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Report on Foreign Direct Investment in Metal and Electronics Manufacturing in 12 EU countries and its Social Effects ■ WIBAR-2 Report No. 1

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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

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 Responsibility (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 Europeanisation 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.

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 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

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.

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 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

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.

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

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 12 countries involved in our project 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, and the retail industry. In October and November 2008, the partners in WIBAR-2 organised 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 (in Duisburg). The report that you are currently reading covers the metal and electronics manufacturing industry. Its analyses of the effects of FDI are altogether based on the answers of 16,557 respondents working in this industry, 29.7% 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. 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. Wherever possible, we compare these results with data from other sources.

calculations based on UNCTAD (2008) *World Investment Report 2008* (http://www.unctad.org/en/docs/wir2008_en.pdf), Table B.1.

Afterwards, in the sections 4 to 12, we will treat the social effects of inward FDI in metals and electronics manufacturing.

2 Foreign direct investment in metal and electronics: 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 publications¹¹ 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 1,045 subsidiaries and with in total 4,204 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. As we will see, notably in the metal and electronics manufacturing industry this is a serious limitation indeed.

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

2.2 Metal and electronics manufacturing in the database

This paper presents brief results of a first exploration of the database. Its focus is on the metal and electronics manufacturing industry, detailed in sub-sectors in Table 1a hereafter. In the last two columns we have given the numbers of the respective companies and subsidiaries. For metal and electronics manufacturing in the 12 countries at stake our MNE database contains 120 company names with 297 subsidiaries, an average of 2.3 subsidiaries per company. Our further analysis will be based on these MNEs.

Table 1a *MNEs in metal and electronics manufacturing by sub-sector, according to NACE-coding, breakdown by numbers of companies and subsidiaries*

NACE		No.comp.	No. subs.
2700	Manufacture of basic metals	6	24
2800	Manufacture of fabricated metal products, except machinery and equipment	4	14
2900	Manufacture of machinery and equipment	19	42
3000	Manufacture of office machinery and computers	18	35
3100	Manufacture of electrical machinery and apparatus	18	39
3200	Manufacture of radio, television and communication equipment and apparatus	11	20
3300	Manufacture of medical, precision and optical instruments, watches and clocks	14	15
3400	Manufacture of motor vehicles, trailers and semi-trailers	23	82
3500	Manufacture of water, air and railway transport equipment as well as of bicycles and motorcycles	7	26
Total		120	297

The average number of subsidiaries per company as we selected these can be used as a measure for the diversification of MNE interests. Looking from this viewpoint at the sub-sectors, the manufacture of basic metals (code 2700) shows the highest degree of diversification (average 4.0 subsidiaries per MNE), followed by the manufacture of water, air and railway transport equipment as well as of bicycles and motorcycles (code 3500, average 3.7) and the manufacture of motor vehicles, trailers and semi-trailers (code 3400, average 3.6). Manufacture of medical, precision and optical instruments, watches and clocks (3300, average 1.1) seems to be least diversified.

Yet, against the backdrop of the rather low figures these outcomes need cautious treatment. One has to realize that large firms have many more subsidiaries. Based on various sources, we compiled for 2006 a list of world's largest 50 firms in metal and electronics manufacturing: see the Annex, Table 22. 18 of these top 50 firms had headquarters in the EU (of which six in

Germany, three in France, three in Sweden, two in the Netherlands¹², and one each in the UK, Finland, Italy and Switzerland/Sweden), and 32 elsewhere in the world (15 in the US, 12 in Japan, two each in India and the Republic of Korea, and one in Canada). By March 2008, these 50 firms all were active in at least three of the 12 countries at stake, be it sometimes under other names and as other legal entities, also because of mergers, acquisitions and dissolving efforts in the intervening period.¹³ We took a random sample of ten out of the 50 largest MNEs (the no's 5, 10, 15 50) and we derived from their Annual Reports as well as from additional sources a number of 2,663 subsidiaries, locations or establishments (there is no uniform terminology!): an average of these entities of over 266 per firm. Even if these entities may be partly “sleeping”, this remains a formidable amount.

For 38 of these top 50 firms we were able to trace the foreign (or non-domestic) share of their sales; we calculated its unweighted average on 62%. For 37 firms we found their foreign employment share; here we calculated an unweighted average of 56%. Table 1b provides a breakdown by sub-sectors of the top 50 firms, including their shares in total sales and employment of these top 50 firms and their respective average foreign sales and employment shares.

Table 1b *Top 50 MNEs in metal and electronics manufacturing by sub-sector, according to NACE-coding, breakdown by numbers of companies, shares in total sales and employment of top 50 firms and foreign sales and employment shares*

NACE	No. comp.	Sub-sector shares		Foreign shares	
		sales	employ	sales	employ
2700	5	6%	12%	69% (4)	71% (4)
2800	0	0%	0%	0	0
2900	3	6%	6%	45% (1)	54% (1)
3000	10	17%	18%	57% (9)	64% (7)
3100	4	6%	11%	68% (1)	54% (2)
3200	6	10%	10%	75% (5)	59% (5)
3300	1	1%	1%	?	?
3400	17	49%	37%	59% (15)	48% (15)
3500	4	5%	5%	76% (3)	48% (3)
Total	50	100%	100%	63% (38)	56% (37)

Between () the number of companies with available data

With 17 firms, 49% of sales and 37% of employment, the motor vehicles etc. sub-sector (code 3400) proves to be rather dominant among the top 50 firms. The second important sub-sector is the manufacture of office machinery and computers (code 3000), including 10 firms, 17% of sales and 18% of employment. We have to add that often turned out to be difficult to classify companies in sub-sectors.

¹² EADS, though mainly a French/German/UK venture, is registered in the Netherlands.

¹³ The most important: in 2007 Daimler/Chrysler AG sold Chrysler (renamed Chrysler LLC) to the Cerberus Capital Management Group; Mittal Steel and Arcelor merged into ArcelorMittal; Alcan was taken over by Rio Tinto Zinc and continues as RT Alcan.

As far as possible, we also calculated the foreign shares in total sales (sales not gained in the home country) of the top 50 firms. As for sales, based on data from 38 firms we found a foreign share of 63%. In all sub-sectors for which we found data for more than one firm, this share was higher than 50%; the most internationalized sub-sectors according to sales were manufacture of transport equipment (code 3400, 76%) and manufacture of radio, television and communication equipment (code 3200, 75%). As for employment, based on 37 firms (partly differing from those with foreign sales data) we found a somewhat lower foreign share: 56%. The most internationalized sub-sector according to the foreign employment yardstick were the manufacture of basic metals (code 2700, 71%), followed by the manufacture of office machinery and apparatus (code 3000, 64%). Based on this yardstick car manufacturing (3400) and the manufacturing of other transport equipment (3500) are least internationalized, with an average foreign share of 48%. Here, employment is considerably less spread over the globe than sales.

3 Internationalization in metal and electronics

According to our database, in the 12 countries 120 MNEs in metal and electronics manufacturing own 297 MNE subsidiaries. These subsidiaries have in total 1,735 establishments, thus 5.8 establishments per subsidiary. This implies that each subsidiary on average is involved in almost six countries i.e. nearly in half of the countries covered by our research. By any means this indicates a high level of internationalization (be it not always— or even mostly-- of manufacturing itself but also of for example selling, servicing and purchasing). This level of internationalization is substantially higher than in the other four industries under scrutiny. Major MNEs in metal and electronics manufacturing based in Europe are in the top 15 of most internationalized MNEs. In a 2006 overall ranking, Siemens AG is in 4th position, another German firm, Linde AG, in 8th and Netherlands-based Royal Philips Electronics, in 10th position, carrying out activities in respectively 89, 72 and 68 host countries.¹⁴ As we will show in section 6, this high level of internationalization is also reflected in relatively high shares of metal and electronics workers employed in MNEs among the WageIndicator respondents across all countries at stake.

