Geographies of Uneven Development
Working Paper
Network-based mass production, Transnational Neo-Taylorism, and Socio-Spatial Fragmentation in the Global and European IT Industry

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Abstract

This working paper takes Electronic Manufacturing Services (EMS) as a paradigmatic example to discuss contemporary transnationalized production and its impact on labour and labour processes. EMS is a specific form of supply-industry in the Electronic sector. It illustrates how former (“Fordist”) vertically integrated production is replaced by the spatial separation of innovation and manufacturing and the acceleration of firms’ cost and capability competition. With the concentration of the capital-intensive race for ‘breakthrough-innovations’ on so-called flagships or brands on one side, large transnational networks of highly flexible mass-production occur on the other. They de facto function as variable buffers and are located particularly in the peripheries of the three mega-regions of the world. Labour and labour processes are organized in world-wide just-in-time parameters and are globally standardized. However, for labour this integration into modern global production does not translate into so-called social upgrading. Instead, labour processes are marked by rather repressive neo-Taylorist working regimes, (very) low wages and comprehensive social fragmentation. These parameters are illustrated and deepened with the focus on the Central and Eastern European region and a corresponding theoretical framework that sheds light on the polit-economic side of contemporary Europeanization, i.e. competitive European integration.

Keywords: labour, labour geography, electronic manufacturing services, transnational production, Europeanization, neo-Taylorism, fragmentation, Central and Eastern Europe, periphery.

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1 Introduction

The following text is based on the book “From Silicon Valley to Shenzhen. Global Production and Work in the IT industry”, written by Boy Lüthje, Stefanie Hürtgen, Peter Pawlicki and Martina Sproll (Lüthje, Hürtgen et al. 2013). It compiles some of the main arguments and brings them together with what I call the competitive Europeanization framework, i.e. a mode of European economic integration that systematically not only fragments regions and nation-states, but also labour processes (Hürtgen 2019). In the book, we analysed production and work in a specific electronic supply industry, the so-called Electronic Manufacturing Services (EMS). These are important but little-known worldwide production networks of firms such as Flextronics, Celestica, Solectron and others. They command comprehensive resources in production, technology, and logistics but do not appear in connection with the product. EMS, therefore, is characterized as stealth manufacturing. We asked about the global configuration of this production system and its social and regional impact in all three mega-regions of the world, and in particular in their corresponding peripheries (Europe/Central and Eastern Europe; America/Latin America; Asia/South-East Asia). This project was based on extensive field work, including interviews with management, trade unions, NGOs etc. and notably (sometimes repeated) factory visits; in the CEE-region we investigated 25 facilities in Poland, Hungary, Romania and Estonia and included interviews and fieldwork in Western Europe (Scotland, Germany, France). The competitive Europeanization framework is based on discussions from critical European political economy and economic geography (Brenner 2004), with the latter particularly emphasizing intra-national uneven development via “competitive regionalism”.

The text, first, gives insights into the functioning of EMS as an inherently transnational production model, i.e. the literally global organization and dynamics of production. Notably, it shows the highly contradictory impact for social and regional development in “low-cost-regions”, in particular with regard to work and employment. In fact, it has been a key goal of our research to bring the labour process back into the debate on “global production networks”. The integration of labour into the analysis shows that euphemistic predictions of “social upgrading” and development via Foreign Direct Investment (FDI) must be questioned (Barrientos et al. 2011; Bair & Werner 2015). In its second part, the text concentrates on the region of Central and Eastern Europe (CEE) and brings together the findings from labour and production processes with polit-economic and geographic dimensions of contemporary Europeanization.

2 Electronics Contract Manufacturing: A Transnational System of Production

Electronics contract manufacturing emerged from the massive restructuring of the US information technology industry that began in the 1980s and was centred in Silicon Valley and other high-tech districts of the United States. Here, an industrial structure developed that was no longer dominated by vertically integrated giant corporations such as IBM but rather was shaped along the horizontal lines of specialized suppliers of key components such as computer chips, software, hard disk drives, and graphics cards (Grove 1996). In this context, EMS as a new type of manufacturing emerged. The companies in this segment offered, as opposed to the traditional subassembly of certain products or components, all essential elements of the production, procurement, coordination of the value chain in manufacturing and logistics that are required to manufacture electronics products. This new dimension of outsourced manufacturing was provided as a service with the EMS companies as service provider and the Original Equipment Manufacturer (OEMs) as “customers” (Lüthje & Sproll...
EMS developed in all areas of electronics manufacturing, especially in the automatic and manual assembly of printed circuit boards (PCB), the final assembly and configuration of equipment and systems, the production of non-electronic supplies and components, such as plastic parts, metal enclosures, and cable assemblies, and even product development, materials procurement, distribution, and after-sales services (Sturgeon 1999).

