	0.000	0.032***	0.002
Japan								
Netherlands	0.013	0.460	0.024	0.395	0.035***	0.002	0.024**	0.021
Sweden	0.029	0.302	0.007	0.859	0.086***	0.000	0.053***	0.000
UK	0.029	0.275	0.011	0.691	0.082***	0.000	0.025**	0.015
US	0.032	0.133	0.014	0.670	0.058***	0.000	0.044***	0.000
R^2	0.818		0.452		0.976		0.882	
$\bar{R}^2$	0.719		0.151		0.964		0.823	
$Prob > F$	0.000		0.159		0.000		0.000	
N	48		48		48		48	

Table A.17: Regression results for group C by skill-intensity of industries

	Dependent Variable: Employment growth				Dependent Variable: Labour costs growth			
	Period 1		Period 2		Period 1		Period 2	
	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$
Low skill intensive industries								
Exports	0.997	0.640	-0.590	0.689	-0.757	0.536	0.093	0.951
Imports	-3.070***	0.003	-0.715	0.347	0.235	0.670	-0.795	0.299
Productivity	-0.313***	0.007	0.032	0.750	0.118*	0.053	0.213**	0.034
Labour costs	-0.729**	0.022	-0.410**	0.022				
3100	0.021*	0.094	0.006	0.429	0.013*	0.068	0.015**	0.047
3200	0.025**	0.023	-0.040***	0.000	0.004	0.474	0.004	0.664
3300	0.016	0.166	-0.001	0.881	0.004	0.558	0.007	0.392
3556a	0.061***	0.000	0.004	0.563	0.011*	0.064	0.001	0.870
3600	0.013	0.241	-0.009	0.244	0.008	0.197	0.009	0.279
3710	-0.012	0.276	-0.022***	0.006	0.003	0.628	-0.006	0.459
3842a								
France	0.011	0.638	-0.005	0.500	0.069***	0.000	0.019**	0.014
Germany	-0.007	0.627	0.002	0.829	0.027***	0.000	0.026***	0.001
Japan	0.003	0.830	0.015*	0.088	0.026***	0.000	0.022***	0.009
Netherlands	-0.001	0.919	0.013	0.248	0.026***	0.000	0.034***	0.001
Sweden	0.044*	0.074	-0.021	0.125	0.067***	0.000	0.050***	0.000
UK	0.031	0.244	0.008	0.428	0.075***	0.000	0.026**	0.010
US	0.020	0.276	0.023***	0.006	0.035***	0.000	0.024***	0.001
R^2	0.861		0.934		0.980		0.956	
$\bar{R}^2$	0.787		0.898		0.971		0.934	
$Prob > F$	0.000		0.000		0.000		0.000	
N	49		49		49		49	
High skill intensive industries								
Exports	2.000	5.441	1.878	0.498	-0.149	0.866	0.780	0.442
Imports	-0.594**	0.010	0.040	0.877	-0.013	0.928	-0.016	0.870
Productivity	-0.344***	0.008	0.085	0.633	0.312***	0.000	0.148**	0.020
Labour costs	-0.083	0.738	-0.629	0.155				
3512	-0.012	0.299	0.003	0.924	0.000	0.952	-0.005	0.637
3522	0.020	0.103	0.032	0.301	-0.008	0.278	0.002	0.883
3825	0.062***	0.000	-0.033	0.307	-0.025**	0.010	-0.015	0.200
3832	0.029**	0.037	-0.005	0.873	-0.017**	0.048	-0.010	0.398
383x	0.000	0.976	0.043	0.161	-0.017**	0.036	-0.005	0.639
3841	-0.066***	0.000	-0.010	0.757	-0.007	0.407	-0.017	0.146
3845	0.009	0.433	-0.012	0.657	-0.012	0.109	-0.008	0.435
3850								
France	-0.003	0.913	-0.016	0.596	0.082***	0.000	0.021*	0.064
Germany	0.009	0.589	-0.008	0.804	0.049***	0.000	0.032***	0.003
Japan	0.018	0.219	0.003	0.923	0.037***	0.000	0.033***	0.007
Netherlands	-0.008	0.646	0.015	0.718	0.034***	0.001	0.021	0.162
Sweden	0.013	0.575	-0.011	0.796	0.085***	0.000	0.052***	0.000
UK	0.008	0.726	0.002	0.945	0.081***	0.000	0.024*	0.066
US	0.013	0.471	-0.008	0.825	0.057***	0.000	0.042***	0.001
R^2	0.805		0.331		0.973		0.867	
$\bar{R}^2$	0.713		0.014		0.961		0.808	
$Prob > F$	0.000		0.439		0.000		0.000	
N	56		56		56		56	