¹⁴ UNCTAD (2008) *World Investment Report 2008*, 29, citing the UNCTAD/Erasmus University Rotterdam database on largest MNEs (TNCs). This does not always correspond with size rankings according to sales. In the 2006 sales ranking we put up (Table 22), Siemens was in 7th position and Philips Electronics in 32th, while Linde just missed the top 50 (rank 51, with sales of USD 15,605 and 55,445 employed).

3.1 Internationalization by host country

Table 2 shows that 486 of all 1,735 MNE establishments in metal and electronics manufacturing are found in the motor vehicles etc. sub-sector (code 3400, 28%), followed by machinery and equipment (2900) with 307 establishments (17.5%) and electrical machinery and apparatus (3100) with 258 (15%). The table shows, not surprisingly, that internationalization in the basic metals and fabricated metal products sub-sectors (2700 and 2800) is rather limited compared with other sub-sectors. Here access to raw materials plays a major role. Looking at the 12 countries, the table shows that most establishments are found in Germany (206 out of 1,735, 12%), followed by France (174 or 10%) and the United Kingdom (171 or 10%). The fewest establishments are found in Hungary (111, 6%) and Denmark (112, 6%).

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

	2700	2800	2900	3000	3100	3200	3300	3400	3500	Total
BE	5	1	26	20	21	14	10	42	7	146
DK	2	1	23	13	16	10	9	34	4	112
FI	4	2	21	13	17	11	10	35	5	118
FR	6	3	27	22	25	16	11	44	20	174
DE	10	4	38	22	31	17	11	54	19	206
HU	4	2	20	11	17	11	9	33	4	111
IT	4	2	23	20	21	13	11	38	7	139
NL	5	6	28	25	25	13	13	38	7	160
PL	5	2	20	15	18	10	9	37	4	120
ES	5	2	22	17	21	10	9	42	8	136
SW	5	3	28	13	18	12	9	44	10	142
UK	4	7	31	19	28	13	11	45	13	171
Total	59	35	307	210	258	150	122	486	108	1,735

The table clarifies that, compared with the total amount per sub-sector, MNEs with subsidiaries in basic metals and fabricated metal products are somewhat overrepresented in Germany; so do basic metals and water, air and railway transport equipment manufacturing in France, office machinery and computers manufacturing in the Netherlands, and motor vehicles etc. and water, air and railway transport equipment manufacturing in Sweden.

As already indicated, we compiled a 2006 list of world's largest 50 firms in metal and electronics manufacturing: see the Annex, Table 22. Table 21, to be found in the Annex as well, shows to which extent these 50 firms have spread their activities over the 12 countries under scrutiny through only sales, warehousing and services activities (one 'x') as well as through manufacturing facilities (two 'xx's') too. It turns out that the 50 largest MNEs jointly own, according to our database, 164 subsidiaries (74% of the total number) and in total 928 establishments (72%). This is an average of 3.3 subsidiaries and 18.6 establishments – or 5.8 establishments per subsidiary. (In the table, 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 70 MNEs own 133 subsidiaries and 807 subsidiaries – an average of 1.9 subsidiaries and 11.5 establishments per firm, or 6.1 establishments per subsidiary. Finally, we found that the top 50 firms owned 237 manufacturing facilities ('xx' in second row, 'manuf./2') in the 12 countries, against 484 manufacturing entities for all MNEs: on average 2.4 per top 50 firm against 2.0 on average total. The resulting share of the top 50 firms in the manufacturing facilities, 49%, is relatively low.

3.2 Internationalization by MNE home country

Table 3 (next page) shows that no less than 437 or 25% of all establishments in this industry are owned by MNEs with the USA as their home country, followed by those based in Germany (284 or 16%) and Japan (244 or 14%). Swedish MNEs in metal and electronics manufacturing (215, 12%, with an additional 48 establishments of a Swedish/Swiss firm and 5 establishments of Finnish/Swedish companies) take a quite strong 4th position, French MNEs are ranking 5th (149 or 9%). Logically, all European countries have the largest numbers of establishments of 'their' MNEs in the respective home countries: in France 27, in Germany 48 (plus six German/French companies), etcetera.

A Swedish-German research project has shown that Swedish MNEs, among which metal and electronics manufacturing firms play a prominent role, expand mainly to industrialized countries. In 2002, 77% of the foreign labour force of Swedish MNEs worked in these countries; in 2000 the comparable share for German MNEs was 63%.¹⁵

A striking result is that according to our database exactly 800 (46%!) of 1,735 metal and electronics manufacturing MNE establishments in the 12 countries are owned by MNEs from outside the European Union: besides from the USA and Japan, also from Canada, India (38 establishments), Korea (60 establishments), Switzerland, Taiwan, and Turkey. For the IT industry we traced a share of 32%, while we found considerably lower figures for finance and call centres (17.5%), retail (17%) and transport and telecom (16%). These figures fit in the general picture of a highly internationalized industry. According to UNCTAD¹⁶, in 2006 two sub-sectors of 'our' industry were among the industries with the highest internationalization

¹⁵ Sascha O. Becker, Karolina Ekholm, Robert Jäckle, Marc-Andreas Muendler (2005) Location Choice and Employment Decisions: A Comparison of German and Swedish Multinationals, *Review of World Economics*, 141(4): 693-731, here: 694.

¹⁶ UNCTAD (2008) *World Investment Report 2008*, 29, citing the UNCTAD/Erasmus University Rotterdam database on largest MNEs (TNCs).

index (the number of foreign affiliates divided by the number of all affiliates): motor vehicles with a rating of 63.4, electrical/electronics even with 74.1. In 2006 the top 50 of metal and electronics manufacturers was dominated by MNEs from outside the EU: their share was 60% (including 13 US firms, 12 Japanese, two Korean and two Indian firms and one Canada-based MNE). Among the top 20, the share of these MNEs was even higher, 70%. In this largest category we traced six US, six Japanese and two Korean firms, leaving room for only four Germany-based firms and one firm of French and one of Italian origin. In 2006 joint sales of these top 20 firms took 68% of total sales of the top 50 firms (USD 2,190,268 million of USD 3,200,250 million). The equivalent share of employment in the top 20 firms was, with 62%, somewhat lower (4,9 million of 7,9 million employees).

Jointly the top 20 firms may be less internationalized than the firms in the 21-50 ranks: in 2006 the average foreign sales share of the top 20 was 59%, against 67% for the 18 firms in the size category next to them for which we found data. The average foreign employment share of the top 20 firms was 49%, against 64% for the 17 firms in the next category with data available.

Table 3 *Number of MNE establishments in 12 countries in metal and electronics manufacturing, breakdown vertical by MNE home country and horizontal by host country*

	BE	DK	FI	FR	DE	HU	IT	NL	PL	ES	SW	UK	Tot.
Austria	0	0	0	1	6	0	0	2	0	0	0	1	10
Belgium	1	0	0	0	0	0	0	0	0	0	0	0	1
Canada	1	0	0	0	3	0	0	0	0	0	0	0	4
Finland	4	4	6	3	5	4	3	5	4	3	7	5	53
Finland/Sweden	0	0	1	0	1	0	0	1	0	0	1	1	5
France	10	10	10	27	12	9	11	13	9	11	11	16	149
Germany	25	20	19	21	48	18	23	24	18	22	24	22	284
Germany/France	0	0	0	6	6	1	0	0	0	3	0	4	20
India	3	1	1	6	5	1	2	6	3	1	2	7	38
Italy	4	2	2	4	3	3	8	3	2	4	2	4	41
Japan	24	18	19	24	22	19	23	23	18	18	15	21	244
Korea	5	5	5	5	5	5	5	5	5	5	5	5	60
The Netherlands	7	2	3	6	12	3	3	20	4	6	2	8	76
Sweden	19	16	16	19	18	16	16	17	17	16	27	18	215
Sweden/ Switzerland	4	4	4	4	4	4	4	4	4	4	4	4	48
Switzerland	1	0	1	1	2	0	3	0	0	0	0	1	9
Taiwan	0	1	0	1	1	0	1	1	0	1	0	1	7
Turkey	0	0	0	0	1	0	0	0	0	0	0	0	1
United Kingdom	0	0	0	5	6	0	0	3	2	2	1	13	32
UK/Turkey	0	0	0	0	1	0	0	0	0	0	0	0	1
USA	38	29	31	41	45	28	37	33	34	40	41	40	437
Total	146	112	118	174	206	111	139	160	120	136	142	171	1735
Of which top 50	79	72	74	81	85	74	76	80	75	76	75	81	928
Share top 50 firms	54%	64%	63%	47%	41%	67%	55%	50%	63%	56%	53%	47%	54%

Table 3 shows various patterns of internationalization of metal and electronics manufacturing by MNE home country. For example, Germany-based MNEs expanded rather evenly to the 12 EU countries included in our research, be it more particularly to Belgium, the Netherlands and Sweden. French MNEs internationalized especially towards the UK, the Netherlands and Germany. Swedish metal and electronics manufacturing MNEs seem to have invested evenly in the 12 countries, with Belgium and France slightly ahead of the others. The Dutch metal and electronics MNEs notably internationalized towards Germany. The US-based manufacturers have spread their interests widely across Europe, with some concentration on Germany. The same holds for their Japanese counterparts, be it that they invested somewhat stronger in Belgium, France, Italy and the Netherlands than elsewhere.