During the 1990s internet and IT-boom, rapidly growing EMS companies evolved as important global players within the IT industry, with average growth rates of 25 percent or more. The leading companies of the new industry segment, Flextronics, Solectron, Celestica, Jabil Circuits and others grew almost from scratch into corporations with annual revenues of sometimes over US$10 billion. Growth was achieved particularly through the acquisition of OEMs. This was an international process with takeovers of major fully-fledged manufacturing brand-name facilities in North America, Mexico, and Europe - in the latter headed by US-Firms (IBM, Texas Instruments, and Lucent) but quickly followed by European Electronic and Telecommunications manufacturers (Ericsson, Siemens, Alcatel and others). From the beginning, geographic restructuring of production was comprehensive with low-cost regions in the focus: the preferred offshore locations of the US-new economy were Singapore, Malaysia, and Taiwan, together with Mexico and the low-cost regions in “old” Europe (Northern-England). After the mid-1990s, the CEE-region was rapidly integrated into transnational production, followed by China at the end of the 1990s. EMS occurred as a genuine transnational and highly flexible production system, which allocates different functions and resources in manufacturing, product design, and logistics among the three major regions of the triad of the capitalist world market and their respective low-cost locations.

This process is propelled by financial markets. EMS firms are financed through institutional investors, with ample capital flowing from investment banks, pension funds, and other financial organizations. Financial speculation regularly results in bursting the bubble, as during the deep crisis of the “New Economy” in 2001–2002 (see below).

In opposition to Fordist models of manufacturing, most electronics and IT products have become complex commodities, assembled from globally traded parts and components supplied by various industry segments. Hierarchical and monopolistic control of the branch, therefore, has become a question of being able to define and control technological norms and interfaces (Lüthje 2001; Machacek & Hess 2018). Market control has shifted from assemblers to “product definition companies”. Product innovation, therefore, is increasingly separated from manufacturing and the former Fordist “supplier pyramid” governed by large-scale, final assemblers is replaced by networks of inter-acting industry segments with the “core” or “brand-name” firms at the centre. Vertical disintegration, i.e. large-scale outsourcing and concentration on “core” capacities, echoes the changing political economy with a capital-intensive race for “breakthrough innovations” (Florida & Kenney 1990). Spatially, with the separation of innovation from manufacturing, the former interest in keeping manufacturing geographically close to the brand-name headquarters gets lost. Cost and capability competition is accelerated, i.e. the need for modern and highly flexible production

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1 Given the fast changing (world-) market conditions and business configurations in the electronics industry, some of the important and big companies meanwhile have been taken over, for example SCI by Sanmina or Solectron - with an impact on global supply chains and portfolio and production sites also in CEE (the closure of the former EMS company Elcoteq or the brand name Nokia in Hungary, for example).

2 The term “Wintelism” is a theoretical condensation of this new configuration, combining metaphorically the powerful, standard-setting “flag-ship” names Windows and Intel which for their part have no or largely outsourced manufacturing (Borrus et al. 2000).
capacities which are, however, under strong cost-pressure, also in times of economic boom (Yeung & Coe 2015) – due to the highly contingent market-development, strong rivalry for market leadership and short, often disruptive market and product cycles. EMS, in this scenario, serves as a low-cost buffer for brand-name companies, and the enormous expansion into the global low-cost regions, among them CEE, shows this aspect.

Also for that reason, OEM-EMS network formations are highly hierarchical. Transnational flexible production must not be confused with “flat” networks (Gereffi et al. 2005). Price masking schemes by the brands, squeezing the profit-margins of EMS companies, are common as well as the imposition of basic technological and spatial decisions (where to relocate).

