in Argentina, Armenia, Azerbaijan, Belarus, Belgium, Brazil, Chile, China, Columbia, Denmark, Finland, France, Georgia, Germany, Guatemala, Hungary, India, Italy, Kazakhstan, Kirgizstan, Mexico, Netherlands, Paraguay, Poland, Russia, South Africa, South Korea, Spain, Sweden, Tajikistan, Turkmenistan, Ukraine , United Kingdom, United States, Uzbekistan
www.wageindicator.org

Foreign Direct Investment in Information Technology in 12 EU countries and its Social Effects – WIBAR-2 Report No. 4

Maarten van Klaveren, University of Amsterdam/AIAS and STZ consultancy & research

Kea Tijdens, University of Amsterdam/AIAS

Nuria Ramos Martin, University of Amsterdam/AIAS

Barbora Brngálová, University of Amsterdam/AIAS

13 / 01 / 2009

WAGEINDICATOR SUPPORT FOR TRADE UNION BARGAINING IN EUROPE (WIBAR-2)
Supported by the European Commission in its Industrial Relations and Social Dialogue Program Dec.2007-Nov.2008 (nr VS/2007/0534).
Coordinated by the University of Amsterdam/AIAS
(Amsterdam Institute of Advanced Labour Studies)

Table of Contents

1 Introduction

In the globalizing world economy, activities of multinational enterprises (MNEs) are growingly covering various countries. In the European Union the impact of foreign direct investment (FDI) on wages and working conditions is supposed to be substantial, but especially on working conditions evidence in this field is lacking nearly totally. The available empirical studies mainly focus on comparing wages earned in subsidiaries of MNEs respectively in domestic firms in a number of countries. Whether multinational establishments in developed home and host countries offer better or worse working conditions compared to domestic firms, is an issue that has not yet been explored in a systematic way.[1] MNEs basically show two approaches to their activities in host countries, adaptive or innovative/transferring, the latter indicating the managerial aim to transfer human resources and other management practices from home to host country.[2] Various and contradictory forces may be at stake here. On the one hand, with the spread of firms operating at an international level the location (establishment) level tends to increase in importance; this can give rise to considerable variation in wages, working conditions and employment practices within MNEs.[3] On the other hand, encouraged by EU-wide production and marketing strategies and by improved information and communication technologies major MNEs seem to have put in place management systems and structures to diffuse "best" practices across locations in different EU member states, with important spill-overs for industrial relations: such benchmarking may well diminish variation in human resource (HR) practices and working conditions.[4] National institutions constrain the transfer of HR practices within MNEs, but they are porous, presenting partial and temporal barriers.[5]

Actually cross-country comparative data gathered by the *WageIndicator* web-survey allows to clarify the impact of FDI on wages and working conditions across a number of EU member

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1 Cf. Karolina Ekholm (2004) Multinational enterprises and their effect on labour markets, in Bo Södersten (ed.) *Globalization and the Welfare State*. Basingstoke: Palgrave MacMillan, 83; OECD / ILO Conference on Corporate Social Responsibilty (2008) *Report. The Impact of Foreign Direct Investment on Wages and Working Conditions.* Paris, 23-24 June, 14.

2 Tony Edwards (2000) Multinationals, international integration and employment practice in domestic plants, *Industrial Relations Journal,* 31(2): 115-129; Bela Galgoczi (2003) The impact of multinational enterprises on the corporate culture and on industrial relations in Hungary, *South-East Europe Review*, 1-2: 27-44.

3 Wilfried Ruigrok, Rob van Tulder (1995) *The logic of international restructuring*. London/New York: Routledge and Kegan Paul; Marta Kahancová (2007a) *Making the Most of Diversity. Social Interaction and Variation in Employment Practices in a Multinational Company*. Diss. University of Amsterdam; Marta Kahancová (2007b) One Company, Four Factories: Coordinating Employment Flexibility Practices with Local Trade Unions, *European Journal of Industrial Relations*, 13(1): 67-88.

4 Graeme Martin, Phil Beaumont (1998) Diffusing "Best practice" in Multinational Firms: Prospects, Practice and Contestation, *International Journal of Human Resource Management,* 9(4): 671-695; Keith Sisson, James Arrowsmith, Paul Marginson (2003) All benchmarkers now? Benchmarking and the Éuropeanisation'of industrial relations, *Industrial Relations Journal*, 34(1): 15-31.

5 Tony Edwards, Trevor Colling, Anthony Ferner (2007) Conceptual approaches to the transfer of employment practices in multinational companies: an integrated approach, *Human Resource Management Journal*, 17(3): 201-217.

states and to discuss these issues in the European trade union movement. With these two goals in mind, UvA-AIAS developed the current *WageIndicator Support for Trade Union BARgaining – 2* (WIBAR-2) project, which was supported by the European Commission in its Industrial Relations and Social Dialogue Program (nr VS/2007/0534) and is running from December 2007 – November 2008. University of Amsterdam / Amsterdam Institute for Advanced Labour Studies (UvA-AIAS) sought and found on this behalf the partnership of ETUC, European Metalworkers' Federation (EMF), Ruskin College (Oxford, UK), and WSI im Hans**-**Böckler**-**Stiftung (Düsseldorf, Germany). WIBAR-2 builds on the experiences of the first WIBAR project, developed jointly with ETUC and ETUI-REHS, which ran from September 2006 until August 2007, was also supported by the Industrial Relations and Social Dialogue Program (nr VS/2006/0178) and resulted in a book.[6] This book compares *WageIndicator* data on working time, low pay, training, older workers, collective bargaining coverage and work-related stress across countries and (13) industries. As we will explain in the next section, new *WageIndicator* data enable to compare wages and working conditions (in a broad sense) between subsidiaries of MNEs and domestic firms, thus allowing insight in the social effects of notably inward FDI.

As indicated above, the outcomes of the WIBAR-2 project will be of interest for the research community, various groups of policy-makers and the general public. They will also be relevant for the European trade union movement. The ETUC 2006 annual report of collective bargaining in Europe points out that the advancement of European economic integration "as well as changed practices by employers and, in particular, multinationals, have led to a situation in which bargaining processes in individual European countries become more and more linked to and influenced by collective bargaining in the rest of the continent", and emphasizes the need for adequate information: "More and more trade unions require such information to develop their bargaining strategies and to coordinate their practices elsewhere. It allows trade unionists to cope more effectively with issues like competitive wage dumping, sectoral bargaining, collective bargaining in multinationals, etcetera."[7] In its document "The coordination of collective bargaining in 2007", the ETUC states that the European economic model is turning collective bargaining into a matter of common concern for trade unions throughout Europe.[8] Both inside and outside the euro area, the ETUC argues, wages and working conditions are under risk from the European economic model; in addition, the framework of reference for big companies is increasingly shifting from the

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6 Maarten van Klaveren, Kea Tijdens (eds) (2008) *Bargaining issues in Europe: comparing countries and industries.* Brussels: ETUI-REHS / University of Amsterdam- AIAS / WageIndicator.

7 Maarten Keune (2006) *The Coordination of Collective Bargaining in Europe. Annual Report 2006.* Brussels: ETUC, 2.

8 ETUC (2006) *The coordination of collective bargaining in 2007,* Resolution adopted by the ETUC Executive Committee in their meeting held in Brussels on 07-08 December 2006.

national sectoral level towards the European level or even the global market on which these companies are competing, thereby putting pressure on nationally determined working conditions. The ETUC document concludes that, given the nature and extent of these challenges, the ETUC needs to reinforce the coordination of collective bargaining in Europe, and announces a number of actions to strengthen such coordination.

The current global financial and economic crisis emphasizes that internationalization cannot be separated neither from the growing dominance of shareholder value approaches of corporate governance and massive capital movements fuelled by the 'financialisation' and 'securitisation' of the economy, nor from pure greed and macho behaviour, without the corresponding development of forms of regulation at an appropriate (global, European) level.[9] Already in the years preceding the crisis the internationalization of trade and production, including benchmarking international management practice, has given rise to escalating levels of market uncertainty and to the permanent reorientation and reorganisation of companies in accordance with short-term goals. Under such conditions, it is even more important for trade unionists throughout Europe to get actual insights in the social effects of FDI, comparing these across countries and industries, as well as to intensify the debate on this issue.

The WIBAR-2 project includes 12 countries: Belgium, Denmark, Finland, France, Germany, Hungary, Italy, the Netherlands, Poland, Spain, Sweden, and the UK. These 12 countries accounted for 91% of the total FDI inflow in the European Union in 2007, 85% in 2006 and even 96% of the EU total in 2005. In these years the shares of the 12 in the world's FDI inflow were respectively 40%, 34% and 50%. Calculated over 2005-2007, inward FDI flows were largest in the UK (29.5% of the EU total), followed by France (17.2%), the Netherlands (8.3%), Germany (7.9%), Belgium (7.5%), and Spain (5.6%). In these years, the Central and Eastern European countries (CMEs) jointly attracted 9.1% of the EU FDI inflow. In this group Poland was on top with 2.5% of the EU inflow.[10]

The continuous *WageIndicator* web-survey is building an ever-growing dataset with information on wages, benefits, and other labour conditions, such as working times, contracts, jobs and job levels, training, and collective bargaining coverage. Currently in the

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[9] Cf. Andrew Watt (2008) The economic and financial crisis in Europe: addressing the causes and the repercussions, *European Economic and Employment Policy Brief* (ETUI-REHS), No. 3 – 2008, 6-10.