It is interesting to note the share of the top 50 firms in the number of establishments per country (last row of Table 3). This share is lowest in the Germany (41%), followed by France and the UK (both 47%). The share is highest in Hungary (67%), followed by Denmark, Finland and Poland. These outcomes suggest that the largest, most internationalized metal and electronics manufacturers have conquered strong positions in FDI in notably the latter three countries.

4 The social effects of foreign direct investment in metal and electronics

For the analyses in this part of the report, we use the *WageIndicator* data collected in 2007 and the first and second quarter of 2008. Initially, we aimed for analyses of 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 16,557 workers in metal and electronics manufacturing in nine countries completed the questionnaire. Table 4 shows a breakdown by country. The reader should be aware that the numbers of respondents in Hungary, Sweden and to a certain extent Poland remain small.

Table 4 *Number of observations in metal and electronics manufacturing by country*

Belgium	Finland	Germany	Hungary	Netherl.	Poland	Spain	Sweden	UK
1,167	952	7,041	52	5,383	314	541	68	1,000

In the next chapters (5 to 7), we first deal with the characteristics of the firms in metal and electronics manufacturing: 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 metal and electronics manufacturing? Table 5 (next page) shows that the establishments where the respondents are employed, are on average quite large (headcount) in Germany, Sweden, Hungary and to a lesser extend in the UK. The share of those working in companies with 500 or more employees is largest in Hungary (39%), Sweden (38%), and Germany (36%). Average establishment size is rather low in Belgium, Finland, the Netherlands, and especially in Spain. In the Netherlands and Spain majorities of the respondents, respectively 56% and 63%, are working in establishments with less than 100 employees.

Table 5 *Distribution over five establishment size categories and average establishment size in metal and electronics manufacturing by country*

Establishment size	BE	FI	DE	HU	NL	PL	ES	SW	UK
Less than 20	18	18	12	12	21	14	32	16	17
20 — 100	30	30	24	8	35	22	31	24	30
100 — 500	28	28	29	42	26	35	24	22	28
500 — 1000	14	13	17	31	9	22	9	19	16
1000 and more	10	10	19	8	9	6	4	19	10
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Average head count	678	691	1247	918	643	606	392	1257	740

Note: Establishment 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 until week 21 in 2008. Therefore, table 6 (next page) covers eight countries only.

Table 6 *Distribution over location categories in metal and electronics manufacturing by country*

	BE	FI	DE	NL	PL	ES	SW	UK
No	23	22	29	35	34	31	16	23
Yes, in 1 city / municipality	2	6	4	4	11	5	3	9
Yes, in 1 region	2	2	4	3	3	3	0	3
Yes, in 2 or more regions	5	18	4	7	5	9	4	8
Yes, throughout the country	2	6	4	3	4	4	1	2
Yes, throughout the country and abroad	51	39	48	38	32	39	51	40
Yes, but only abroad	14	7	8	10	11	9	24	14
Total	100	100	100	100	100	100	100	100
MNE median establishment size	859	1222	2030	1151	741	649	1480	1094
No MNE median establishment size	225	271	288	158	431	153	588	319
Med. MNE size: med. No MNE size	3.9	4.5	7.0	7.3	1.7	4.2	2.5	3.4

The share of workers employed in MNEs is particularly high in Swedish metal and electronics manufacturing (75%: the answers on *Yes, throughout the country and abroad* combined with those on *Yes, but only abroad*) as well as in Belgium (65%), and comparatively low in Poland (43%). Germany (56%), the UK (54%), the Netherlands and Spain (both 48%), and Finland (46%) are in between. Yet, in all eight countries metal and electronics manufacturing is on top of the five industries as regards the share of MNE workers – another indication of the high level of establishment of this industry.

The table also shows that the larger the establishment size, the higher the share of companies with locations abroad. In all countries the MNE establishments are much larger than those of the non-MNE firms, with the Netherlands (7.3 times as large) and Germany (7.0) as most extreme cases. The size differences are rather small in Poland and Sweden; in both countries the average size of the non-MNE establishments is comparatively large.

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 metal and electronics manufacturing by country*

	BE	NL	ES	SW
Total workers in foreign-owned company	70%	34%	39%	58%
Working in MNE, in foreign-owned company	88%	58%	65%	64%

Table 7 presents the results. The first row concentrates on those indicating to work in a foreign-owned company. It shows that particularly in Belgium and Sweden, a high share of the respondents –70% and 58% respectively—is employed in such companies. For Belgium this corresponds 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.¹⁷ 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 establishment, with in 2008 Sweden in 3rd position, the UK in 4th, the Netherlands in 6th and Spain ranking 12th.¹⁸ By contrast, employees in the Netherlands and in Spain are more often employed in nationally owned companies.

The second row concentrates on those working in MNEs. It indicates that in all four countries majorities of MNE staff are working in foreign-owned MNEs: in Belgium even 88% (implying that only 12% works in Belgium-based MNEs), in the other countries about two-thirds.

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 *Median gross hourly wages of workers in MNE and non-MNE firms, in metal and electronics manufacturing by country (in Euros, current exchange rates av. 2007-1st half 2008), all*

	BE	FI	DE	NL	PL	ES	UK
MNE	16.37	16.01	20.48	17.61	6.47	10.55	17.46
No MNE	14.18	14.43	15.06	14.02	4.24	8.07	14.08
Total	15.54	15.12	17.98	15.40	5.01	8.88	16.09
Difference ((MNE-non-MNE):MNE)	13.4%	9.9%	26.5%	20.4%	34.5%	23.5%	19.4%

Table 8a presents the outcomes of the *WageIndicator* web-survey in this respect, for the MNEs as defined earlier here (a company that has one or more locations abroad) versus domestic firms, and for seven countries. It shows that in metal and electronics manufacturing the median hourly wage level in MNEs is substantially higher than that in non-MNE firms, varying from 9.9% of the median MNE-wage in Finland till 34.5% in Poland (in percentages

¹⁷ UNCTAD (2008) *World Investment Report 2008*, 9.

¹⁸ 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>).

of wages in MNEs). The outcomes give a picture of the variations between national hourly wage levels, though they strictly spoken do not allow for purchasing power comparisons (We did not use Purchasing Power Parities as these were not yet available, but current exchange rates instead). We based ourselves on the *median* wages, but also calculated *average* wages (not shown).

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 vary widely compared to the median overall wages in metal and electronics: higher in Belgium (9%), Finland (1%), the Netherlands (12%) and Spain (7%), lower in Germany and the UK (both 3%) and Poland (6%). Most likely this working hours' category includes quite some relatively well-paid trainees in notably in the first four countries. Nevertheless, the picture that MNEs pay (substantially) higher wages than domestic firms does not change for this hours' category.