As a result of the bursting of the IT-stock market bubble in 2001, the massive downturn and devaluation of EMS and IT in general (Brenner 2002), a profound transnational restructuring of the branch was the consequence. This restructuring combined recentralization of capital on the one hand (with major EMS companies disappearing or being taken over) and a new wave of outsourcing of production by brand-name companies on the other. The geographical dimension, hereby, is of particular importance, i.e. the shift of manufacturing orders to Taiwanese contract manufacturers. The latter, up to the late 1990s were primarily low-cost providers of electronics components, even rather complex ones, being particularly attractive because of their large-scale use of very cheap labour in China. This development is symbolized by the rapid rise of the formerly almost unknown contract manufacturer, Foxconn, a subsidiary of Hon Hai, Taiwan’s largest industrial conglomerate since the millennium. Foxconn conquered global EMS markets with extremely low prices and a highly integrated manufacturing organization; it rapidly acquired orders from major US IT firms and European brands. The rise of Foxconn, with double-digit revenue growth rates of up to 60 percent per year, fundamentally altered the global hierarchy among contract manufacturers, previously dominated by US companies. Consequently, the millennium saw the beginning of the massive shift of EMS production to China. In fact, China as a mass-low-cost production site has become the main reference for managers and their geographic strategies. The crisis of 2008–2009 brought about a certain replay of this scenario but with some important modifications. This time, plant closures and layoffs were greatest in China. Yet, at the same time, major brand-name firms from Taiwan and China were among the major beneficiaries of the crisis. Companies such as Acer, Lenovo, and Huawei finally emerged as global network leaders.

3 Transnational Neo-Taylorism and Upgrading at Low Cost

3.1 Global standardization of work and production

Contract manufacturers use standardized systems of corporate, factory and work organization around the globe. In the EMS industry as a transnational flexible production, organized in world-wide just-in-time-parameters, but also in most other main sectors of export-led industrialization in general, norms of production and technology are essentially transnational in their nature. Standardization, notably based on digitalization, enables flexible interfaces and hence changeable

3 Additionally, a new model in electronics, the so called ODM (Original Design Manufacturing) emerged from Taiwan. It is similar to EMS, but with comprehensive service in product design and some own intellectual property, and it sharpened competitive pressure on EMS (see also Pawlicki 2016).
configurations in scale and scope. \(^4\) Individual configuration (customization) is ‘postponed’ whereas standardized machinery, common interstage-products and components are used as much as possible (Forrester 2015). As to governance, standardization allows the quantification and permanent comparison of economic parameters among locations, business units or cost centres.

In EMS, transnational standardized programs and procedures in the management of material flows, sourcing and the supply chain, and in quality management are the rule. They are operating along global, company-wide quality audits and certification procedures, corporate campaigns and instructions and what the companies call “common processes” of work organization, down to the single steps in product assembly, for example via target-definitions, visualisation and corporate competitive campaigns. Quality, target and discipline management are typically based elements of lean or agile production, combining exploitive pressure with the governance of “self-enhancement”. Audits are performed on a regular basis, for example every two weeks, and they also entail elements of social compensation systems such as variable-bonus wages. Quality management is typically organized through a system of vertically structured (customer-oriented) quality teams, starting on the shop floor and controlled by ever higher levels of management.\(^5\) Hence, EMS companies are pioneers in producing a global unification of labour processes, even when similar tendencies are also visible in other industries such as the automotive or garment industries.

As a consequence, technology conditions appear highly uniform between locations since the same manufacturing systems and equipment are used. Factories, also those in low-cost locations, have a similar technological level to those in the production sites in the older industrialized countries. So, EMS factories typically offer a relatively acceptable work environment when it comes to clean and air-conditioned buildings with good lighting conditions. EMS low cost production, hence, must not be confused with an image of dark backyards with little sweatshops. Transnational and flexible mass production in the electronics industry is modern production, world-wide. This applies all the more as EMS facilities in low-cost locations only for a very short time of a few years served as “extended workbenches”, i.e. as dependent sites focussing on low-volume-assembly. Instead they quickly developed into a sophisticated combination of high-volume production with customer- and product-specific flexibility as more and more complex manufacturing processes were shifted to low-cost locations, including new product introductions.

An impressive example for this development is Central and Eastern Europe (CEE), where the factories, built up since the mid-1990s, started as sub-units of Western-led factories, with the latter, many of them close to border regions, providing the bulk of the management. Western sites were, in the very beginning, also in charge of customer relations, purchasing management, and logistics and product introduction and prototyping were initially located here. Only mature products and processes ready for “stable” volume manufacturing would be transferred to the Eastern plants\(^6\).

\(^4\) “The relationship between globalisation and standardisation is reciprocal. On the one hand, standardisation enables a global division of labour by dividing work into individual pieces of processing; on the other hand, globalisation enforces standardization to adjust processes across the globe” (Will-Zocholl 2017: 82).

\(^5\) A system used globally by Flextronics to organize material flows (called demand flow technology) contained detailed rules for the design and organization of each workplace and a standardized description of work procedures. Basically, every worker has to check on the quality of the previous work step before beginning the next. Another system of this kind is Six Sigma, originally developed in Japan. This consists of a simple set of basic rules for workplace behavior, especially orderliness and timeliness.