[10] The FDI outflow from the 12 countries was also considerable, jointly taking 89% of the total outflow from the EU countries in 2007, 92% in 2006 and 93% in 2005. Again calculated over these three years, FDI outflows were largest from France (19.3% of the EU total), the UK (18.1%), Germany (13.8%), Spain (10.9%), the Netherlands (9.0%) and Italy (7.3%). All calculations based on UNCTAD (2008) *World Investment Report 2008* (http://www.unctad.org/en/docs/wir2008_en.pdf), Table B.1.

12 countries involved over 150,000 wage-earners yearly complete the *WageIndicator* questionnaire. Our reporting of the social effects of FDI primarily goes back on the question in this web-survey, posed in all countries at stake, whether the worker's firm has more than one location, and if so, if this is located in the country at stake or abroad. In our analyses we have linked the answers on this question given during the year 2007 and the first half of 2008 with those of the same individuals concerning wages and working conditions in MNEs and domestic firms. We have done so in preparatory reports for five industries: metal and electronics manufacturing; finance and call centres; transport and telecom; information technology (IT), and the retail industry. In October and November 2008, the partners in WIBAR-2 organized three conferences, in which an audience of trade union officials and researchers discussed these reports. These conferences covered respectively metal and electronics manufacturing (in Brussels); transport and telecom (in Oxford), and retail (Duisburg). The report that you are currently reading covers the IT industry. Its analyses of the effects of FDI are altogether based on the answers of 9,750 respondents working in this industry, 17.5% of all respondents from the five industries under scrutiny.

The use of a second database connected with the *WageIndicator* dataset gives this report added value. As part of the WIBAR-2 project, Van Klaveren and Tijdens have developed a Multinational Enterprise (further MNE)-database for the 12 EU member states and the five industries in question. This database, to be explained more elaborately in sub-section 2.1, is underlying the *WageIndicator* web-survey for its survey question "What is the name of the company where you work?". In due course, the answers on this question linked with the MNE database will enable analyses of the country-specific impact of inward but also outward FDI on wages and working conditions, as well as comparing wages and working conditions across countries within one company as well as between companies. Already now, the MNE database allows offering the reader a state of affairs of FDI in the respective industries in the 12 countries per March 2008. We present the results of this first exploration of the MNE database in the next two sections. Afterwards, in the sections 4 to 12, we will treat the social effects of inward FDI in the IT industry

2 Foreign direct investment in information technology: a state of affairs

2.1 Introduction

As stated, the MNE database is underlying the *WageIndicator* web-survey for its survey question "What is the name of the company where you work?". In this survey, respondents

first tick the industry where they work, and then a list of company names in this particular industry pops up. At the bottom of the list an option 'Other' allows respondents to key in the company name if that name is not listed. An option 'Don't want to say' facilitates respondents not to identify the name of the company where they are working.

For the database sound knowledge of industries and enterprises was combined with information gathered through the Internet. Industry knowledge partly relied on industry studies carried out since 2000 by AIAS and STZ consultancy & research. This knowledge was brought up-to-date through search efforts in company annual reports, with UN publications[11] as a starting point, and additionally via Google and Wikipedia. Names and ownership relations have been updated until March 25, 2008. This means that the situation concerning ownership relations as of that date will be the starting point for all analyses in the course of the WIBAR-2 project.

The WIBAR-2 MNE database contains 412 MNE names with in total 1,027 subsidiaries and with in total 4,244 establishments in the 12 countries involved. For the purpose of this research, a MNE is defined as a company with one or more subsidiaries, whereby at least one subsidiary has establishments in two or more countries. An establishment is defined at the level of the country. Within one country, establishments are not distinguished individually; even if subsidiaries own many establishments in that country, like stores in retail chains, these establishments are counted as one. For the sake of comparison in a later stage, for a number of countries the database also contains names of large domestic companies in the five industries. We have limited our search to subsidiaries that had a significant and visible existence in the market.

2.2 Information technology in the database

This paper presents brief results of a first exploration of the database. Its focus is on the IT industry, split up in only two sub-sectors according to NACE coding: Table 1 (next page). As the activities of the majority of large IT companies and their main subsidiaries include mostly activities under 4-digit NACE codes like 7210: Hardware consultancy, 7230: Data processing, or 7240: Database activities, we abstained from efforts to bring these companies and subsidiaries under these respective headings. We only separated 'computer and related activities' from 'internet activities', and added a special category of investors (hedge funds, private quite funds).

[11] Notably UNCTAD (2008) *World Investment Report 2008*.

Table 1 MNEs in IT by sub-sector, according to NACE-coding, breakdown by numbers of companies and subsidiaries

NACE		No.companies	No. subsidiaries
7200	computer and related activities	56	72
9999	internet activities	4	5
67121	hedge funds, private equity funds	2	4
Total		**62**	**81**

For reasons of comparison we have included in our database 15 (large) domestic IT companies, based in Belgium, France, Germany, Italy, the Netherlands and the UK. Thus, for IT our database in total contains 77 company names. Yet, our further analysis will mostly be based on the 62 MNEs.

The average number of subsidiaries per company normally can act as a measure for the diversification of MNE interests, be it that –as we indicated above-- most large IT companies have diversified *within* subsidiaries, in order to achieve internal flexibility and synergetic effects. Moreover, advertising the company name as a 'brand' remains important in the IT industry. In our database on average IT MNEs own 1.3 subsidiaries, indeed by far the lowest figure of the five industries under scrutiny.

3 Internationalization in information technology

According to our database, in the 12 countries at stake the 62 IT MNEs have in total 81 subsidiaries. These subsidiaries have 437 establishments. Moreover, the 15 domestic companies that we have traced own 18 subsidiaries and, logically following our definitions, also 18 establishments.

The figures on MNEs in IT indicate that subsidiaries have on average 5.4 establishments. This implies that each subsidiary on average is involved in between five and six countries out of 12. This is the second highest figure of the five industries under study, only surpassed by metal and electronic manufacturing. This outcome seems to correctly reflect the state of affairs in IT internationalization, indicating the leading role that this industry actually plays in the globalization process. Yet, it should taken into account that small and medium-sized enterprises (SMEs) continue to dominate the industry in terms of incidence: in 2003 in the EU-25 only 3% of all companies under NACE code 7200 had over 20 employees.[12]

[12] European Monitoring Centre on Change (EMCC) (2006) *Trends and drivers of change in the European knowledge-intensive business services sector: Mapping report.* Dublin: European Foundation for the Improvement of Living and Working Conditions, 7.

3.1 Internationalization by host country

Table 2 shows that in our MNE database the large majority (405, 93%) of all MNE establishments in IT are found in computer and related activities (code 72), and only 7% in internet-related activities.

Table 2 Number of MNE establishments in 12 countries in IT by MNE host country, breakdown by sub-sector, according to NACE code (Table 1)

	7200	9999	Total
BE	41	1	42
DK	26	3	29
FI	23	2	25
FR	42	3	45
DE	48	4	52
HU	18	2	20
IT	30	4	34
NL	47	3	50
PL	21	1	22
ES	33	2	35
SW	26	3	29
UK	48	6	54
tot.	**405**	**32**	**437**

Looking at the division over the 12 host countries, the table shows that we traced most IT establishments in the UK (54, 12.5%), followed by Germany (52, 12%), the Netherlands (50, 11%), and France (45, 10%). We found the lowest numbers of establishments in Poland (22) and Hungary (20).

3.2 Internationalization by MNE home country

Table 3 (next page) shows that a substantial share of all MNE establishments in IT in the 12 countries at stake (105, 24%) is owned by MNEs with the USA as their home country, followed by those from France (71 or 16%) and the UK (63 or 14%). Logically, the largest number of establishments of the respective home companies per EU country is located in the own country: 15 in France, 12 in the UK, 22 in the Netherlands, etcetera. The database did not contain any names of Poland- and Hungary-based MNEs in IT. Yet, as we will see notably Polish domestic IT firms play their role and have a certain strength in the labour market (Table 8d).

The table reveals various patterns of internationalization of the IT business by MNE home country. For example, France-based IT MNEs have expanded particularly to the UK and Belgium. German MNEs internationalized somewhat less and rather evenly across Europe. Dutch MNEs particularly invested in Belgium, and UK-based firms in Germany. to a lesser extent in Germany and France. US-based IT firms have spread their interests rather evenly, be it with some concentration on the UK. In total, we found the substantial share of 140

(32%) establishments of MNEs with their headquarters outside the EU: besides US-based also Japan- and India-based MNEs. Across the five industries under scrutiny, this 'from outside the EU' share was only higher in metal and electronics manufacturing (46%).
Logically, the largest number of establishments of the respective home companies per country is often located in the own country: 18 in the Netherlands, 15 in France, 11 in Germany and the UK.