Table 8b *Median gross hourly wages of workers in MNE and non-MNE firms, in metal and electronics manufacturing 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	-	15.71	19.93	20.91	-	11.52	18.95
No MNE	-	14.90	14.84	15.51	-	8.41	14.85
Total	16.92	15.18	17.42	17.49	4.70	9.52	16.61
Difference ((MNE-non-MNE):MNE)	-	4.9%	25.6%	25.8%	-	27.0%	27.8%

Table 8c provides this wage information for those usually working more than 20 to 40 hours per week, representing 39% (Poland) or more of the respective metal and electronics workforces (cf. Table 17). Except for Belgium where they are exactly equal, these median hourly wages are lower than the overall median wages, varying from 1-2% (Finland and Poland) till 5-8% in the other countries. MNEs pay higher wages for this category as well, again mostly substantially, though for Poland the difference is small, especially compared to the large overall wage premium in Polish MNEs.

Table 8c *Median gross hourly wages of workers in MNE and non-MNE firms, in metal and electronics manufacturing 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	16.37	15.32	18.93	16.21	5.11	9.80	17.00
No MNE	14.39	13.86	14.09	13.59	4.95	7.90	13.38
Total	15.54	14.89	16.50	14.56	4.98	8.44	15.21
Difference ((MNE-non-MNE):MNE)	12.1%	9.8%	25.6%	16.2%	3.1%	19.4%	21.3%

Our calculations (not shown) of median hourly wages for those usually working over 40 hours per week reveal rather consistent outcomes concerning the wages in MNEs. In all countries in MNEs the median hourly wages increase with more hours worked, to substantially higher

levels compared to the overall median in the over 48 hours' category – varying from 15% in Belgium to 32% in the Netherlands and Poland, 36% in the UK and even 39% in Spain. In domestic metal and electronics firms this mechanism either does not work at all (in Finland, the Netherlands and Spain) or only to a very limited extent (in the other four countries).

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 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 metal and electronics manufacturing 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	15.19	15.09	17.19	15.44	5.16	8.95	16.11
MNE	100-500 empl	17.64	16.21	18.15	17.00	6.58	10.94	17.67
MNE	> 500 empl	16.45	16.45	22.80	21.60	6.50	12.60	18.28
MNE	Total	16.37	16.01	20.48	17.61	6.47	10.55	17.46
No MNE	< 100 empl	13.19	13.39	13.87	13.58	4.00	7.79	13.00
No MNE	100-500 empl	17.55	15.40	16.74	16.07	4.11	8.66	16.31
No MNE	> 500 empl	-	18.35	20.66	16.51	5.20	9.06	16.61
No MNE	Total	14.18	14.43	15.06	14.02	4.24	8.07	14.08
Total	< 100 empl	14.13	13.75	14.49	14.06	4.35	8.19	14.09
Total	100-500 empl	17.55	15.71	17.50	16.63	5.24	10.06	17.27
Total	> 500 empl	17.06	17.26	22.45	21.05	5.63	12.48	17.98
Total	Total	15.84	15.17	17.93	15.39	5.01	8.80	16.09
Difference ((MNE-non-MNE):MNE)	< 100 empl	13.2%	11.2%	19.3%	12.6%	22.4%	12.9%	19.3%
Difference ((MNE-non-MNE):MNE)	100-500 empl	0.5%	5.0%	7.7%	5.5%	37.5%	20.8%	7.7%
Difference ((MNE-non-MNE):MNE)	> 500 empl	-	-11.6%	9.4%	23.6%	20.0%	28.1%	9.1%
Difference ((MNE-non-MNE):MNE)	Total	13.4%	9.9%	26.5%	20.4%	34.5%	23.5%	19.4%

From the table it emerges that in all countries the wage premium in MNEs is omnipotent in firms with less than 100 employees; it varies between 11 and 22%. Yet in larger firms the picture is much less clear. In the category with 100-500 employees MNEs only show a large wage advantage in two countries, Poland and Spain; in the other countries their advantage is less than 8%. The results in the largest category, the firms with over 500 employees, are mixed: MNE wages are 20% or more above those of domestic firms in the Netherlands, Poland and Spain, some 9% above those in Germany and the UK, and surprisingly in Finland some 12% less than wages in domestic firms. Like in some other industries, notably transport and telecom, Finnish domestic firms seem to have a strong position in the labour

market. Our results indicate that especially in Finnish and German metal and electronics manufacturing other factors than size may be at hand that can explain wage differences between MNEs and domestic 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.

All seven countries show a considerable gender pay gap, from 9% in Finland to 22-23% in Spain and the UK. In five of seven countries the gaps in the MNEs exceed those in non-MNE firms, though in notably Spanish and British domestic firms gaps remain rather substantial. In Germany the gender pay gap is higher in domestic firms, while in the Netherlands MNEs and domestic firms are exactly at par. A breakdown of male and female wages by firm size (not shown) reveals that in five countries, Belgium, Germany, the Netherlands, Poland and the UK, the gaps are largest in the large firms, and that in this size category in all five countries the gaps are higher in domestic firms. In Finland and Spain the largest gaps pop up in the firms with 100-500 employees; again, in this category they are higher in domestic firms. In the large Spanish firms, both in MNEs and domestic firms, women have a small wage advantage over men, presumably because women office workers are well represented.

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

		BE	FI	DE	NL	PL	ES	UK
MNE	male	17.02	17.86	21.13	18.99	6.49	12.02	18.86
MNE	female	13.90	14.67	18.11	14.66	5.91	8.35	14.49
MNE	difference ((m-f):m)	18.3%	17.8%	14.3%	19.4%	8.9%	30.5%	23.2%
No MNE	male	14.28	14.73	15.59	14.28	4.24	8.38	15.05
No MNE	female	13.34	13.55	12.99	11.51	4.19	6.74	11.99
No MNE	difference ((m-f):m)	6.6%	8.0%	16.7%	19.4%	1.2%	19.6%	20.3%
Total	male	16.15	15.69	18.51	15.68	5.02	9.82	17.16
Total	female	13.86	14.13	15.72	13.10	4.62	7.57	13.32
Total	difference ((m-f):m)	14.2%	8.8%	15.1%	16.5%	8.6%	22.9%	22.3%

Only cells with more than 8 observations are included

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.¹⁹ The mainstream reasoning is that MNEs have ample opportunities 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.²⁰

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 metal and electronics manufacturing by country

	BE		FI		DE		NL		PL		ES		UK	
Constant	2.727	***	2.307	***	1.954	***	1.543	***	1.719	***	1.528	***	2.081	***
Work experience	0.038	***	0.005		0.023	***	0.041	***	0.026	*	0.010		0.027	**
Work experience SQ	-0.001	*	-0.000		0.000	***	-0.001	***	0.000		0.000		-0.001	**
Female	-0.162		-0.181	***	-0.126	***	-0.147	***	-0.148		-0.334	***	-0.144	*
Working hours p.w. > 40	0.121		-0.004		0.045	**	0.024		-0.063		-0.044		0.011	
Educ (1=low,...,5=high)	0.062	*	0.110	***	0.135	***	0.174	***	0.245	***	0.181	***	0.069	*
MNE	0.152		-0.002		0.125	***	0.099	***	0.375	***	0.177	**	0.141	*
Company > 100 empl.	-0.095		0.128	***	0.168	***	0.121	***	0.006		0.042		-0.004	
N	576		887		6500		4672		237		460		653	
R square	0.052		0.152		0.167		0.255	***	0.212		0.163		0.038	

¹⁹ These studies are mostly quite relevant for metal and electronics manufacturing, as they concentrate on manufacturing. 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 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.

²⁰ 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.

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 (see row 'MNE'), though for Spain the influence is significant but not very strong and for the UK significant but rather weak. There are no significant differences for Belgium and Finland. The influence of working in a MNE is by far highest for Poland, followed by Germany and the Netherlands.