\(^6\) Elcoteq’s facilities in Estonia were managed in this way from Finland, Flextronics’ Hungarian facilities from Austria, and Solectron’s site in Romania from three Western European plants in Germany, Scotland, and France.
However, all 25 CEE factories under investigation developed rapidly into relatively integrated factories, run “independently” by local management within the hierarchical corporate and branch structure. By 2000, they typically encompassed a broad spectrum of productive functions, including equipment maintenance, tool and die making, procurement, inventory management, and logistics. CEE sites also increasingly played a role in the design of electronic and non-electronic components and in product introduction. The considerable variety of metal, plastics, and cable supplies led to the differentiation of work processes. Significant sectors of skilled industrial work emerged, such as the maintenance of injection-moulding tools (Hürtgen 2007; Pawlicki 2012).

3.2 Upgrading at low cost

The growth of cutting-edge production complexes, however, does not translate into sustainable economic and, notably important, social development. EMS is a crucial example to show that transnational modern governance is not to be confused with “modern” labour policy in a progressive sense (see for only recent critical debates on that issue: Barrientos et al. 2011; Bair & Werner 2015; Krzywdzinski 2017; Hürtgen 2019). What we see, instead, is that companies try to remedy their firm’s insecurity and risks via offensive strategies towards the flexibilization and precarization of the labour force and the pressure on costs and wages. The increasingly neo-liberal world-wide political economy, with comprehensive deregulation of socio-political standards in both traditionally industrialized countries as well as “peripheral” regions serves as an adequate environment and catalyst for this policy. Technological and organizational upgrading, hence, has not produced a trend towards social upgrading, but something different: a rising fragmentation and polarization of the workforce.

This also applies to the EMS industry. While white collar-workers and specialists, also in the “peripheral” regions, do – to a different degree - experience improvements of working conditions and income, settings for blue-collar workers on the shopfloor remain particularly restrictive and repressive. This often huge gap in pay and working conditions reflects the companies’ efforts to attract engineering and technical talent while squeezing labour costs in manufacturing. Blue-collar-manufacturing, in particular in the “peripheries” is characterized by low and very low wages, typically even below regional or national standards. Not only in the traditional Global South but also in officially well-situated CEE-Countries, such as Poland or Hungary, blue-collar wages in production are often not enough to make ends meet (Meardi 2013; Schipper 2016). There is high competitive pressure on wages, executed via bonuses and other performance-related pay, including profit-sharing schemes to ensure “customer orientation”, and the quest for higher wages is – in this permanent competition – rather difficult for workers to achieve (see below).

Frequent and often abrupt changes in production contracts, volumes and portfolio are translated into extensive employment flexibility and a vast use of all sorts of precarious work and employment, not only in low-cost locations but increasingly also in the United States and Europe (Hürtgen 2009, 2019). Additionally, the flexible Neo-Taylorist transnationalization is commonly based on multiple forms of socio-spatial, ethnic and gender discrimination. The majority of workers in electronics assembly are typically women, and EMS companies seek systematically to employ rural and foreign immigrants with lower-wages and insecure jobs. Cultural division and discrimination are used by the companies to fragment the workforces and to increase pressure on wages and flexibility.
The legal standards are different between countries, and so are the relations between the local, national, and even transnational scales of government (for example, the EU’s role in deregulating labour markets in CEE, or the importance of “competitive regionalism” (Brenner 2004), manifested for example in Special Economic Zones). While relatively established, even profoundly weakened systems of labour relations in the West still exist, in the “peripheries” companies are de facto exempted from, or deny, existing national standards for wages, employment, and social security. Labour laws often do exist, but their enforcement through local and national governments is particularly weak in these areas. The CEE-region is, hereby, in a middle position, with on the one hand existing national and European labour law and representative systems but on the other often only formal exertion of, or even open attacks against, existing social and political rights by politicians and companies. Generally, in the low-cost-regions, collectively bargained standards for wages, working conditions, and working hours mostly do not exist at a regional or national level, with again CEE as a relative exemption with a few attempts to develop collective bargaining at the plant level and to integrate it with bargaining by national and European trade unions.