Table 3 Number of MNE establishments in 12 countries in IT, breakdown vertical by MNE home country and horizontal by host country

	BE	DK	FI	FR	DE	HU	IT	NL	PL	ES	SW	UK	Total
Belgium	4	0	0	1	1	0	1	2	0	0	0	1	10
Denmark	1	1	0	0	1	0	0	0	0	0	0	1	4
Finland	0	2	4	1	3	0	1	1	0	0	2	2	16
France	9	3	2	15	7	2	6	6	2	7	2	10	71
Germany	4	3	4	6	11	2	4	5	4	4	4	6	57
India	1	1	1	1	1	1	1	1	1	1	1	1	12
Italy	0	0	0	1	0	0	1	0	0	0	0	0	2
Japan	2	2	2	2	2	1	2	3	1	2	2	2	23
Netherlands	8	3	1	5	5	1	2	18	2	3	4	4	56
Spain	0	0	0	0	0	0	0	0	0	2	0	0	2
Sweden	0	1	1	1	1	1	1	1	1	1	2	1	12
UK / Turkey	0	0	0	0	1	0	0	0	0	0	0	3	4
United Kingdom	5	3	3	3	6	6	2	5	4	6	3	12	63
United States	8	10	7	9	12	6	9	8	7	9	9	11	105
Total	42	29	25	45	52	20	34	50	22	35	29	54	437
of which top 40	34	27	23	38	39	17	29	30	20	30	22	40	349
share top 40 firms	81%	93%	92%	84%	75%	85%	85%	60%	91%	86%	76%	74%	80%

The table reveals various patterns of internationalization of the IT business by MNE home country. France-based IT MNEs in finance and call centres have expanded particularly to the UK and Belgium. German MNEs spread their expansion rather evenly, Dutch MNEs expanded in particular to Belgium. UK-based MNEs in finance and call centres notably internationalized towards Germany, Hungary and Spain. US-based finance and call centre firms showed an orientation especially towards Germany, the UK and Denmark.

In Table 21 (Annex) we present an overview of the 40 largest and most internationalized IT MNEs active in "our" 12 European countries that are included in our database. In order to be ranked, they should have deployed substantial activities in at least three of 12 countries by March 2008. In this overview 13 of the top 20 IT groups in the world are represented that we ranked for 2007 according to sales (Table 22, also in the Annex), with sales each at least $ 3 billion. This top 20 was clearly US-dominated: 13 firms were US-based, two were India- and one was Japan-based; four were based in EU member states, of which two in France, one in Germany and one in the UK.[13] Another 10 in our list of 40 most internationalized IT firms

[13] One has to be aware that the division with metal and electronics manufacturing is rather arbitrary. We included for example IBM in the latter industry but grouped Fujitsu, with its large IT servicing division, under 'IT'. Manufacturing activities of Fujitsu are carried out in Europe exclusively through its joint venture with Siemens.

were in the sales league of $ 0.5 – 3 billion, and nearly all of these firms offered a broad spectrum of IT services.[14] The remaining 17 had in 2007 sales less than $ 500 million, and operated for the larger part in specialized markets. Jointly these 40 most internationalized MNEs, 65% of the 62 IT companies included in our database, owned by March 2008 according to our information 57 of 81 subsidiaries (70%) and 349 of 437 establishments (80%). These figures imply averages of 1.4 subsidiaries and 8.7 establishments – or 6.1 establishments per subsidiary (In table 21, the first row --No. establishm./1-- on the total number of establishments gives a simple footing of the 'x's and 'xx's' indicating presence as such per country; the second row --No. establishm./2-- shows the real number, as many large firms have 'parallel' subsidiaries with their own establishments in a host country). The remaining 22 IT MNEs with substantial activities in less than three countries own 24 subsidiaries and 88 establishments, meaning averages of 1.1 subsidiaries and 4.0 establishments per firm, or 3.7 establishments per subsidiary -- in every respect lower than their more internationalized competitors.

It is interesting to note the share of the top 40 IT firms in the number of establishments per country (last row of Table 3). This share is lowest in the Netherlands (both 60%), followed by the UK and Sweden. The share is highest in Denmark (93%), Finland (92%) and Poland (91%). These outcomes suggest that the largest, most internationalized IT firms had gained strong positions in FDI in notably these three countries.

4 The social effects of foreign direct investment in information technology

For the analyses in this part of the report, we use the *WageIndicator* data collected in 2007 and the first half of 2008. Initially, we aimed for analyses of the social effects of FDI in 12 EU member states, but the number of *WageIndicator* observations in Denmark, Italy and France were too few. For France, this is not surprising because the questionnaire started just in 2008. For Italy and Denmark, *WageIndicator* unfortunately lacks media partners with a strong position in the national Internet market. Consequently, the analyses will be performed for nine countries only. During the year 2007 and the first half of 2008, altogether 9,750 employees in the IT industry in nine countries completed the questionnaire. Table 4 (next page) shows a breakdown by country. The reader should be aware that the numbers of respondents in Hungary and Sweden remain small.

[14] These 10 included: EMC2 (US), GFI Informatique (FR), Groupe Bull (FR), ILOG (FR), Itella (IT), Misys (UK), Sage Group (UK), SAS Institute (US), Software AG (DE), Sopra Groupe (FR). Employment in this category varied between 2,200 and 10,500.

Table 4 Number of observations in IT by country

Belgium	Finland	Germany	Hungary	Netherl.	Poland	Spain	Sweden	UK
1,214	694	1,393	32	3,292	588	1,329	136	1,034

In the next chapters (5 to 7), we deal with the characteristics of the IT firms: their establishment size, locations, and ownership. In the chapters 8 to 12 we go into the effects of FDI on wages, working conditions, working hours, training and industrial relations, through dividing the outcomes between MNEs and non-MNEs.

5 Establishment size

How large are the company establishments in IT? Table 5 shows that the establishments where the respondents are employed, vary from a median size (headcount, see last row) of 1,315 (the Netherlands) to 485 (Spain). Like can be noted in other industries as well, the Hungarian, Polish and Spanish establishments are comparatively small. Jointly with Germany, these three countries also show the highest shares of establishments with less than 20 employees. The share of those working in companies with 500 or more employees is largest in the Netherlands and the UK (both 31%), followed by Finland (27%). In Spain only 16% of all establishments belong to this size category.

Table 5 Distribution over five establishment size categories and average establishment size in IT, by country

Establishment size	BE	FI	DE	HU	NL	PL	ES	SW	UK
Less than 20	22	25	29	31	19	28	35	26	22
20 - 100	26	27	29	22	26	29	28	29	25
100 - 500	27	21	19	25	23	25	20	23	23
500 - 1000	16	14	9	16	9	12	9	12	13
1000 and more	9	13	15	6	22	7	7	11	18
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Median head count	691	910	950	510	1315	496	485	840	1183

Note: Firm size is measured on a 10-point scale, ranging from a 1-person firm to a firm with more than 5,000 employees at the locality of the respondent. In order to approach reality, for this table the midpoints of the values have been taken.

6 Locations of the firm

The *WageIndicator* web-survey includes a question whether the worker's firm has more than one location, and if so, if this is located in the country at stake or abroad. For the purpose of this report, we define a Multinational Enterprise (MNE) as a company that has one or more locations abroad. Unfortunately, in Hungary this question was not operational in the web-survey in 2008 until week 21. Therefore, table 6 (next page) covers eight countries only.

Table 6 Distribution over location categories in IT, by country

	BE	FI	DE	NL	PL	ES	SW	UK
No	27	20	39	31	30	26	13	25
Yes, in 1 city / municipality	3	5	3	2	5	6	8	9
Yes, in 1 region	3	2	3	2	3	4		4
Yes, in 2 or more regions	11	18	7	11	9	12	15	9
Yes, throughout the country	8	8	11	8	17	10	4	5
Yes, throughout the country and abroad	39	40	33	39	28	40	43	39
Yes, but only abroad	8	6	4	6	7	2	16	8
Total	100	100	100	100	100	100	100	100
MNE median establishment size	897	1755	2245	2218	999	911	1258	2028
No MNE median establishment size	388	237	216	619	344	186	224	428
Med. MNE size: med. No MNE size	2.3	7.4	10.4	3.6	2.9	4.9	5.6	4.7

The share of workers that is employed in MNEs seems particularly high in the Swedish It sector (59%: the answers on *Yes, throughout the country and abroad* combined with those on *Yes, but only abroad),* but mind the small sample in Sweden. The shares in Belgium, Finland, the Netherlands and the UK are all in the 45-47% range, Spain scores 42%, and Germany and Poland close the ranks with 37% and 35% respectively.

If we compare the average sizes of their workforces (headcount), the MNE establishments prove to be much larger than those of the non-MNE firms in all countries, with Germany (10.4 times as large), Finland (7.4 times) and Sweden (5.6) as most extreme cases. The MNE establishments in Germany, the Netherlands and the UK are largest, but notably in the Netherlands the domestic establishments are comparatively large too. Domestic IT establishments are comparatively small on Finland, Germany, Spain, and Sweden.

7 Firm ownership

Besides location of the firm, we are also interested in firm ownership. Unfortunately, only four countries in the *WageIndicator* web-survey have put a question on ownership of the firm of the worker. Three categories are distinguished: firms that are fully domestic-owned, firms that are partly domestic and partly foreign-owned, and firms that are fully foreign-owned. In order to create an indicator for ownership, we grouped the latter two categories into one category ‘foreign owned’, and compared their employment share with that of the fully domestic-owned.