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 shows rather weak influences. Germany is the only country clearly showing wage premia 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. At this point the picture deviates clearly from that concerning wage levels. As Table 9 (next page) shows, in metal and electronics manufacturing in all countries, except in Poland, receiving overtime in pay is more common in non-MNE firms than in MNEs. If, as the working hours' figures we will present (Tables 17 and 18) suggest, the incidence of long hours (partly including working time) is nearly everywhere in the industry higher in MNEs than in non-MNEs, this implies that working for an MNE is paired with less compensation for overtime. This is in accordance with detailed findings for the Netherlands that were also based on *WageIndicator* outcomes.²¹

Table 9 *Percentage of workers receiving overtime compensation in pay in MNE and non-MNE firms in metal and electronics manufacturing by country*

	BE	FI	DE	NL	PL	ES	UK
MNE	18%	46%	17%	29%	46%	42%	42%
No MNE	24%	53%	29%	46%	41%	54%	48%
Total	20%	50%	22%	38%	43%	48%	45%

8.3. Performance-based pay

The *WageIndicator* 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

²¹ Fabienne Fortanier (2008) *Multinational Enterprises, Institutions and Sustainable Development*. Diss. Erasmus University Rotterdam, 178.

performance allowance or commission, but it does not include skill bonuses or labour market shortage bonuses.

Table 10 reveals that workers in metal and electronics manufacturing in MNEs more often receive performance-based pay than workers in non-MNEs. This applies to all seven countries with relevant data. In this respect particularly in Belgium, Sweden and the Netherlands substantial differences between MNEs and non-MNEs show up.

Table 10 *Percentage of workers receiving performance-based pay in MNE and non-MNE firms in metal and electronics manufacturing by country*

	BE	FI	DE	NL	ES	SW	UK
MNE	14%	14%	17%	9%	23%	14%	8%
No MNE	5%	10%	10%	3%	20%	6%	5%
Total	11%	12%	14%	6%	21%	12%	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 more dangerous in non-MNE firms in three countries: Belgium, the Netherlands and Spain, while the results for Poland showed no difference between MNEs and other firms.

It has to be noted in addition that, compared to the other four industries under scrutiny, metal and electronics manufacturing on average takes the second highest position concerning the incidence of dangerous work, behind the transport and telecom sector.

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 metal and electronics manufacturing by country*

	BE	NL	PL	ES
MNE	2.0	2.2	1.9	1.9
No MNE	2.1	2.4	1.9	2.3
Total	2.0	2.3	1.9	2.1

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 clarifies that for three indicators, 'finds job stressful', 'work mentally exhausting' and 'finds job boring' the differences between the opinions of workers of MNEs and non-MNEs in metals and electronics manufacturing are small or non-existing, with the exception of Hungary (but mind the rather small number of observations here!). Somewhat larger differences can be noted for the fourth indicator, 'work physically exhausting': here the scores in Germany, the Netherlands and Spain are higher (which means more negative) in the non-MNE firms, while this picture is (slightly) reverse in Poland. Thus, concerning the question whether inward FDI i.e. working for a MNE generates more stress, our results are inconclusive.²²

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 metal and electronics manufacturing by country

		BE	DE	HU	NL	PL	ES
MNE	Finds job stressful	3.4	3.5	4.0	3.8	3.4	3.5
No MNE	Finds job stressful	3.3	3.5	1.0	3.7	3.4	3.5
Total	Finds job stressful	3.4	3.5	2.5	3.8	3.4	3.5
MNE	Work physically exhausting	2.5	2.8	2.0	2.4	3.0	3.0
No MNE	Work physically exhausting	2.5	3.0	-	2.7	2.9	3.3
Total	Work physically exhausting	2.5	2.9	2.0	2.6	2.9	3.1
MNE	Work mentally exhausting	3.2	3.3	3.5	2.8	3.5	3.7
No MNE	Work mentally exhausting	3.2	3.3	1.0	2.9	3.3	3.9
Total	Work mentally exhausting	3.2	3.3	2.7	2.9	3.4	3.8
MNE	Finds job boring	2.2	2.1	3.0	2.1	2.2	2.7
No MNE	Finds job boring	2.2	2.1	3.0	2.1	2.1	2.6
Total	Finds job boring	2.2	2.1	3.0	2.1	2.2	2.7

Note: Cells with 8 observations or less are not shown

The 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 are detrimental for workers' mental health, and over-skilling is generally also rather disadvantageous for one's earnings.²³ Here we have data for six countries, be it that for Hungary a division between MNEs and non-MNEs was not possible.

²² Fortanier, *op.cit.*, 173 and 178, concluded for the Netherlands to higher (perceived) stress levels in MNEs compared with domestic firms, especially among lower educated employees.

²³ Cf. Joop Hartog (2000) Over-education and earnings: where are we, where should we go?, *Economics of Education Review*, 19: 131-147.

Table 13 reveals for four countries a 'match'-level between 68% (Spain) and 77% (Sweden), with Poland as an exception with the very high score of 98%. Over-all the scores in MNEs are higher, with rather small differences compared to non-MNEs, except for Sweden where the score for MNEs is 11%-points higher, and for Poland where the figures are the same.

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

		BE	HU	NL	PL	ES	SW
MNE	Job level matches education level	75%		75%	98%	69%	80%
No MNE	Job level matches education level	69%		70%	98%	67%	69%
Total	Job level matches education level	73%	70%	72%	98%	68%	77%

The fourth job quality issue concerns internal promotion. Table 14 (next page) shows that in five out of the seven 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. In these five countries the differences are quite clear, varying from 9%-points in Finland and the UK till 17%-points in Belgium, suggesting that metal and electronics manufacturing MNEs in these countries are offering better career opportunities. The larger scale of MNE establishments may well favour promotion opportunities. Yet, Poland and Spain show a reverse picture, though here the advantage of domestic firms is rather small. In Poland the comparatively large scale of non-MNE establishments may play a role, but the Spanish non-MNE establishments are on average the smallest of all: obviously there is more at stake than scale. A minor but striking observation is that the share of workers stating to have been promoted in the current firm is much smaller in Germany than in the other countries; that applies for both types of firms.

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

		BE	FI	DE	HU	NL	PL	ES	UK
MNE	Has been promoted in current firm	56%	52%	30%		51%	48%	49%	49%
No MNE	Has been promoted in current firm	39%	43%	20%		40%	53%	51%	40%
Total	Has been promoted in current firm	50%	47%	26%	50%	45%	50%	50%	45%

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

The upper half of table 15 (next page) clearly shows the experiences and indicates that the MNE workforce much more often faced reorganizations in the past year, in all five countries for which have solid information. In Poland this incidence is nearly double compared to non-MNEs, in the other countries the differences vary between 12%-points (the Netherlands and the UK) to 14%-pts (Germany) and 15%-pts (Belgium).

Table 15 *Percentage reporting that organisation faced reorganization, and percentage reporting to expect a reorganization in the next 12 months, in MNE and non-MNE firms in metal and electronics manufacturing by country*

		BE	DE	HU	NL	PL	SW	UK
MNE	Organisation faced reorganisation	35%	44%		31%	61%		56%
No MNE	Organisation faced reorganisation	20%	30%		19%	31%		44%
Total	Organisation faced reorganisation	30%	38%	81%	25%	44%		50%
MNE	Reorganisation exp. in 12 months	56%	62%			55%	77%	70%
No MNE	Reorganisation exp. in 12 months	40%	44%			50%	83%	62%
Total	Reorganisation exp. in 12 months	51%	54%	76%		52%	79%	66%

The outcomes presented in the lower half of the table reveal that the expectations concerning coming reorganizations are also at a higher level in MNEs in all countries at stake, except in Sweden. In that country five of six workers in non-MNEs expect reorganizations to happen in the next year, a share that even surpasses that of MNE workers. In the four countries for which experiences can be compared with expectations, the percentages for MNEs respectively non-MNEs are in the same order in Belgium and Germany, while for Poland and the UK the differences are smaller. In Belgium, Germany and the UK a higher percentage of respondents in both MNEs and non-MNEs expected reorganizations for the year to come than the share that ticked that these took place in the year before; this is not the case in the Polish MNEs.

Our last issue related to job quality is job satisfaction and job insecurity (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.

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

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

Table 16a reveals that in seven out of the eight countries for which the data enables comparisons between categories of firms, the job satisfaction scores are higher for MNEs, mostly slightly but in Sweden considerably. The results are reverse for Poland, where the scores of non-MNE workers are slightly higher. Looking at the total figures, it remains remarkable that the outcomes for Hungary, Spain and the UK (on average 3.1-3.2) are considerably lower than those for the other six countries (on average 3.4-3.6).