4 Competitive Europeanization and Central and Eastern European network-based mass production in the EMS industry

4.1 Competitive Europeanization and CEE as the new low-cost region

The electronics industry in the European states of the former Eastern Bloc historically served military defence needs for the arms race with the West. Vertically integrated government-owned companies dominated and often encompassed the entire industry of their respective countries. Companies such as Videoton in Hungary or Mera and Unitra in Poland employed as many as one hundred thousand employees. Electronics, however, also became a symbol for the growing technological gap between East and West. During the 1970s, CEE countries raised cheap credit on global financial markets to modernize and reconvert their national industries. However, the “computerization of the country” (Poland) or the “completion of the microelectronics revolution” (German Democratic Republic) was only partially successful, not least because of the global economic downturn during the 1970s. After the political upheaval of 1989 and fast market-liberalization, national electronics industries declined rapidly, at different speeds in various countries, but with massive layoffs everywhere. Western multinationals, which had already faced relative stagnation in the 1980s particularly in consumer electronics, benefited from enlarged markets and ousted CEE-companies quickly. Some early acquisitions of prime quality cases of CEE factories were to enable a market presence in the region, for example Philips in Hungary and Poland.

EMS companies have been present in Europe since the late 1980s, but firstly only in the West, via takeovers of brand-name manufacturing facilities and via the parallel setup of Western European low-cost locations, particularly in Wales, Scotland, and Ireland (see section 2). The United Kingdom and Ireland highly competitively and rather successfully attracted foreign capital, with massive investment from US and Japanese electronics manufacturers during the early 1990s. Ireland primarily used low taxes as an incentive (as the first European country to have abolished corporate income

7 In Poland, within one year sales by domestic electronics firms dropped by 50 percent between 1990 and 1991 and consumer electronics was quasi absent (Radosevic 2002; PAIZ 2001).
tax). Britain developed extensive support for foreign investors at national and local levels. In addition, both countries had a reputation for strong deregulation of labour markets and employer-friendly labour laws (MacKinnon & Phelps 2001; Raines 2003).

The CEE-region entered this scene only after 1997, with the extraordinary boom of the “new economy”, when new production facilities (“greenfield-investments”) were built in Hungary, Poland, the Czech Republic, Romania and Estonia, which soon employed tens of thousands of people and EMS companies became important players in national economies. Besides favourable labour laws and low labour costs (see below) the region has become particularly attractive due to the meanwhile established system of favourable low land costs and tax policies, in some countries such as Poland, with particular focus on the creation of special economic zones. Now, management explicitly marketed CEE as an alternative to the older Western European locations and in particular their low-cost sites.

What we see here paradigmatically, however, is the importance of the specific character of the Europeanization-process for transnational firm restructuring and the deepening of socio-spatial fragmentation and uneven development. In fact, since the mid-1970s the basic logic of the integration project changed from a macro-economic approach towards “neoliberal-negative integration” (Altvater & Mahnkopf 2007: 63ff.). In place of the previously envisaged Keynesian synchronization of socio-economic functions the integration project now explicitly retires from socio-political harmonization. While the rules for investment, capital transfer and (intra-firm) exchange-relations are generalized, the nationally different regularities can persist for socio-political regime competition as this would stimulate investment, trade and growth (Cecchini 1988). Socio-spatial unevenness, from now on, is not only accepted but institutionalized as it represents a difference that, potentially, can serve as a competitive advantage for integration via investment (Agnew 2001). Hereby, the new Europeanization project reflects and fosters national transformations from Keynesian Welfare States into “competition states” (Hirsch 1997; Cerny 1997) or “Schumpeterian Workfare States” (Jessop 1993). In a common market of commodities, services and capital different (national) socio-political regularities and conditions become competitive (supply) factors for firms and their rivalry for market-shares, profits and capabilities. In particular, “welfare” is transformed into “workfare”, as the institutional structure of the EMU combines the supranational conduction of monetary and market-liberalization policy with “national state responsibility for competitive labor markets” (Bonefeld 2012: 52). This new “competitive integration” project (Hürtgen 2019) has been programmatically pushed by transnational corporations and financial capital fractions and their lobby-groups (Apeldoorn 2002). In fact, their interest was and is to “explore the [European] differences in terms of wages, fiscal, social and environmental standards [as] a significant incentive for investment” and as a key driver of ongoing transnational competitive restructuring (Bohle 2006: 73). This is exactly what EMS companies did. From the beginning they relocated production and created a new “growth-region” in CEE. Management openly argued that, facing harsh global competition, the very low tax regimes, wages and incentives in the CEE-region must now be taken as an opportunity for transnational restructuring.