Table 7 Percentage of workers in foreign-owned firms and in MNEs in IT by country

	BE	NL	ES	SW
Total workers in foreign-owned company	28%	14%	11%	30%
Working in MNE, in foreign-owned company	85%	61%	65%	76%

Table 7 presents the results. The first row concentrates on those indicating to work in a foreign-owned IT company. It shows that in all four countries rather low shares are employed

in such companies. The second row concentrates on those working in finance and call centre MNEs. It indicates that in two countries majorities of MNE staff are working in foreign-owned MNEs: in Belgium even 85% (implying that only 15% works in Belgium-based MNEs), but in the other three countries it also concerns majorities. For Belgium these outcomes correspond with the very high 'transnationality index' (made up of FDI inward stocks, value added and employment in foreign affiliates) that UNCTAD attaches to this country, for 2005 the highest in the EU.[15] Belgium has also the no. 1 ranking in the KOF Index of Globalisation for 2007 and 2008, composed from indices of economic, social and political globalisation, with in 2008 Sweden in 3rd position, the UK in 4th, the Netherlands in 6th and Spain ranking 12th.[16]

8 Wages

8.1. Comparison of wage levels

A major issue in much research and debate on foreign direct investment and MNEs, and in our research as well, is that concerning the levels of wages paid in establishments of MNE versus those in domestic-owned firms. Table 8a presents the outcomes of the *WageIndicator* web-survey in this respect for all workers, for the MNEs as defined earlier (a company that has one or more locations abroad) versus domestic firms, and for seven countries. It reveals that in all countries the median gross hourly wage level in MNEs is higher than that in non-MNE firms, varying from 7% of the MNE-wage in the Netherlands to 30% in Poland.

Table 8a Median gross hourly wages of workers in MNE and non-MNE firms, in ITI by country (in Euros, current exchange rates av. 2007-1st half 2008), all

	BE	FI	DE	NL	PL	ES	UK
MNE	17.28	18.67	20.65	18.60	8.66	10.39	21.28
No MNE	14.34	15.40	15.64	17.32	6.06	8.66	16.11
Total	15.80	16.98	17.32	17.78	6.50	9.24	18.48
Difference ((MNE-non-MNE):MNE)	17.0%	17.5%	24.3%	6.9%	30.0%	16.7%	24.3%

We based ourselves on the *median* wages, but also calculated *average* wages (not shown). In all countries the overall averages are higher than the overall median values, especially in the UK (25%), Belgium (26%), and Spain (35%). This indicates the incidence of a long tail towards the top of the income distribution in the IT industry.

[15] UNCTAD (2008) *World Investment Report 2008*, 9.

[16] Axel Dreher, Noel Gaston, Pim Martens (2008) *Measuring Globalisation. Gauging its Consequences.* New York: Springer, 52. For 2008: KOF Swiss Economic Institute (2008) *press release January 8, 2008* (http://globalisation.kof.ethz.ch).

In Table 8b we present the same information but only for those working 20 hours or less per week. The median wage levels of these part-timers are lower than the median overall wages in Finland, Germany and the Netherlands, but not in Poland, Spain and the UK. It may well be that this small hours' category in IT includes employees on study leave.

The general picture that MNEs pay higher wages than domestic IT firms does not change for the category working 20 hours or less, though in Finland and the UK the differences with domestic firma become smaller and in Spain larger.

Table 8b Median gross hourly wages of workers in MNE and non-MNE firms, in IT by country (in Euros, current exchange rates av. 2007-1st half 2008), working week 20 hours or less

	BE	FI	DE	NL	PL	ES	UK
MNE	-	16.60	21.43	19.69	-	12.99	24.37
No MNE	-	15.88	15.95	17.82	7.22	9.24	20.53
Total	-	16.38	16.30	18.48	7.51	11.24	21.88
Difference ((MNE-non-MNE):MNE)	-	4.3%	25.6%	9.5%	-	28.9%	15.8%

Table 8c gives this wage information for those usually working more than 20 to 40 hours per week, except in Germany (36%) and Hungary (42%) representing majorities of the respective IT workforces (cf. Table 17). These median hourly wages are 2 – 10% lower than the overall medians. In all countries, MNEs pay higher wages for this category as well, though for Belgium, the Netherlands and the UK the differences are smaller than overall and though for the Netherlands the wage levels of MNEs and domestic firms are not large.

Table 8c Median gross hourly wages of workers in MNE and non-MNE firms, in IT by country (in Euros, current exchange rates av. 2007-1st half 2008), working week >20-40 hours

	BE	FI	DE	NL	PL	ES	UK
MNE	16.21	18.79	19.25	17.66	8.68	10.10	19.17
No MNE	13.91	14.93	13.87	16.50	5.76	8.16	15.43
Total	15.12	16.69	15.30	17.21	6.21	8.66	17.47
Difference ((MNE-non-MNE):MNE)	14.2%	20.5%	27.9%	6.6%	33.6%	19.2%	19.5%

Our calculations (not shown) of median hourly wages for those usually working over 40 hours / week reveal that the differences between wages in MNEs and in non-MNEs tend to diminish with a length of the working week of 40-48 hours for all countries except the UK (growth to a 38% gap), and then rising again for those with a working week over 48 hours to a 29% gap in Germany and a 33% gap in both Poland and Spain, while mitigating the UK gap (to 24%). In all seven countries median hourly wages in IT increase with more hours, also in domestic firms but much more so in MNEs.

Yet, it can be questioned to what extent size of operations matters, and whether other factors may be relevant as well. In order to find some clues, we control for size and compare median wages between MNEs and non-MNEs within three size categories: Table 8d.

Table 8d Median gross hourly wages of workers in MNE and non-MNE firms, in IT by country and firm size (in Euros, current exchange rates av. 2007-1st half 2008)

		BE	FI	DE	NL	PL	ES	UK
MNE	< 100 empl	15.73	15.93	17.63	17.32	7.94	10.02	20.17
MNE	100-500 empl	18.26	18.61	19.25	18.24	7.07	10.91	22.95
MNE	> 500 empl	19.05	19.35	23.09	19.63	9.86	12.06	21.44
MNE	Total	17.28	18.67	20.65	18.60	8.66	10.39	21.28
No MNE	< 100 empl	13.98	15.01	15.02	16.17	5.20	7.94	14.86
No MNE	100-500 empl	17.84	15.97	17.75	17.90	7.22	9.59	17.90
No MNE	> 500 empl	17.32	17.50	18.24	19.74	7.65	12.27	19.80
No MNE	Total	14.34	15.40	15.64	17.32	6.06	8.66	16.11
Total	< 100 empl	14.78	15.40	15.63	16.46	5.36	8.42	15.97
Total	100-500 empl	18.00	17.36	18.59	17.98	7.20	10.13	20.22
Total	> 500 empl	17.70	19.21	22.37	19.65	8.34	12.21	20.86
Total	Total	15.80	16.98	17.32	17.78	6.50	9.24	18.48
Difference ((MNE-non-MNE):MNE)	< 100 empl	11.1%	5.8%	14.8%	6.6%	34.5%	20.8%	26.3%
Difference ((MNE-non-MNE):MNE)	100-500 empl	2.3%	14.7%	7.8%	1.9%	-2.1%	12.1%	22.0%
Difference ((MNE-non-MNE):MNE)	> 500 empl	9.1%	9.6%	21.0%	-0.5%	22.4%	-1.6%	7.6%
Difference ((MNE-non-MNE):MNE)	Total	17.0%	17.5%	24.3%	6.9%	30.0%	16.7%	24.3%

From the table the picture emerges that in all seven countries there is a wage premium in IT MNEs in firms with less than 100 employees, that varies widely: from 6% in Finland to nearly 35% in Poland. The larger size categories also show predominantly a MNE wage premium, but on average that premium is not that high and moreover the picture is more mixed here. In Poland medium-sized IT MNEs have a wage disadvantage compared to domestic firms, a phenomenon that also showed up in finance and call centres. The evidence for the largest category is mixed: a high wage premium for MNEs in Poland again (also shown in finance and call centres) as well as in Germany, modest MNEs premiums in Belgium, Finland and the UK, and small wage disadvantages in the Netherlands and Spain. In the end four countries (Belgium, Finland, Germany and the UK) show up with a consistent pattern in favour of MNE wages, but the Netherlands, Poland and Spain do not. Our evidence clarifies that size is not always the dominant factor. In the Netherlands and Poland medium-sized domestic IT firms seem to have a rather strong position in the labour market, and this may also be the case for larger domestic Dutch and Spanish IT firms.

In our last comparison of wage levels we go into the gender pay gap, the difference between median male and female gross hourly wages (divided by the male wage) at the cost of women in MNEs respectively non-MNE firms: table 8e.

Table 8e Median gross hourly wages of workers in MNE and non-MNE firms, in IT by country and gender (in Euros, current exchange rates av. 2007-1st half 2008)

		BE	FI	DE	NL	PL	ES	UK
MNE	male	17.15	19.09	21.67	19.25	9.09	11.47	23.62
MNE	female	19.05	17.41	18.54	15.85	5.77	8.66	18.33
MNE	difference ((m-f):m)	-11.1%	8.8%	14.4%	17.7%	36.5%	24.5%	22.4%
No MNE	male	14.35	15.96	16.74	18.10	6.50	8.84	16.43
No MNE	female	13.93	14.25	12.99	15.01	4.33	7.45	15.01
No MNE	difference ((m-f):m)	2.9%	10.7%	22.4%	17.1%	33.3%	15.7%	8.5%
Total	male	15.19	17.64	18.48	18.52	7.28	9.86	19.80
Total	female	15.88	15.98	14.43	15.40	4.62	7.89	16.63
Total	difference ((m-f):m)	-4.5%	9.4%	21.9%	16.9%	36.5%	20.0%	16.1%

Only cells with more than 8 observations are included

The IT MNEs show a considerable gender pay gap in six of seven countries, from 9% in Finland to even over 36% in Poland. Belgium is the exception with a negative gap i.e. a wage advantage for women of just 4%, mainly caused by a large negative gap in medium-sized and large MNEs. In four countries, the Netherlands, Poland, Spain and the UK the gap is larger in MNEs than in domestic firms, from less than 1%-point in the Netherlands to 14%-pts in the UK. A breakdown of male and female wages by firm size (not shown) reveals that in five countries –Belgium, Finland, Germany, the Netherlands and Spain-- the largest gap has to be found in small IT firms, with in all five about the same gaps showing up in MNEs and domestic firms. In Poland the gaps in small and medium-sized firms are with both 33% about equal, with the largest gaps in MNEs. In the UK the gap is largest in the medium-sized firms, with a large wage difference in MNEs and a small distance in domestic firms.