We can present data for job security only for three countries, Germany, the Netherlands and Poland. Table 16b indicates that in Poland feelings of job insecurity are higher in MNEs than in non-MNEs, while Germany shows the opposite. This is in concordance with the outcomes on job satisfaction in both countries. The Netherlands shows a neutral outcome, though in that country job satisfaction was slightly higher in MNEs.

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 metal and electronics manufacturing by country

		DE	NL	PL
MNE	Security in job	2.3	2.3	2.5
No MNE	Security in job	2.4	2.3	2.4
Total	Security in job	2.4	2.3	2.5

It is interesting to observe, based on the results presented above, possible relations between three aspects: the incidence of reorganizations, worker insecurity and job satisfaction in MNEs. If worker insecurity in MNEs is enlarged through more reorganizations (which is possible), that insecurity obviously does not automatically translate into lower levels of job satisfaction. Other aspects of working in a MNE, like the comparatively high wage level and/or better career prospects, may form compensating elements, notably in metals and electronics manufacturing.²⁴

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 (next page) shows that the length of the working work is quite long in metal and electronics manufacturing at large: over-all from 2% (Sweden) to 22% (Poland) and even to 35% (Hungary) of the respondents ticked that they usually work over 48 hours per week. These figures are much higher than those we gathered earlier based on the *WageIndicator*

²⁴ 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.

for the manufacturing industry at large in mostly the same countries.²⁵ Moreover, in six of eight countries for which we have adequate information, the average usual working hours per week are longer in MNEs than in non-MNEs, notably in Belgium and Sweden much longer.

Table 17 *Distribution over three categories of usual working hours and average usual working hours in MNE and non-MNE firms in metal and electronics manufacturing by country*

		BE	FI	DE	HU	NL	PL	ES	SW	UK
MNE	0-20 hrs (col %)	6	10	8		9	7	8	2	11
MNE	>20-40 hrs (col %)	57	72	43		56	39	51	89	54
MNE	>40-48 hrs (col %)	27	12	33		19	32	26	6	20
MNE	>48-80 hrs (col %)	10	6	16		16	22	15	2	14
MNE	Total (col %)	100	100	100		100	100	100	100	100
No MNE	0-40 hrs (col %)	12	7	10		10	5	8	12	10
No MNE	>20-40 hrs (col %)	58	78	44		60	53	49	82	54
No MNE	>40-48 hrs (col %)	17	10	32		18	23	26	6	22
No MNE	>48-80 hrs (col %)	13	5	14		12	20	17		14
No MNE	Total (col %)	100	100	100		100	100	100	100	100
Total	0-40 hrs (col %)	8	9	9	8	10	6	8	4	10
Total	>20-40 hrs (col %)	57	74	43	35	58	45	51	88	54
Total	>40-48 hrs (col %)	23	11	33	23	18	27	25	6	21
Total	>48-80 hrs (col %)	12	6	15	35	14	22	16	2	15
Total	Total (col %)	100	100	100	100	100	100	100	100	100
MNE	Usual working hours	39.7	36.9	39.8		39.3	42.1	40.5	39.6	37.8
No MNE	Usual working hours	37.4	38.1	39.0		38.2	41.5	40.3	36.2	38.1
Total	Usual working hours	38.9	37.5	39.5	43.7	38.8	41.9	40.4	38.7	38.1

In most countries, the share of the workers with very long working weeks confirms this picture. In five countries, Finland, Germany, the Netherlands, Poland and Sweden this share is higher in MNEs than in non-MNEs. It is at par in the UK, and lower in MNEs in Belgium (though in that country those with 40-48 hours obviously make the difference) and Spain. The tendency to be derived from our evidence on working hours is contrary to the rather optimistic tendency in the literature, both from the side of the ILO as well as from HRM proponents, suggesting that FDI will at least not work out in the direction of longer working hours.²⁶

The answers concerning overtime give indications in the same direction as those concerning the length of the working week. As Table 18 (next page) shows, large majorities of the metal and electronics workers have agreed working hours; except for Belgium, this share is at par or slightly higher in the MNEs. Yet, the percentages usually working more hours than those

²⁵ Van Klaveren & Tijdens, *op. cit.*, 31-37.

²⁶ Cf. David Kucera (2002) Core labour standards and foreign direct investment, *International Labour Review*, 141(1-2): 31-66; Sully Taylor (2007) Creating social capital in MNCs: the international human resource management challenge, *Human Resource Management Journal*, 17(4): 336-354.

agreed are very high. Hungary scores a disquieting 63%, but the average score for Germany is hardly lower (61%), though the incidence of very long working weeks is lower in that country. Somewhat astonishing is that over half of the Swedish metal and electronics workers (51%) indicate to regularly working overtime. In all eight countries for which we have sufficient data, the incidence of overtime is higher in MNEs than in non-MNEs, in Poland (17%-points), Finland (95-pts) and the Netherlands (12%-pts) even substantially higher.

In only four countries we were able to gather information on shift or irregular work, to be compared between MNEs and non-MNEs. In all four the incidence of such work was higher in MNEs than in non-MNEs, in three countries (Belgium, Spain and Sweden) even considerably higher.

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 metal and electronics manufacturing by country

		BE	FI	DE	HU	NL	PL	ES	SW	UK
MNE	Working hours agreed	82%	96%	97%		97%	97%	87%	88%	97%
No MNE	Working hours agreed	84%	95%	96%		96%	95%	83%	88%	96%
Total	Working hours agreed	84%	95%	96%	94%	97%	96%	85%	88%	97%
MNE	Usual more working hours	49%	28%	63%		52%	57%	40%	52%	51%
No MNE	Usual more working hours	46%	19%	59%		40%	30%	36%	50%	46%
Total	Usual more working hours	48%	23%	61%	63%	45%	43%	37%	51%	49%
MNE	Shifts or irregular hours	22%	-	-		18%	-	21%	6%	-
No MNE	Shifts or irregular hours	15%	-	-		15%	-	14%	0%	-
Total	Shifts or irregular hours	22%	-	-	35%	17%	-	17%	5%	-

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.²⁷

We will discuss three training-related issues here. The first relates to the incidence of employer-paid or provided training, and is based on the question: “Over the past 12 months,

²⁷ 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; OEC/ILO, 2008, *op. cit.*

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 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.

Table 19 shows that in all seven countries for which we gathered data, the incidence of employer-received/paid training is considerably higher in MNEs than in non-MNEs: from 17%-points in the Netherlands till 27%-pts in Germany. The same holds true for duration (number of days received in last year); the ratios MNEs : non-MNEs are more or less similar for both yardsticks. Somewhat surprisingly, both incidence and duration are much more generously spread in notably Poland and the UK than in Germany and Sweden. These results seem to confirm the evidence concerning on-the-job training we just cited.