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8 Flextronics’ factory in Sárvár, Hungary, for instance, grew with the transfer of manufacturing from Hewlett-Packard in Spain, while its Polish factory took over production from Sweden, Solectron in Romania from Ireland etc.
Moreover, neoliberal European institutions together with transnational companies, well before the so called “Greek-crisis”, exercised open pressure on the CEE-countries in case there was any doubt of the path to follow. In Estonia the European Commission rejected the country’s new labour law, enacted in 2003, as incompatible with basic EU standards. The commission criticized low labour flexibility, substantial restrictions on overtime work, and too much participation from trade unions.⁹ The same was the case in Romania, where the primary source of pressure was the IMF, which pushed for a “return to Europe” and “adjustment to EU guidelines” as part of a major financial restructuring package in the wake of the country’s economic collapse in the late 1990s. Similar developments are reported in Slovakia. Each time, the associations of foreign employers exerted massive pressure behind the scenes. In Romania, the new national labour law, approved in 2003, was dubbed “incompatible with a free market economy” and repealed, as foreign investors and the IMF complained about exaggerated limitations on working hours and too much trade union influence (Ciutacu 2003; Preda 2004; 2004 interview data). These and other examples show the importance of socio-spatial unevenness in both the European integration project and the firm’s profitability interests.

4.2 Economic integration, global competition and uneven socio-spatial development

As already sketched out in section 3, the CEE-region experienced a quick technological and organizational upgrading process that neglects the once foreseen role as an “extended workbench”. CEE, however, was not, as often stated in public¹⁰, the pure “winner” of numerous closures in Western Europe during the crisis after the millennium (some of the factories acquired only a short time before). EMS reorganized their purchasing systems globally and, often under direct pressure from customers, moved production to China, while the new Taiwanese EMS or ODM manufacturers became the main competitors. Accordingly, CEE was also hit by losses of large-scale orders and customers, as for example HP or Kodak. Downsizing with massive layoffs followed. In short, integration implication into modern global production turned out to be implication into a firms’ harsh global competition.

The Management of CEE-facilities responds with basically two strategies, resulting in further restructuring of the branch. The first is to minimize costs by shifting production to “less developed” regions and countries in the East of the CEE-region: Eastern Hungary, Romania, the Ukraine or Croatia. The second strategy is to cope with Asian competition via the promotion of specialization on lower volume and niche products. The aim is to replace big customers with large numbers of diversified smaller volume production, close to final customers and markets. This strategy deepens and accelerates further technological and functional upgrading as with the growing number of smaller customers, the technological, logistical, and organizational complexity of production grows. Individual sites have to meet a much greater diversity of customer needs and undergo permanent strong quality improvements while “on the line”, since mistakes or delays may result in immediate cancellation of production contracts. So, the CEE-region, as well as the other “low-cost-regions” in the world we investigated, experienced what we have called insecure or precarious upgrading, i.e.

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⁹ According to the EU, more than two hundred hours of overtime work per year must be possible without negotiation with trade unions, the standard working week should be extended to forty-eight hours, and the compensation period for overtime should be extended from three to eight months (EIRO 2004).

¹⁰ “We Lose All Our Jobs to Hungary and Romania” newspapers in Scotland titled, referring to the plant closure by Jabil and Sanmina-SCI in 2003; however, the majority of production went to China.
technological and organizational modernization at a global-level combined with systematic instability of production. Accordingly, the EMS industry in CEE is marked by profoundly uneven and unstable socio-spatial development. On the one hand a series of new factories and enlarged production is documented, on the other hand, there is repeated short-term downsizing. Different sites are differently hit in time and space.

Still important to note is that local clustering, typically in the heart of political propaganda for incentives towards inward investment, is remarkably low in the CEE-region. Contrary to China, there is a remarkable lack of local cross-linkages, reflecting the absence of (European) government efforts to develop a more integrated manufacturing base. Hence, transnational state of the art production does not engender a related modernization of the respective regions. The metaphor of “cathedrals in the desert” (initially coined for new factories in Italy’s mezzogiorno regions) also fits here. Often, roads and other new infrastructure were built by local governments to serve the factories and, in some areas, training centres and cooperation between companies and technical colleges evolved. But the politically widely propagated expectation of networking between high-tech manufacturing and existing indigenous capabilities mostly remained unfulfilled. EMS production networks in CEE are globally integrated, not regionally. Export-rates are high, with 90% or even 95% at Foxconn (exceeding the rates of usually 70 to 90 percent of many other multinational companies producing in CEE). Local suppliers make only a low contribution of usually not more than 3–5 percent of value added. One reason for that is the failure of national and regional development programs. Given the huge economic power of transnational corporations and limited power and political willingness of local agencies, governments and national ministries to change the current path of supply-oriented policy, local “cluster formation” ends up as a common leitmotif without material basis. Another reason for the weak local integration is the hierarchic governance of the branch, with strategic decisions about the “approved vendor lists” not being made in the region but following the global arrangements between brand-name firms and contract manufacturers’ headquarters (see section 2).