So far our results seem to be in line with the majority of empirical studies on the subject, that have established that MNEs pay higher wages than domestic firms for comparable jobs, also in developed countries, though with some reservations: investments of these MNEs or cross-border take-overs mostly also contribute to wage inequality; positive effects on average wages may be short-term, and for EU member states recent studies anyway find rather small individual wage premia.[17] The mainstream reasoning is that MNEs have ample opportunities

[17] It has to be noted that most evidence on the effects of FDI on host countries relates to manufacturing and to a lesser extent to mining, and much less to services like IT; this also applies to wage effects. Cf. in general: Robert E. Lipsey (2002) *Host and home country effects of FDI.* Cambridge, MA: National Bureau of Economic Research, NBER Working Paper 9669; OECD (2008) Policy Brief. The Social Impact of Foreign Direct Investment, *OECD Observer*, July; Paolo Figini, Holger Görg (2006) *Does Foreign Investment Affect Wage Inequality? An Empirical Investigation.* Bonn: IZA. Discussion Paper No. 2336; for the UK: Karl Taylor, Nigel Driffield (2005) Wage inequality and the role of multinationals: evidence from UK panel data, *Labour Economics*, 12(2): 223-249; Alexander Hijzen (2007) International Outsourcing, Technological Change, and Wage Inequality, *Review of International Economics*, 15(1): 188-205; for Germany: Ingo Geishecker, Holger Görg (2004) *International outsourcing and wages: Winners and losers.* DIW Berlin: paper; for

to create 'high quality' jobs, given their size, their level of production technology, their better management techniques, their HRM abilities, and their more intensive use of intermediate products. Indeed there seems to be a tendency that the so-called wage premium that they tend to pay is higher for high-skilled staff.[18]

We already compared wages in MNEs and non-MNEs taking into account working hours, firm size and gender. Moreover, to make a more "honest" comparison one needs to take into account the educational levels and tenure (years of work experience) of the workforce in MNEs respectively non-MNEs, as these two factors mostly exert the largest influence on wage levels. In order to undertake a comparison that includes the relevant factors, we carried out a regression analysis to control for the influence of five factors: work experience, gender, working hours, education, and firm size. We did so per country: Table 8f.

Table 8f Results of regression analysis in IT by country

	BE		FI		DE		NL		PL		ES		UK	
Constant	2.556	***	2.128	***	1.979	***	1.731	***	1.974	***	1.326	***	2.119	***
Work experience	0.014		0.030	***	0.023	***	0.048	***	0.073	***	0.037	***	0.054	***
Work experience SQ	0.000		-0.001	***	0.000		-0.001	***	-0.002	***	-0.001	**	-0.001	***
Female	0.008		-0.110	**	-0.129	***	-0.177		-0.403	***	-0.146	***	-0.159	*
Working hours p.w. > 40	-0.007		0.102		0.065		0.043		-0.008		0.069		0.060	
Educ (1=low,…,5=high)	0.126	***	0.083	***	0.119	***	0.147		0.175	***	0.157	***	0.030	
MNE	-0.037		0.073		0.172	***	0.039		0.288	***	0.117	**	0.179	**
Company > 100 empl.	0.186	*	0.100	**	0.096	*	0.065		0.124		0.119	**	0.119	
N	613		644		1278		2869		349		1074		654	
R square	0.047		0. 162		0.164		0.208		0.270		0.135		0.093	

The results of our analysis show that in five of seven countries there is a wage premium for working in MNEs if controlled for the five factors. While for the Netherlands the influence is significant but rather weak (see row 'MNE'), there are no significant differences for Belgium and Finland. The influence of working in a MNE is highest for Poland, followed by the UK, Germany and Spain.

If controlled this way, Belgium and Finland do not show wage premia for the other four industries as well, while the UK in three industries does not show wage premia and in two

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[18] Denmark: Nikolaj Malchow-Møller, James R. Markusen, Bertel Schjerning (2007) *Foreign Firms, Domestic Workers.* Cambridge, MA: National Bureau of Economic Research, NBER Working Paper 13001 (small positive effect); for Finland: Kristiina Huttunen (2007) The Effect of Foreign Acquisition on Employment and Wages: Evidence from Finnish Establishments, *The Review of Economics and Statistics*, 89(3): 497-509 (small positive effect); for Hungary: John S. Earle, Almos Telegdy (2007) *Ownership and Wages: Estimating Public-Private and Foreign-Domestic Differentials with LEED from Hungary, 1986-2003.* Cambridge, MA: National Bureau of Economic Research, NBER Working Paper 12997. By exception, for Sweden recent research found lower individual wages in foreign firms relative to their counterparts in domestic firms: Fredrik Heyman, Fredrik Sjöholm, Patrik Gustavsson Tingvall (2007) Is there really a foreign ownership wage premium? Evidence from matched employer – employee data, *Journal of International Economics,* 73: 355-376. Taylor & Driffield, *op. cit*.; Hijzen, *op. cit.;* not confirmed by Sourafel Girma, Holger Görg (2007) Evaluating the foreign ownership wage premium using a differences-in-differences matching approach, *Journal of International Economics,* 72(1): 97-112. While in the 1990s related to FDI the position of unskilled labour in highly developed countries like the UK and Sweden was already deteriorating, in the last decade this trend became visible in Central and East European Countries (CEECs) too, notably in Hungary, Poland and the Czech Republic. Cf. Peter Egger, Robert Stehrer (2003) International Outsourcing and the Skill-specific Wage Bill in Eastern Europe, *The World Economy*, 26(1): 61-72; Rosario Crino (2007) *Offshoring, Multinationals and the Labour Market: A Review of the Empirical Literature*. Milano: CESPRI, Working Paper 196.

shows rather weak influences. Germany is the only country clearly showing a wage premium for all five industries, followed by the Netherlands with three of five, Poland (two industries) and Spain with one industry.

8.2. Overtime compensation

The *WageIndicator* web-survey includes questions about overtime compensation in pay, in time, or no overtime compensation at all. Here we compare workers in MNE and non-MNE firms with regard to the percentages receiving overtime compensation in pay.

Table 9 shows that in IT receiving overtime in pay does not reveal a common pattern across countries. Whereas workers in MNEs in Belgium, Finland and Poland more often receive overtime compensation in pay, the reverse holds for the Germany, the Netherlands, Spain and the UK. The differences, however, between the two groups are very small.

Table 9 Percentage of workers receiving overtime compensation in pay in MNE and non-MNE firms in IT, by country

	BE	FI	DE	NL	PL	ES	UK
MNE	12%	33%	9%	15%	31%	16%	27%
No MNE	7%	26%	10%	17%	30%	18%	28%
Total	9%	30%	10%	16%	31%	17%	27%

8.3. Performance-based pay

The *WageIndicato*r includes a number of questions on the incidence of performance-based pay. Here, we define performance-based pay as any bonus based on individual, group, team or departmental performance in addition to monthly payments. It also includes any annual performance allowance or commission, but it does not include skill bonuses or labour market shortage bonuses.

Table 10 reveals that in almost all countries workers in IT MNE's more often receive performance-based pay compared to workers in non-MNEs. The exceptions are Finland and Sweden. Belgium and Sweden show larges mutual differences: Belgium in favour of pay in MNEs, Sweden in favour of that in domestic companies.

Table 10 Percentage of workers receiving performance-based pay in MNE and non-MNE firms in IT, by country

	BE	FI	DE	HU	NL	PL	ES	SW	UK
MNE	19%	9%	13%	-	16%	-	12%	17%	7%
No MNE	8%	11%	11%	-	10%	-	11%	29%	7%
Total	13%	10%	12%	-	13%	-	11%	22%	7%

9. Job quality and working conditions

The *WageIndicator* web-survey includes several questions about job quality and working conditions. We will treat six issues here: working in dangerous conditions; the incidence of work-related stress; whether the job level matches the educational level of the worker; internal promotion (opportunities for careering); the incidence of reorganizations, and finally job satisfaction and job security.

We will first treat the incidence of working in dangerous conditions. As the related question was only asked in the *WageIndicator* survey in four countries, we have to limit ourselves to these four: Belgium, the Netherlands, Poland, and Spain. Table 11 shows the average scores, based on answers ranging from never (=1) to daily working in dangerous conditions (=5). The outcomes indicate that working conditions are perceived as slightly more dangerous in MNE firms in Belgium and slightly less in MNEs in Poland, while the results for the Netherlands and Spain show no differences.

Table 11 Average score on working in dangerous conditions, ranked on a scale from 1 = Never to 5=Daily, in MNE and non-MNE firms in IT by country

	BE	NL	PL	ES
MNE	1.3	1.3	1.3	1.3
No MNE	1.2	1.3	1.4	1.3
Total	1.2	1.3	1.3	1.3

It has to be noted that the figures on the (perceived) incidence of dangerous work in the IT industry are on average quite low, especially if compared to those for transport and telecom and for metal and electronics manufacturing.