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 metal and electronics manufacturing by country

		BE	DE	HU	NL	PL	ES	SW	UK
MNE	Received training from employer (Y/N)	73%	63%		67%	75%	51%	84%	72%
No MNE	Received training from employer (Y/N)	49%	36%		51%	53%	31%	65%	55%
Total	Received training from employer (Y/N)	64%	50%	54%	58%	61%	41%	79%	64%
MNE	No of days training received from employer in last year	6.1	4.2		6.8	8.0	7.2	4.3	9.3
No MNE	No of days training received from employer in last year	3.8	2.1		5.1	4.1	5.0	2.1	7.8
Total	No of days training received from employer in last year	5.3	3.3	8.8	5.9	6.2	6.1	3.8	8.7
MNE	Self-paid training (Y/N)	19%	23%		14%	45%	27%	4%	17%
No MNE	Self-paid training (Y/N)	16%	21%		13%	29%	25%	6%	20%
Total	Self-paid training (Y/N)	19%	22%	26%	14%	37%	26%	4%	19%
MNE	No of days self-paid training in last year	3.7	3.6		2.1	6.1	8.8	0.2	3.1
No MNE	No of days self-paid training in last year	3.3	3.5		2.2	3.7	9.4	0.1	4.6
Total	No of days self-paid training in last year	3.7	3.6	6.3	2.4	5.0	9.2	0.1	3.8
MNE	Finds training would be worthwhile	3.3			2.8	3.4	3.2		
No MNE	Finds training would be worthwhile	3.0			2.7	3.1	3.1		
Total	Finds training would be worthwhile	3.2			2.7	3.2	3.2		

Obviously the incidence and duration of self-paid training is not closely related to those of employer-provided training, neither in MNEs nor in non-MNEs. In five countries the incidence

of self-paid training is higher in MNEs, mostly slightly and in Poland substantially, but in Sweden and the UK it is slightly lower. In all countries the propensity (or pressure?) to follow training courses shows up as much higher in MNEs than in domestic firms. Against this backdrop, it comes as no surprise that the respondents' assessment of the importance of training turns out to be higher in MNEs too. As the lower part of the table shows, this is the case in all four countries for which we have data available (Belgium, the Netherlands, Poland, and Spain).

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).

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

		BE	FI	DE	HU	NL	PL	ES	UK
MNE	Member of trade union	45%	67%	21%		21%	16%	19%	20%
No MNE	Member of trade union	46%	64%	14%		22%	15%	18%	12%
Total	Member of trade union	45%	65%	18%	18%	21%	14%	18%	16%
MNE	Covered by collective agreement	84%		67%		77%		76%	28%
No MNE	Covered by collective agreement	61%		32%		83%		59%	13%
Total	Covered by collective agreement	76%		52%	49%	80%		67%	21%
MNE	In workplace empl representation	76%		81%		77%	59%	83%	44%
No MNE	In workplace empl representation	43%		38%		37%	51%	60%	22%
Total	In workplace empl representation	65%		62%	58%	56%	54%	71%	34%

The results, presented in the upper third of Table 20, concerning trade union membership do not allow a clear conclusion. In metal and electronics manufacturing union density rates mostly do not differ that much between MNEs and non-MNE firms, with two exceptions: in Germany density in MNEs scores 7%-points better and in the UK even 8%-points. In general there does not seem to be a case (anymore) against unionization in MNEs, though some firms can form nasty exceptions. It may be interesting to note that the outcomes in three of the four other industries show the same picture; the exception is the transport and telecom sector, where the situation in MNEs turns out to be less favourable from a union viewpoint.

The outcomes concerning collective bargaining coverage and workplace employee representation, covered by Table 20 too, are remarkable. In the five countries for which we

are able to analyse and compare collective bargaining coverage, MNEs in four countries (Belgium, Germany, Spain, and the UK) show a much higher coverage than non-MNEs, the exception being the Netherlands, be it with a generally high coverage.²⁸ This pattern repeats itself in the four other industries.

For workplace employee representation the results are even univocally in favour of the MNEs. In all seven countries for which we can compare data, the incidence of such representation is much higher in MNEs than in non-MNE firms, in Germany, the Netherlands and the UK even (more than) double. Most likely the larger average scale of MNE establishments works out in favour of both collective bargaining coverage and workplace employee representation in MNEs.

13. Conclusions

Concerning FDI and internationalization in metal and electronics manufacturing, the following picture emerges:

- The metal and electronics MNEs included in our database are modestly diversified, owning on average 2.3 subsidiaries.
- Metal and electronics manufacturing shows the highest level of internationalization of the five industries: subsidiaries have on average 5.8 establishments, implying that an average subsidiary is involved in between five to six countries out of 12.
- The USA, Germany and Japan prevail as home countries of retail MNEs; the very high percentage of 46% of metal and electronics MNE establishments in the 12 countries are owned by MNEs from outside the EU.

Concerning the social effects of FDI in metal and electronics, our main conclusions are:

- In all seven countries under scrutiny hourly wages in MNEs are substantially higher than in domestic metal and electronics manufacturers, though these MNE premiums vary widely across countries (10 to 27%). This picture remains intact for the various working hours' categories.
- Through a breakdown in establishment size categories it turns out that the MNE wage premium is lowest in the category with 100-500 employees; in Finland large domestic firms pay considerably more.

²⁸ For the Netherlands Fortanier, *op.cit.*, 185, found a lower collective bargaining coverage in establishments of US and Japanese firms.

- All seven countries show a considerable gender pay gap, from 9% in Finland to even over 30% in Spain. In five of seven countries the gaps in the MNEs exceed those in non-MNE firms.
- 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, though for Spain the influence is significant but not very strong and for the UK significant but rather weak. There are no significant differences for Belgium and Finland. The influence of working in a MNE is by far highest for Poland, followed by Germany and the Netherlands.
- Except for Poland, MNE pay less overtime compensation while workers in MNEs more often perform more working hours than agreed; this means that the weekly and monthly wage premiums in MNEs mostly are smaller than the hourly ones.
- The scores on work-stress related issues in MNEs respectively domestic firms are mixed, implying that our results are inconclusive concerning the question whether working for an MNE generates more stress.
- Except in Poland and Spain, 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; in comparable cases about the same share of workers expects reorganizations in the year to come.
- Except for Poland, job satisfaction in metal and electronics MNEs is at par or slightly higher than in domestic competitors.
- Except in Finland and the UK, the average usual working week is longer in MNEs. Notably the share of part-time jobs is mostly higher in domestic firms.
- In all seven countries under scrutiny the incidence of employer-received/paid training as well as the number of average training days is higher in MNEs than in non-MNEs.
- In five of seven countries, union density is higher in MNEs, while in Belgium and the Netherlands it is slightly higher in domestic firms.
- In four of five countries for which we have adequate data collective bargaining coverage is much higher in MNEs; the Netherlands is the exception here.
- In all six countries with adequate data the incidence of workplace representation is much higher in metal and electronics MNEs, mostly even (nearly) double.

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ANNEX. TABLES

Table 21 50 largest (total sales 2006) and most internationalized (threshold: in 3 of 12 countries) MNEs in 12 countries in metal and electronics manufacturing, March 2008