4.3 Locational and social competition

As in the other regions, working conditions in Eastern Europe are characterized by high levels of technology and organization. Equipment is state of the art, and working environments are well-lit with relatively little noise and fumes. Manual assembly of components is less tedious and the exhaust from soldering fumes is better than the image of dark backyards with little sweatshops suggest, and well-lit factory buildings reduce the strain on workers’ vision. However, the social question in the CEE-region is huge, mainly due to (very) low wages and an excessive use of highly flexible and precarious labour.

Nevertheless, CEE is somewhat unique, as specialization, so far, has been driven by smaller and highly diverse manufacturing volumes, whereas in Malaysia and Mexico some of the successful companies could achieve relocation of higher volumes, joining the path to flexible high-volume production (high-volume, high-mix).

Besides Jabil in Poland and Hungary or Celestica in Romania it is Foxconn that massively enlarged its production, mainly in the Czech Republic.

While the Western production sites of Flextronics in Hungary, for example, have regular difficulties, its Eastern Hungarian plant near the Ukraine border was running at full capacity for quite a time, also benefitting from the use of low-cost suppliers in neighboring Ukraine. In the beginning this was mainly due to the move of HP printer assembly from western Hungary to the East, before production finally went to China in 2005. The Ukrainian’s “orange revolution” and the related opening to the West led to cross-country industrial parks along the border under unified management. Ukraine appeared particularly attractive as an alternative to Asia, since the country was to join the EU in the near future and wages would remain low. However, this region also is not “safe” but faces highly unstable production volumes.
In production, regular wages range from 80 Euros per month base wage (gross) in the Ukraine, to over 120 Euros in Romania, 175 Euros in Estonia, and up to 400 or 500 Euros in Hungary and Poland. Contrary to the rising income of technicians and engineers over time (being nowadays 1,000 Euros or more per month), this situation has not changed much on the shop-floor. Low wages are additionally squeezed via flexible time schedules (reduction of overtime pay) and the variable bonus payments system, regarded by management as incentives for high work performance and identification with the corporation. It is, indeed, an important sum for workers but the system is widely experienced as repressive and arbitrary, particularly since bonuses are exclusively assigned by management and middle-rank foremen (i.e., department supervisors and team leaders), fortifying personal hierarchies and dependencies. In many cases, bonus payments alone would make 20 to 30 percent of the monthly wage. Such bonuses not only depend on quality-targets of production but also “soft” components and personal attributes of individual workers such as “team orientation,” “work attitude,” suggestions for improvement, and absences due to medical, family, or other personal reasons.

However, managers are constantly justifying wage restraint. They cite the unstable economic situation and global competition and declare concrete alternatives for where to relocate when wages might rise. In Estonia, for instance, managers argue that rising wages will trigger the relocation of production to Russia, while in Hungary wages in Romania and Ukraine are cited as a threat and so on. Workers in Hungary, Poland and Estonia, therefore, insist that their countries can no longer be classified as low-wage locations because workers are under pressure from low-wage countries further east. Similar patterns can be observed within each country.

In addition to low and flexible wages, EMS is marked by high flexibilization and precarization of employment. This feature was reinforced by changes in labour and trade union laws enacted between 2001 and 2004 in the course of negotiations over admission to the European Union (see above). The common contents of these changes were easier dismissal of employees, reduction of requirements for payment of overtime, expanding regular work schedules and enlargement of precarious forms of employment such as agency-work – all introduced in the name of “adjusting” national regulations to EU standards.

In the EMS branch, short-term and temporary work is widespread, both ranging up to 50% of the total workforce, and sometimes even more. Contracts can range from two months up to a year or more. For management, using limited term and temporary labour saves cost (no bonus, vacation, and severance pay) and allows for easier dismissal. In fact, dismissals according to labour laws sometimes take several weeks, while “temps” can be laid off within two days. New laws and government policies created options for the almost unlimited renewal of limited-term labour contracts without any mechanism for employees to become permanent. To be sure, limited-term and contract labour did exist before, but now they were formalized and legalized (see also Coe et al. 2008). One consequence is the increasing role of multinational agencies such as Manpower or Adecco, which have been taking over and eliminating smaller local and formerly semi-legal temporary labour agencies.