Second, we go into the incidence of four indicators of work-related stress. Here we have got information for six countries: Belgium, Germany, Hungary, the Netherlands, Poland, and Spain. On all four indicators, the respondents are asked to give their opinions on a five-point scale, ranging from never (=1) to daily (1=5), or from fully disagree (=1) to fully agree (=5).
Table 12 (next page) clarifies that for the first indicator, 'finds job stressful', the average scores are higher for IT MNEs in five out of six countries for which we have adequate information; in Germany the scores are equal for both categories. The outcomes concerning 'work physically exhausting' are mixed: four countries show higher scores in MNEs, two (Belgium and Poland) lower. This result is somewhat surprising, as at this point in the other industries higher scores in non-MNEs prevail. For the third indicator, 'work mentally exhausting', IT results are in line with those of the other industries: in four of six countries the scores in MNEs are higher, in Belgium and Spain they are equal. For 'finds job boring' the

outcomes are nearly the same: higher scores for MNEs in Germany, Poland and Spain, and equal scores in Belgium, Hungary and the Netherlands.

Table 12 Average score on four work-stress related issues, all ranked on a scale from 1 = Never to 5=Daily in MNE and non-MNE firms in IT by country

		BE	DE	HU	NL	PL	ES
MNE	Finds job stressful	3.5	4.0	3.8	3.4	3.3	3.5
No MNE	Finds job stressful	3.4	4.0	3.7	3.3	3.1	3.3
Total	Finds job stressful	3.5	4.0	3.8	3.4	3.2	3.4
MNE	Work physically exhausting	2.6	3.0	2.3	2.3	2.6	3.0
No MNE	Work physically exhausting	2.7	1.0	2.2	2.2	2.7	2.9
Total	Work physically exhausting	2.7	2.3	2.3	2.3	2.7	2.9
MNE	Work mentally exhausting	3.4	4.0	3.0	3.3	3.3	3.9
No MNE	Work mentally exhausting	3.4	3.0	2.9	3.2	3.2	3.9
Total	Work mentally exhausting	3.4	3.7	2.9	3.2	3.2	3.9
MNE	Finds job boring	2.2	3.5	2.2	2.3	2.5	2.9
No MNE	Finds job boring	2.2	2.0	2.2	2.3	2.2	2.8
Total	Finds job boring	2.2	3.0	2.2	2.3	2.3	2.9

Summarizing, in a majority of comparisons (15 of 24) the stress-related scores are higher in MNEs than in non-MNEs, though the differences remain small. Germany shows the largest differences, but the trend is also clear for Hungary, the Netherlands, Poland and Spain, with three out of four scores indicating higher stress levels in MNEs; the picture for Belgium is mixed. Thus, our results support the assumption that inward FDI i.e. working for a MNE generates more stress, though not quite strong.

Our third job quality issue is that concerning the possible gap between the level of the job performed and the educational level of a worker. Such a gap can indicate whether workers are over-skilled or overeducated (which is most likely) or under-skilled or undereducated (which mostly may be the case for smaller groups). If continued, both situations of mismatch can well be detrimental for workers' mental health, and over-skilling is generally also rather disadvantageous for one's earnings.[19] Here we have data available for five countries.

Table 13 Percentage of workers reporting that job level matches educational level, in MNE and non-MNE firms in IT by country

		BE	NL	PL	ES	SW
MNE	Job level matches education level	79%	71%	98%	64%	77%
No MNE	Job level matches education level	78%	69%	96%	65%	79%
Total	Job level matches education level	79%	70%	97%	64%	78%

Table 13 reveals for four countries in IT quite high 'match'-levels if compared with the other four industries, between 64% (Spain) and 79% (Belgium), with Poland as an exception with

[19] Cf. Joop Hartog (2000) Over-education and earnings: where are we, where should we go?, *Economics of Education Review*, 19: 131-147.

the very high score of 97%. In Belgium, the Netherlands and Poland (but mind the small numbers of respondents!) the scores in MNEs are slightly higher, but in Spain and Sweden slightly lower.

The fourth job quality issue concerns internal promotion. Table 14 shows that in all six countries for which we have adequate information, the share of those reporting to have been promoted in the current firm is higher in MNEs than in non-MNE firms. The differences vary from 5%-points in Spain till 14%-pts in Belgium and Germany and even 19%-pts in the UK, suggesting that IT MNEs in these countries are offering better career opportunities. The larger scale of MNE establishments may well favour such opportunities.

Table 14 Percentage of workers reporting to have been promoted in the current firm, in MNE and non-MNE firms in IT by country

		BE	FI	DE	NL	PL	ES	UK
MNE	Has been promoted in current firm	53%	55%	33%	54%	56%	41%	56%
No MNE	Has been promoted in current firm	39%	44%	19%	42%	47%	36%	37%
Total	Has been promoted in current firm	46%	49%	24%	48%	48%	38%	50%

A minor but striking observation is that the share of workers stating to have been promoted in the current firm is smaller in Germany than in all other countries. This applies especially for non-MNEs, where 19% is low by any means.

Our fifth job quality issue regards experiences with the incidence of reorganisations and expectations on this subject. The two relevant questions in the *WageIndicator* survey were whether the organization where the respondent works faced a reorganisation in the last 12 months, and whether he/she expects a reorganisation to happen in the next 12 month: Table 15.

Table 15 Percentage reporting that organisation faced reorganisation, and percentage reporting to expect a reorganisation in the next 12 months, in MNE and non-MNE firms in IT by country

		BE	DE	NL	PL	SW	UK
MNE	Organisation faced reorganisation	41%	50%	43%	59%		61%
No MNE	Organisation faced reorganisation	29%	32%	26%	38%		39%
Total	Organisation faced reorganisation	35%	38%	33%	47%		50%
MNE	Reorganisation exp. in 12 months	58%	67%		68%	75%	73%
No MNE	Reorganisation exp. in 12 months	48%	46%		62%	54%	56%
Total	Reorganisation exp. in 12 months	53%	54%		64%	66%	64%

The upper half of table 15 shows the experiences and indicates that in the five countries with adequate information the MNE IT organisations more often faced reorganizations in the past year; the differences with domestic firms are large, in the 12%-points (Belgium) to 22%-pts (UK) range. The outcomes presented in the lower half of the table reveal that the expectations concerning coming reorganizations correspond by and large with experiences

in the four countries for which this can be concluded, be it that more often reorganizations are expected than actually took place last year. Again, the shares expecting reorganizations in the year to come are univocally higher in MNEs.

Our last issue related to job quality is job satisfaction (although of course job satisfaction is wider than job quality and is also related to wages and other aspects of working life). The respondents were asked to give their opinions on a five-point scale, ranging from 1=Not satisfied to 5= Satisfied. The same holds for the question whether one worries about his/her job security. Here the opinions range from 1=Wholly disagree to 5=Wholly agree.
Tabel 16a reveals that across the eight countries for which the data enables comparisons between the categories of firms, the job satisfaction scores hardly differ between MNEs and non-MNEs. In four countries they are at par, the scores for MNEs are somewhat higher in Poland and Spain and slightly lower in Finland and the Netherlands. We can add the in each country the overall scores in IT are the highest of the five industries under scrutiny.

Table 16a Average score on job satisfaction, ranging from 1=Not satisfied to 5= Satisfied, in MNE and non-MNE firms in IT by country

		BE	FI	DE	NL	PL	ES	SW	UK
MNE	Satisfaction with job	3.6	3.4	3.4	3.5	3.7	3.2	3.5	3.3
No MNE	Satisfaction with job	3.6	3.5	3.4	3.6	3.5	3.0	3.5	3.3
Total	Satisfaction with job	3.6	3.4	3.4	3.6	3.6	3.1	3.5	3.3

We can present data for job security only for three countries, Germany, the Netherlands and Poland. Table 16b indicates that differences in feelings of job insecurity between MNEs than in non-MNEs hardly show up, be it that in Poland such feelings are somewhat lower in MNEs. It can also be noted that across the five industries in the three countries the IT industry consistently shows the lowest insecurity scores.

Table 16b Average score on job security, ranging from 1= Wholly disagree with worries to 5= Wholly agree with worries, in MNE and non-MNE firms in IT by country

		DE	NL	PL
MNE	Security in job	2.4	2.1	2.2
No MNE	Security in job	2.4	2.1	2.4
Total	Security in job	2.4	2.1	2.3

It is interesting to observe, based on the results presented above, possible relations between three aspects: the incidence of reorganisations, job insecurity and job satisfaction. Even if job insecurity in MNEs is enlarged through more reorganisations, that insecurity may not be higher than in domestic firms and also obviously does not automatically translate into lower

levels of job satisfaction. Other aspects of working in a MNE, like the comparatively high wage levels and/or better career prospects, may form compensating elements.[20]

10. Working hours

Under this heading we will discuss three working hours' issues: the length of the working week; the incidence of overtime, and the incidence of irregular hours (including shift work). Overtime is defined as usually working more hours than agreed. It has to be noted that the survey question about shift work was not asked during the full one-and-a-half year of the survey period.