MNE	subs	NACE	BE	DK	FI	FR	DE	HU	IT	NL	PL	ES	SW	UK	Tot.	Man.
Alcoa (US)	3	2700	x	x	x	xx	xx	x	x	xx	x	x	x	xx	12	4
(RT) Alcan (CA)	1	2700	x	x	x	xx	x	x	x	xx	x	x	x	xx	12	3
ArcelorMittal (IN)*	5	2700	xx	x	x	xx	xx	x	x	x	xx	x	x	x	12	4
ThyssenKrupp	5	2700	x			xx	xx	x	xx	x	xx	xx	xx	x	10	6
Tata Gr (IN)*	6	2700	x	x	x	xx	xx	xx	x	xx	x	x	x	xx	12	5
ABB (SW/CH)	4	2900	x	xx	x	x	xx	x	x	x	x	x	xx	x	12	3
Electrolux Group	2	2900	x	x	x	x	x	x	xx	x	xx	x	xx	xx	12	4
Gen. Electric (US)	4	2900	x	x	x	xx	xx	xx	x	xx	x	x	x	xx	12	5
Apple (US)	1	3000		x	x	x	x	x	x	x	x	x	x	x	11	0
Cisco Systems (US)	2	3000	x	x	x	x	xx	x	x	x	x	x	xx	xx	12	3
Dell (US)	1	3000	x	x	x	x	x	x	x	x	xx	x	x	x	12	1
Hewlett-Pack. (US)	1	3000	x	x	x	xx	x	x	x	x	x	x	x	x	12	1
IBM (US)	2	3000	x	x	x	x	x	x	x	x	x	x	x	x	12	0
Intel (US)	1	3000	x	x	x	x	x	x	x	x	x	x	x	x	12	0
Sony (JP)	2	3000	x	x	x	x	x	x	x	x	x	xx	x	xx	12	2
Matsushita El. (JP)	1	3000	x		x	x	x	x	x	x	x	x	x	xx	11	1
Ricoh (JP)	1	3000	x		x	x	x	x	x	x	x	x		x	10	0
Toshiba (JP)	4	3000	x	x	x	x	x	x	x	x	x	x	x	x	12	0
Robert Bosch	4	3100	x	x	x	xx	xx	xx	x	xx	xx	x	x	x	12	5
Honeywell Int'l (US)	1	3100	x	x	x	x	x	x	x	x	x	x	x	x	12	0
Motorola (US)	2	3100	x	x	x	x	xx	x	x	x	x	x	x	x	12	1
Siemens AG	5	3100	x	x	x	xx	xx	xx	x	xx	xx	xx	x	xx	12	7
Royal Philips Electr.	4	3200	xx	x	x	xx	xx	xx	x	xx	xx	x	x	x	12	6
Nokia	1	3200	x	x	xx	x	x	x	x	x	x	x	xx	x	12	2
Canon Inc (JP)	1	3200	x	x	x	x	x	x	x	x	x	x	x	x	12	0
Hitachi (JP)	3	3200	x	x	x	x	xx	x	x	xx	x	x	x	xx	12	3
Ericsson	3	3200	x	x	xx	x	x	xx	x	xx	x	x	xx	xx	12	5
Samsung (KR)	1	3200	x	x	x	x	x	x	x	x	x	x	x	x	12	0
Xerox Corp (US)	1	3300	x	x	x	x	x	x	x	x	x	x	x	x	12	0
Volvo AB	9	3400	xx	x	xx	xx	x	x	x	x	xx	x	xx	x	12	5
BMW AG	3	3400	x	x	x	x	xx	x	x	x	x	x	x	xx	12	2
Daimler AG	6	3400	xx	x	x	xx	xx	x	x	xx	x	xx	xx	xx	12	7
Fiat Spa	4	3400	x	x	x	x	x	x	xx	x	x	xx	x	xx	12	3
Ford Motor (US)	6	3400	xx	x	x	x	xx	x	x	x	x	xx	xx	xx	12	5
General Motors (US)	8	3400	xx	x	x	x	xx	x	x	x	xx	xx	xx	xx	12	6
Honda (JP)	3	3400	x	x	x	x	x	x	x	x	x	x	x	xx	12	1
Hyundai Motor (KR)	2	3400	x	x	x	x	x	x	x	x	x	x	x	x	12	0
Mazda Motor (JP)	1	3400	x	x	x	x	x	x	x	x	x	x	x	x	12	0
Mitsubishi Mot. (JP)	2	3400	x	x	x	x	x	x	x	x	x	x	x	x	12	0
Nissan Corp (JP)	2	3400	x	x	x	x	x	x	x	x	x	x	x	xx	12	1
Paccar (US)	2	3400	x	x	x	x	x	x	x	xx	x	x	x	xx	12	2
PSA	5	3400	x	x	x	xx	x	x	x	x	x	xx	x	x	12	2
Renault	5	3400	x	x	x	xx	x	x	x	x	x	x	x	xx	12	2
Suzuki Motor (JP)	2	3400	x	x	x	xx	xx	xx	xx	x	x	x	x	x	12	4
Toyota Motor (JP)	2	3400	x	x	x	x	x	x	x	x	x	x	x	xx	12	1
Volkswagen Group	10	3400	x	x	x	x	xx	xx	x	xx	x	xx	xx	xx	12	6
Alstom	2	3500	x	x	x	x	x	x	x	x	x	x	x	x	12	1
Boeing (US)	1	3500	x	x	x	x	x	x	x	x	x	x	x	x	12	0
EADS	8	3500				xx	xx	x		x		xx		xx	6	4
BAE Systems	5	3500	x	x	x	x	x	x	x	x	x	x	x	xx	12	1
	164		BE	DK	FI	FR	DE	HU	IT	NL	PL	ES	SW	UK		
No. comp/home c.			0	0	1	3	6	0	1	2	0	0	4	1	18	
No. comp/home c.		other													32	
Tot. companies															50	
No. subsidiaries															164	
No. establish./1			48	46	48	50	50	50	49	49	49	50	48	50	587	
No. establish./2			79	72	74	81	85	74	76	80	75	76	75	81	928	
Of which manuf./1			6	1	3	16	19	8	4	9	9	10	11	24		120
Of which manuf./2			13	3	10	33	39	12	14	19	14	18	25	37		237

Bold x = home country

xx = sales, warehousing, services / manufacturing

Table 22 50 largest firms in metal and electronics manufacturing, worldwide, 2006

Ranking		Country	Sales (mln. USD)	Foreign share sales	Ranking employment x)	Employment (no employees)	Foreign share employ
1	General Motors	US	207,349	37	12	280,000	60
2	Toyota Motor	JP	205,918	38	9	299,394	38
3	Daimler/Chrysler AG	DE/US	190,176	43	2	360,385	27
4	General Electric	US	168,307	45	7	319,000	51
5	Ford Motor	US	160,126	49	11	283,000	55
6	Volkswagen Group	DE	132,323	73	6	324,875	48
7	Siemens AG	DE	107,342	68	1	475,000	66
8	Honda Motor	JP	94,791	81	19	167,231	89
9	Hewlett-Packard	US	91,658	65	21	156,000	65
10	IBM	US	91,424	61	3	355,766	65
11	Nissan Corp	JP	89,502	76	16	186,336	50
12	Samsung Electronics	KR	89,476	78	24	138,000	38
13	Hitachi Ltd	JP	87,615	32	4	349,996	35
14	Matsushita El. Ind.	JP	77,817	49	5	328,645	50
15	PSA	FR	71,006	46	14	211,700	42
16	Sony Corp	JP	70,924	73	20	163,000	64
17	Hyundai Motor	KR	66,666	44	37	68,000	34
18	Fiat Spa	IT	65,026	71	17	172,012	56
19	Boeing	US	61,530	70	18	169,000	13
20	BMW AG	DE	61,472	78	30	106,575	25
21	Toshiba	JP	60,842	50	23	144,000	79
22	Mittal Steel	IN	58,870	80	8	316,224	79
23	ThyssenKrupp	DE	57,927	66	15	187,586	55
24	Dell	US	55,908	39	35	78,700	?
25	Robert Bosch	DE	54,940	?	12	260,000	42
26	Renault	FR	52,099	65	25	128,893	47
27	Nokia	FI	51,588	99	39	65,324	63
28	EADS	NL	49,472	79	28	116,805	?
29	Motorola	US	43,739	49	38	66,000	?
30	Mitsubishi Motors	JP	43,198	75	43	55,867	?
31	Intel	US	38,826	84	31	105,000	?
32	Royal Philips Electr.	NL	38,707	89	27	121,732	86
33	Canon Inc.	JP	35,727	76	47	23,200	?
33	Volvo AB	SW	35,081	95	33	83,190	67
35	Honeywell Int'l	US	31,307	?	32	102,000	?
36	Alcoa	US	30,379	44	26	123,000	65
37	Tata	IN	28,800	?	10	289,500	?
38	Cisco Systems	US	28,434	?	45	50,125	36
39	Mazda Motor	JP	27,765	?	22	149,000	32
40	Suzuki	JP	27,408	?	46	45,000	54
41	ABB	CHSW	24,883	?	29	108,160	?
42	Ericsson	SW	24,102	?	41	63,781	73
43	Alcan	CA	23,696	86	40	65,000	83
44	BAE Systems	UK	22,691	78	34	79,000	66
45	Apple Computers	US	19,305	28	50	11,000	89
46	Alstom	FR	18,754	?	49	21,000	64
47	Ricoh	JP	17,865	?	36	75,900	?
48	Paccar	US	16,454	22	48	21,200	?
49	Electrolux Group	SW	16,382	?	42	56,000	?
50	Xerox	US	15,895	?	44	53,700	?
	TOTAL		3,241,362	63*)		7,917,802	56 **)

x) = only in this table

*) = unweighted, 38 firms

**) = unweighted, 37 firms

Sources: UNCTAD (2008) *World Investment Report 2008*; *Forbes Global 2000*, 2007; company websites; company Annual Reports 2006; various news reports