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14 One consequence of this low-wage-system is an every-day system of indebtedness of the people to micro-credits to achieve what they consider as “normal life”, for example equipment such as refrigerators or to be able to go away on holiday.
Divisions within the workforce between “core” and “peripheral” workers are further complicated by socio-spatial cleavages and segmentation. They arise both from regional differences between richer and poorer regions as well as from labour migration between different countries. In Estonia, the majority of workers at Elcoteq was made up of young Russian women, most of them from the east of the country. Some of them lived in dormitories subsidized by the companies, a situation often inducing jealousy among local workers who have to pay high rent for housing. In Hungary, Nokia (before closing in 2014) and Foxconn used temporary workers from Slovakia in large numbers, transported daily in buses across the nearby border. Many workers from the Ukraine are employed in eastern Hungary, mostly recruited from the Ukraine’s Hungarian minority. These workers receive only the legal minimum wage in Hungary, which is not more than half the average industrial wage in the Ukraine.

4.4 Labour relations and trade unions

However, it is important to note that rather restrictive work and employment conditions do not automatically translate into a passivist, scary atmosphere on the shopfloor. During our factory visits, sometimes even a fairly open ambiance among workers was observed, with the latter displaying considerable self-confidence. They listened to music from radios or enjoyed opportunities for short conversations and also workers in the assembly area exchanged words spontaneously when debating a technical problem. It clearly seemed that in particular in production with smaller volumes and more specialized products more social contacts and some degree of spontaneous communication and team building were required to support flexibility in the workplace. Likewise, and contrary to a widespread belief, in most factories of the 25 we investigated in CEE, some form of trade union representation exists. This is true even for those companies that are explicitly anti-union. The Jabil factory in Poland, for instance, is represented by Solidarność, and an “autonomous trade union” existed in Szombathely, Hungary. In most Eastern European countries, the former official trade unions maintained a dominant role in spite of competition from the “autonomous” and “free” trade unions, typically more radical, that emerged during the transition years after 1989. During our research, we found both kinds of trade unionism: on the one hand bureaucratic, even authoritarian paternalism, with nearly no understanding of social representation of labour against management, and on the other a kind of new generation of mostly young activists with pragmatic political orientations but sometimes considerable militancy. The latter, coming from all strands of the trade union landscape, pushed for material social and political improvements. When we summarize their activities, positioning and conflicts with management, we see some basic features across the CEE region that precisely refer to the contradiction of being in the European “periphery” on the one hand but being fully integrated into transnational modern and flexible production on the other:

First, low wages and short contracts are the key problem in the workers’ perspective as they contribute to the spread of poverty. Workers’ and trade unions’ perception is that they perform high-quality work to Western standards at a fraction of Western wages. However, implicated in the logic of wages as “competitive advantage”, even among activists, demands for radical increase were not to be found. Instead, and with, in the back of their minds, the permanent threat of further relocation or customers leaving, workers and trade union activists tried to look for some kind of reasonable argument to pressure for higher wages, namely the comparison with western standards. Secondly, most trade unions developed from the activities of rank-and-file workers but after developing a certain momentum, management typically tried to interrupt that process, in particular by setting up an “alternative” employee representation in order to control communication with employees and to
circumvent more demanding collective bargaining. Such policies are also directed at complying with basic EU regulations on workplace representation and fending off potential confrontations with workers on this issue (see Kluge & Voss 2003). Third, these “formalization”-management strategies had limited success. For different reasons, trade unionists are not willing to give up their pragmatic aspirations for “real” representation of employee interests. On the contrary, merely formal acceptance by management and bargaining relations with no substance trigger resentment and motivation for union activism. Comparison with the West is, again, a crucial argument, and a typical saying by trade union activists is that their companies have to learn that they are not in the “wild East” but in Europe. Fourth, sometimes initiatives by international labour organizations to form companywide European works councils and networks of employee representation are of strategic importance. In some cases they provided legitimacy and a structure of material and moral support to factory trade unions and works councils even when the CEE activists stated that further enlargement of these networks is urgent.

To avoid misunderstandings, trade union activities are mostly weak in the sense that they cannot principally change the low-cost character of the EMS production model. They exist mostly at plant level, they experience setbacks, member-losses and sometimes extremely difficult conditions by their sheer existence (for example juridical prosecution by management). However, it is important to note that labour in transnational production is not purely an object of structural conditions but a social actor, with specific subjective resources, trying to intervene and to influence “wider” structural conditions of work and life (Herod 1997).

References


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