Table 17 reveals that the length of the average usual working week varies across countries, from overall 35.1 hours in Finland to 40.7 hours in Poland (Hungary, for which country we cannot split data between MNE and non-MNEs, has the same average working week in IT). In seven countries the average working week is longer in MNEs, sometimes considerably: in the UK an average 1.7 hours longer compared to domestic firms, in Germany 1.6 hours, and in the Netherlands and Poland both 1.3 hours. Except for Finland and Sweden, at least one-third of all respondents ticks that they usually work over 40 hours per week.

Table 17 Distribution over three categories of usual working hours and average usual working hours in MNE and non-MNE firms in IT by country

		BE	FI	DE	HU	NL	PL	ES	SW	UK
MNE	0-20 hrs (col %)	6	11	10		9	2	10	1	11
MNE	>20-40 hrs (col %)	53	78	32		54	56	52	92	50
MNE	>40-48 hrs (col %)	27	7	39		22	29	24	4	24
MNE	>48-80 hrs (col %)	14	4	20		15	14	14	3	16
MNE	Total (col %)	100	100	100		100	100	100	100	100
No MNE	0-20 hrs (col %)	5	12	12		10	6	9		12
No MNE	>20-40 hrs (col %)	58	79	39		60	54	62	100	59
No MNE	>40-48 hrs (col %)	29	7	37		18	25	19		19
No MNE	>48-80 hrs (col %)	7	2	13		12	15	10		10
No MNE	Total (col %)	100	100	100		100	100	100	100	100
Total	0-20 hrs (col %)	5	12	11	6	10	7	10	1	11
Total	>20-40 hrs (col %)	57	78	36	42	56	54	57	95	55
Total	>40-48 hrs (col %)	27	7	37	39	19	25	21	2	21
Total	>48-80 hrs (col %)	11	3	16	13	14	14	12	2	13
Total	Total (col %)	100	100	100	100	100	100	100	100	100
MNE	Usual working hours	40.0	35.5	40.5		39.0	42.2	38.8	39.6	38.4
No MNE	Usual working hours	39.4	34.8	38.9		37.7	40.9	38.2	39.6	36.7
Total	Usual working hours	39.8	35.1	39.7	40.7	38.7	40.7	38.3	39.6	37.7

[20] Not often discussed as it concerns the relationship between insecurity and job satisfaction. Cf. Kenneth Scheve, Matthew J. Slaughter (2004) Economic Insecurity and the Globalization of Production, *American Journal of Political Science*, 48(4): 662-674.

Everywhere the incidence of these long working weeks is higher in MNEs, varying from 5%-points (Belgium) to 11%-pts (UK). Again with the exception of the two Scandinavian countries, the incidence of very long working weeks (usually over 48 hours) is considerable in the industry: in the seven other countries it is in the 11-16% range. This incidence is in six of these countries clearly –differences of 3-7%-pts— higher in MNEs, except in Poland where it is slightly higher in non-MNEs.

The answers concerning overtime, grouped in Table 18, deliver indications in the same direction as those concerning the length of the working week. Large majorities of the IT workers have agreed working hours. Yet, contrary to the results for some other industries this share is mostly i.e. in six countries higher in non-MNEs. Only in Finland the MNEs show a higher score, while in Germany there is no difference.

Table 18 ***Percentage having agreed working hours with employer, of these the percentage working usually more hours than agreed, and percentage working shifts or irregular hours, in MNE and non-MNE firms in ITby country***

		BE	FI	DE	HU	NL	PL	ES	SW	UK
MNE	Working hours agreed	84%	97%	96%		97%	91%	86%	91%	95%
No MNE	Working hours agreed	89%	96%	96%		98%	95%	88%	93%	96%
Total	Working hours agreed	85%	96%	96%	97%	97%	94%	87%	91%	96%
MNE	Usual more working hours	59%	26%	71%		49%	34%	36%	31%	55%
No MNE	Usual more working hours	55%	22%	61%		44%	36%	27%	24%	43%
Total	Usual more working hours	58%	24%	64%	41%	46%	34%	31%	28%	48%
MNE	Shifts or irregular hours	11%	-	-		8%	-	6%	9%	-
No MNE	Shifts or irregular hours	11%	-	-		7%	-	5%	8%	-
Total	Shifts or irregular hours	15%	-	-	34%	7%	-	6%	8%	-

In a number of countries the percentages usually working more hours than those agreed are high. Overall, Germany scores a disquieting 64%, while the outcomes for Belgium, the Netherlands and the UK are also high: in the 46-58% range. In seven of eight countries for which we have sufficient data, the incidence of overtime is higher in MNEs than in non-MNEs, in Germany, Spain and the UK even substantially higher. As with the incidence of long working weeks, Poland shows a reverse picture.

In only four countries we gathered information on shift or irregular work, to be compared between MNEs and non-MNEs. In three countries, the Netherlands, Spain and Sweden, the incidence of such work was slightly higher in MNEs than in non-MNEs, in Belgium it was the other way around.

11. Training

Training, or the acquisition of human capital, can be related to the MNE wage premium issue. One explanation for the fact that MNEs pay higher wages than domestic firms may be that, though starting wages in MNEs may not be higher than in domestic firms, workers in MNEs receive more and/or more efficient on-the-job training and experience higher wage growth. There is some empirical support for such an explanation of firm-specific human capital acquisition, be it that the wage effect of training is most likely stronger in developing than in developed countries.[21]

We will discuss three training-related issues here. The first relates to the incidence and duration of employer-paid or provided training, and is based on the question: "Over the past 12 months, how much training have you received, paid for or provided by your *employer*, in order to improve your skills?". The second issue relates to the incidence and duration of self-paid training, based on the question: "Over the past 12 months, how much training have you paid for *yourself* in order to improve your skills?". The third issue is the assessment of the importance that the respondents attach to training, which goes back to the question: "How often do you find training for your job would be worthwhile?". The latter is measured on a five-point scale, ranging from 1=Never to 5=Daily.

As Table 19 (next page) shows, in all seven countries for which we gathered reliable data, the incidence of employer-received/paid training is higher in MNEs than in non-MNEs, sometimes considerably: 23%-points in Germany, 14%-pts in Spain and 12%-pts in the UK. Concerning duration (number of training days received in last year) the results are also univocally in favour of the MNEs. The ratios MNEs : non-MNEs are more or less similar for both yardsticks. The general level of provisions is high compared to other industries. These results seem to confirm the evidence concerning on-the-job training we just cited.
The incidence and duration of self-paid training in the IT industry is rather closely related to those of employer-provided training, as the provisions for the latter obviously mitigate the need for self-paid training, notably in MNEs. Only in Sweden the incidence and the duration (though quite short) of this type of training is higher in MNEs. These results seem to confirm the evidence concerning on-the-job training we just cited.

[21] Holger Görg , Eric Strobl, Frank Walsh (2007) Why Do Foreign-Owned Firms Pay More? The Role of On-the-Job Training, *Review of World Economics*, 143(3): 464-482; OECD/ILO, 2008, *op. cit.*

The respondents' assessments of the importance of training are totally at par in MNEs and non-MNEs in all four countries for which we have data available (Belgium, the Netherlands, Poland, and Spain). In most other industries this assessment was more positive in MNEs.

Table 19 Incidence and duration of employer-received and self-paid training and opinion over training, ranging from 1=Never to 5=Daily in M&E, in MNE and non-MNE firms in IT by country

		BE	DE	HU	NL	PL	ES	SW	UK
MNE	Received training from employer (Y/N)	74%	71%		77%	77%	51%	53%	67%
No MNE	Received training from employer (Y/N)	67%	48%		64%	65%	24%	53%	52%
Total	Received training from employer (Y/N)	70%	57%	61%	69%	68%	31%	53%	57%
MNE	No of days training received from employer in last year	6.7	5.3		8.8	7.4	6.6	4.9	8.5
No MNE	No of days training received from employer in last year	5.4	2.9		6.6	5.9	5.5	4.3	7.9
Total	No of days training received from employer in last year	6.0	3.8	10.6	7.6	6.0	5.9	4.7	8.2
MNE	Self-paid training (Y/N)	18%	15%		20%	38%	26%	21%	28%
No MNE	Self-paid training (Y/N)	25%	15%		23%	44%	28%	13%	29%
Total	Self-paid training (Y/N)	24%	16%	29%	22%	40%	27%	18%	29%
MNE	No of days self-paid training in last year	3.4	2.8		2.4	5.6	8.7	1.4	4.6
No MNE	No of days self-paid training in last year	3.7	4.3		2.8	6.6	9.8	0.9	6.1
Total	No of days self-paid training in last year	3.7	4.0	13.3	2.8	5.6	9.6	1.2	5.5
MNE	Finds training would be worthwhile	3.4			3.0	3.5	3.4		
No MNE	Finds training would be worthwhile	3.4			3.0	3.5	3.4		
Total	Finds training would be worthwhile	3.4			3.0	3.5	3.4		

12. Industrial relations

Our research covers three core issues in industrial relations. The first is the incidence of trade union membership (union density). The second relates to whether the respondent is covered by a collective bargaining agreement (collective bargaining coverage). The third concerns the incidence of workplace employee representation (works council, staff council, trade union representatives, shop stewards, or alike).

The results, presented in the upper third of Table 20 (next page), concerning trade union membership show that union density is slightly higher in MNEs than in non-MNE firms in five of seven countries, and at par in the other two, Belgium and the Netherlands. Spain reveals the largest difference: 5%-points in favour of the MNEs. The figures indicate that there is much room for improvement in union organisation in at least five countries.