Table A.18: Regression results for group D by skill-intensity of industries

	Dependent Variable: Employment growth				Dependent Variable: Labour costs growth			
	Period 1		Period 2		Period 1		Period 2	
	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$	Coeff.	$p < \|t\|$
Low skill intensive industries								
Exports	-0.355	0.676	-0.133	0.825	1.067***	0.001	-0.486	0.423
Imports	-0.799	0.600	0.634	0.147	-0.807	0.199	-0.481	0.266
Productivity	-0.222*	0.060	-0.007	0.942	0.118**	0.010	0.209**	0.019
Labour costs	-0.789*	0.067	-0.315*	0.076				
3100	0.041***	0.004	0.010	0.113	0.006	0.303	0.016**	0.011
3200	0.029	0.137	-0.048***	0.000	0.006	0.480	0.020*	0.055
3300	0.035**	0.011	0.003	0.597	-0.001	0.842	0.009	0.118
3556a	0.071***	0.000	0.008	0.167	0.005	0.335	0.005	0.399
3600	0.029**	0.021	-0.004	0.451	0.001	0.811	0.010*	0.079
3710	0.004	0.715	-0.017***	0.006	-0.002	0.738	-0.004	0.443
3842a								
France	0.002	0.957	-0.011*	0.078	0.073***	0.000	0.017***	0.004
Germany	-0.020	0.294	-0.006	0.411	0.034***	0.000	0.026***	0.000
Japan	-0.011	0.584	0.008	0.255	0.037***	0.000	0.022***	0.000
Netherlands	-0.015	0.430	-0.001	0.915	0.034***	0.000	0.034***	0.000
Sweden	0.026	0.441	-0.033***	0.007	0.075***	0.000	0.051***	0.000
UK	0.014	0.706	-0.003	0.727	0.083***	0.000	0.027***	0.000
US	-0.010	0.657	0.014*	0.094	0.045***	0.000	0.028***	0.000
R^2	0.814		0.936		0.986		0.958	
$\bar{R}^2$	0.715		0.903		0.979		0.938	
$Prob > F$	0.000		0.000		0.000		0.000	
N	49		49		49		49	
High skill intensive industries								
Exports	0.141	0.816	0.751	0.426	-0.667*	0.085	-0.044	0.900
Imports	-2.518***	0.001	0.125	0.797	0.093	0.834	-0.069	0.704
Productivity	-0.352***	0.005	0.007	0.970	0.285***	0.000	0.158**	0.027
Labour costs	-0.081	0.742	-0.569	0.194				
3512	-0.016	0.185	-0.001	0.966	-0.005	0.479	-0.010	0.305
3522	0.012	0.306	0.025	0.344	-0.011	0.142	-0.004	0.697
3825	0.045***	0.002	-0.037	0.209	-0.027***	0.001	-0.017	0.113
3832	0.029**	0.034	-0.007	0.815	-0.019**	0.020	-0.012	0.275
383x	0.000	0.975	0.040	0.173	-0.022**	0.010	-0.008	0.431
3841	-0.069***	0.000	-0.021	0.458	-0.020*	0.065	-0.022**	0.025
3845	0.006	0.642	-0.016	0.554	-0.018**	0.028	-0.011	0.242
3850								
France	0.008	0.767	-0.013	0.633	0.089***	0.000	0.026***	0.007
Germany	0.019	0.280	-0.006	0.842	0.054***	0.000	0.036***	0.000
Japan	0.027*	0.066	0.011	0.713	0.039***	0.000	0.039***	0.000
Netherlands	0.005	0.709	0.023	0.460	0.037***	0.000	0.031***	0.004
Sweden	0.028	0.276	-0.001	0.977	0.092***	0.000	0.059***	0.000
UK	0.021	0.410	0.011	0.700	0.089***	0.000	0.032***	0.001
US	0.026	0.189	-0.003	0.921	0.063***	0.000	0.048***	0.000
R^2	0.821		0.347		0.975		0.865	
$\bar{R}^2$	0.736		0.038		0.964		0.807	
$Prob > F$	0.000		0.369		0.000		0.000	
N	56		56		56		56	

Table A.19: Regression results for group E by skill-intensity of industries

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