Table 20 Percentage covered by a collective agreement, with employee representation and member of a trade union, in MNE and non-MNE firms in IT by country

		BE	FI	DE	HU	NL	PL	ES	UK
MNE	Member of trade union	27%	54%	7%		10%	3%	14%	9%
No MNE	Member of trade union	27%	52%	4%		10%	2%	9%	7%
Total	Member of trade union	27%	53%	5%	0%	10%	2%	11%	8%
MNE	Covered by collective agreement	73%		26%		41%		74%	9%
No MNE	Covered by collective agreement	55%		10%		25%		57%	13%
Total	Covered by collective agreement	64%		16%	24%	33%		64%	11%
MNE	In workplace empl representation	62%		61%		78%	23%	64%	24%
No MNE	In workplace empl representation	39%		21%		40%	26%	31%	14%
Total	In workplace empl representation	50%		36%	20%	57%	25%	45%	19%

The outcomes concerning collective bargaining coverage and workplace employee representation, covered by Table 20 too, are remarkable. In four of five countries for which we are able to analyze and compare collective bargaining coverage, IT MNEs show a much higher coverage than non-MNEs: 16-18%-points. A major exception turns out to be the UK, where the low figure for MNEs is even lower than the already low one for non-MNEs. Yet, it has to be added that bargaining coverage in German domestic IT firms is also worrisome low.

For workplace employee representation the results, presented in the lower third of the table, are in favour of the MNEs in five of six countries, with very wide differences (10 to 40%-points). Poland is the outlier here. With some rare exceptions, the other industries show the same picture. Most likely the larger average scale of MNE establishments works out favourably for both collective bargaining coverage and workplace employee representation.

13. Conclusions

Concerning FDI and internationalization in IT, the following picture emerges:

- To the outside world the IT MNEs included in our database show a low level of diversification, owning on average 1.3 subsidiaries.
- The IT MNEs are highly internationalized: subsidiaries have on average 5.4 establishments, implying that an average subsidiary is involved in between five to six countries out of 12.
- The USA, France and the UK prevail as home countries of IT MNEs; 32% of IT MNE establishments in the 12 countries are owned by MNEs from outside the EU.

Concerning the social effects of FDI in IT, our main conclusions are:

- In six of seven countries hourly wages in MNEs are higher than in domestic IT firms, though these premiums vary widely (7 to 30%). This picture remains intact for the various working hours' categories.
- In Poland medium-sized non-MNE IT firms and in the Netherlands and Spain large domestic IT companies pay slightly more than MNEs. They seem to have a strong position in the labour market.
- In six of seven countries the IT MNEs show a considerable gender pay gap, from 9% in Finland to even over 36% in Poland. Belgium is the exception with a negative gap.
- Based on a regression analysis in which we controlled for experience, gender, working hours, education, and firm size results, we show that in five of seven countries there is a wage premium for working in MNEs if controlled for the five factors. While for the Netherlands the influence is significant but rather weak, there are no significant differences for Belgium and Finland. The influence of working in a MNE is highest for Poland, followed by the UK, Germany and Spain.
- Unlike the other four industries, MNEs in IT do not systematically pay less overtime compensation, though except in Poland workers in IT MNEs more often perform more working hours than agreed.
- Scores on work-stress related issues are higher in IT MNEs than in non-MNEs in a majority of cases though the differences remain small.
- In all seven countries workers in MNEs report to have been promoted more often than in domestic firms.
- In all five countries for which we have data workers report that they faced reorganizations in the past year more often in MNEs; the shares of workers expecting reorganizations in the year to come are also much higher in MNEs.
- In the IT industry job satisfaction scores hardly differ between MNEs and domestic firms.
- In seven of eight countries, the average usual working week is longer in MNEs, in Poland the averages are at par.
- In six of seven countries, the incidence of employer-received/paid training is higher in MNEs than in non-MNEs; concerning the number of training days, the results are univocally in favour of MNEs.
- In five of seven countries union density is higher in MNEs, while in Belgium and the Netherlands it is at par.
- In four of five countries for which we have adequate data collective bargaining coverage is higher in MNEs; the UK is the exception here.

- In five of six countries with adequate data the incidence of workplace representation is much higher in MNEs, with Poland as the exception.

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ANNEX. TABLES

Table 21 40 largest (total sales 2007) and most internationalized (threshold: in 3 of 12 countries) MNEs in 12 countries in Information Technology, March 2008

MNE	subs	NACE	BE	DK	FI	FR	DE	HU	IT	NL	PL	ES	SW	UK	Tot.
Accenture (US)	1	7200	x	x	x	x	x	x	x	x	x	x	x	x	12
Atos Origin	1	7200	x			**x**	x			x					4
Avanquest Gr.	1	7200	x			**x**			x			x			4
Basware	1	7200		x	**x**		x			x				x	5
Capgemini	2	7200	x	x	x	**x**	x	x	x	x	x	x	x	x	12
CSC (US)	1	7200	x	x	x	x	x		x	x		x	x	x	10
Dicom Gr. (Kofax)	2	7200	x	x	x	x	x	x	x	x	x	x	x	**x**	12
Econocom	1	7200	**x**			x	x		x	x				x	6
EMC2 (US)	1	7200	x	x	x	x	x	x	x	x	x	x	x	x	12
Exact Holding	1	7200	x	x	x	x	x	x	x	**x**	x	x	x	x	12
F-Secure	1	7200			**x**	x	x		x				x	x	6
Fujitsu Consult. (JP)	1	7200	x	x	x	x	x	x	x	x	x	x	x	x	12
GFI Informatique	1	7200	x			**x**	x		x			x			5
GL Trade	1	7200	x			**x**	x		x	x		x		x	7
Groupe Bull	1	7200	x	x	x	**x**	x	x	x	x	x	x	x	x	12
IFS Industrial & Fin.	1	7200		x	x	x	x	x	x	x	x	x	**x**	x	11
ILOG	1	7200				**x**	x					x		x	4
Infosys (IN)	1	7200	x	x	x	x	x	x	x	x	x	x	x	x	12
Integralis	1	7200				x	**x**						x	x	4
Itella	2	7200		x	**x**		x					x			4
Logica	2	7200	x	x	x	x	x		x	x	x	x	x	**x**	11
Microsoft (US)	1	7200	x	x	x	x	x	x	x	x	x	x	x	x	12
Misys Plc	4	7200	x			x	x	x	x	x	x	x		**x**	9
Nemetschek Group	4	7200	x		x	x	**x**		x	x	x	x		x	9
Oracle (US)	1	7200	x	x	x	x	x	x	x	x	x	x	x	x	12
Qurius	1	7200	x	x			x		x	**x**		x	x	x	8
Sage Group	1	7200				x	x					x		**x**	4
SAS Institute (US)	1	7200	x	x	x	x	x	x	x	x	x	x	x	x	12
SimCorp	1	7200	x	**x**			x							x	4
SAP	2	7200	x	x	x	x	**x**	x	x	x	x	x	x	x	12
Software AG	2	7200	x	x	x	x	**x**	x	x	x	x	x	x	x	12
Sophos	1	7200				x	x		x			x		**x**	5
Sopra Groupe	2	7200	x	x		**x**	x		x			x		x	7
Sylis SA	1	7200	x			**x**				x				x	4
Unisys Corp (US)	1	7200	x	x	x	x	x	x	x	x	x	x	x	x	12
Unit 4 Agresso	2	7200	x	x		x	x	x		**x**		x	x	x	9
Visma (NO)	1	7200		x	x								x	x	4
Yahoo (US)	1	9999	x	x	x	x	x		x	x		x	x	x	10
Google (US)	2	9999		x		x			x	x	x	x		x	8
Gores Technology	3	67121	x			x								**x**	3
	57		**BE**	**DK**	**FI**	**FR**	**DE**	**HU**	**IT**	**NL**	**PL**	**ES**	**SW**	**UK**	
No. comp/home c.			1	1	3	9	4	0	0	3	0	0	1	6	28
No. comp/home c.		other													12
Tot. companies															**40**
No. subsidiaries															**57**
No. establishm./1			30	26	22	35	35	17	28	27	19	29	21	35	**324**
No. establishm./2			34	27	23	38	39	17	29	30	20	30	22	40	**349**

Bold x = home country

Table 22 20 largest firms in Information Technology, worldwide, 2007

Ranking		Country	Sales (bil. USD)	Ranking employment x)	Employment (no employees)
1	Microsoft	US	57.90	4	91,000
2	Fujitsu	JP	56.53	2	159,500
3	Accenture	US	22.39	1	186,000
4	Oracle	US	20.08	8	84,233
5	Google	US	16.59	16	16,805
6	CSC	US	16.06	6	89,000
7	SAP	DE	14.96	12	43,861
8	Capgemini	FR	12.71	7	87,000
9	Atos Origin	FR	8.02	11	49,500
10	Yahoo	US	6.97	17	14,300
11	Logica CMG	UK	6.10	13	39,000
12	ACS	US	5.96	9	63,000
13	Symantec	US	5.70	15	17,600
14	Unisys	US	5.65	14	32,000
15	Infosys	IN	5.33	3	100,306
16	Tata Consultancy	IN	4.32	10	58,500
17	CA	US	4.20	18	13,700
18	WIPRO	US	3.47	5	90,000
19	Adobe	US	3.16	20	6,959
20	Electronic Arts	US	3.15	19	9,000
	TOTAL		279.15		1,251,264

x) = only in this table

Sources: *Forbes Global 2000*, 2008; company websites; company Annual Reports 2007; various news reports