Making the Connections: Global Production Networks in Britain, East Asia and Eastern Europe

Peter Dicken and Jeffrey Henderson

1. Full Report
**Full Report**

**Background to the Research**

The background to this research project is the notion that Britain – and Western Europe more generally – is currently involved in a substantial reconfiguration of their economic relationships with two specific parts of the world: East Asia and Eastern Europe. The continuing transformation process in the former socialist economies of Eastern Europe and the financial crisis in East Asia during the late 1990s, together with the rise of China as a major economic centre of gravity in East Asia, constitute a set of potentially highly significant developments. Key issues are the extent to which firms’ investment-location decisions are being affected by these transformations and their implications for national and regional economic development.

During the mid-1990s, both the European Commission and UNCTAD had analysed the foreign direct investment (FDI) relationships between the EU and East Asia in two parallel reports, published just before the 1997 financial crisis in the latter region. However, the ink was barely dry on these two reports when the unanticipated East Asian financial crisis emerged in July 1997. Considerably less attention had been devoted to FDI relationships between the EU and the ‘transitional’ or ‘emerging market’ economies of Eastern Europe. There was, of course, much speculation, in the immediate aftermath of the collapse of the command economies in the early 1990s, that there would be an avalanche of FDI into Eastern Europe, but other than a few disconnected projects in the mid-1990s (some of it for the ESRC’s East-West Programme), little systematic work had engaged with this phenomenon or its consequences for the economies concerned.

The aim of this research project, therefore, was to investigate the extent to which the EU, East Asia and Eastern Europe constitute an inter-connected nexus of economic relationships and to explore the implications for the economies in which these are embedded. Although an analysis of FDI data was undertaken, our primary approach was to develop a specific conceptual framework - the *global production network* (GPN) – that allowed us to adopt a disaggregated scale of analysis. This conceptual framework extends and develops other similar frameworks, notably that of the global commodity chain.

GPNs – the nexus of interconnected functions and operations through which goods and services are produced and distributed – have become both organizationally more complex and also increasingly global in their geographical extent. Such networks not only integrate firms (and parts of firms) into structures that blur traditional organizational boundaries but also integrate national economies (or parts of such economies) in ways that have enormous implications for their economic well-being. Conversely, the precise nature and articulation of such production networks are deeply influenced by the concrete socio-political contexts within which they are embedded, produced and reproduced, although the geographical scale at which production networks are configured continues to widen and become more complex.

**Objectives**

1. To enhance our understanding of the theoretical bases of GPNs as a major mechanism through which economic processes are transmitted between geographically dispersed operations and regions;
2. To investigate the economic interconnections between Britain, East Asia and Eastern Europe;
3. To explore the ways in which such GPNs impact upon the development of national and regional economies in the geographical regions under investigation;
4. To evaluate the implications of GPNs for upgrading of domestic companies, adding and capturing value, skills development etc.;

5. To evaluate the extent to which local and/or national government bodies and other non-firm agencies are capable of exerting influence on the strategic behaviour of firms for the benefit of their respective economies.

The ways in which each of these objectives was addressed is outlined in the following sections. Overall, each of the objectives has been met. The major modification was the extension of objective 2 to encompass German, as well as British, firms into the analysis. This resulted from the appointment of a German native speaker and experienced researcher as the project’s Research Fellow. This proved to be an immense benefit to the project as a whole.

**Methods**

Three economic sectors were initially chosen as empirical lenses through which global production networks could be investigated: automotive components, electronics, and pharmaceuticals. However, the latter sector was replaced at the beginning of the project in response to one referee’s recommendation that we should include a service sector in the empirical work. We chose retailing, not least, because the large UK retailers show a considerable degree of internationalization and some of them have developed a strong presence in both Eastern Europe and East Asia. Within the electronics sector we focussed on two under-research segments: telecommunications (primarily mobile phones) and computer entertainment.

Conducting semi-structured interviews with senior executives in companies, government and non-government institutions across the target countries was the methodologically most appropriate way to address the main research objectives and to investigate the key conceptual issues outlined in the project’s core conceptual paper (see nominated output 1). Detailed interview data were enriched through a comprehensive search of firm-specific data derived from the firms’ own publications and reports and websites and through the use of firm- and sector-specific reports. In addition, an extensive scrutiny of trade and foreign direct investment data provided the foundation for the analysis of economic interconnections between the EU, Eastern Europe and East Asia at an aggregate level.

Using the technique of theoretical sampling, a number of key players or focal firms in each sector was identified as a point of entry from which to follow the different GPNs. Through a process of ‘snowballing’, we were able also to identify and interview the focal firms’ network partners (e.g. first tier suppliers, external service providers) or related non-firm institutions. Table 1 shows that, in total, 161 in-depth interviews were conducted with business firms and non-firm institutions. The balance across the three sectors was reasonable. Table 2 shows that interviews were conducted in 13 countries: two in the EU three in Eastern Europe and eight in East Asia. This represents one of the most comprehensive firm-based surveys ever undertaken within the production network/commodity chains framework, in terms of both the range of organizations studied and their geographical distribution.
Table 1 Sectoral distribution of interviews

<table>
<thead>
<tr>
<th></th>
<th>Auto components</th>
<th>Electronics</th>
<th>Retailing</th>
<th>Non-firm institutions</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of interviews</td>
<td>39</td>
<td>40</td>
<td>31</td>
<td>51</td>
<td>161</td>
</tr>
<tr>
<td>No. of organizations</td>
<td>25</td>
<td>31</td>
<td>13</td>
<td>44</td>
<td>113</td>
</tr>
</tbody>
</table>

Table 2 Geographical distribution of interviews

<table>
<thead>
<tr>
<th>Western Europe</th>
<th>Eastern Europe</th>
<th>East Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK: 20</td>
<td>Czech Republic: 22</td>
<td>China: 15</td>
</tr>
<tr>
<td>Germany: 15</td>
<td>Hungary: 17</td>
<td>Hong Kong: 9</td>
</tr>
<tr>
<td></td>
<td>Poland: 8</td>
<td>Taiwan: 9</td>
</tr>
<tr>
<td></td>
<td>South Korea: 5</td>
<td>Singapore: 5</td>
</tr>
<tr>
<td></td>
<td>Malaysia: 9</td>
<td>Thailand: 12</td>
</tr>
<tr>
<td></td>
<td>Japan: 15</td>
<td></td>
</tr>
<tr>
<td>Total: 35</td>
<td>Total: 47</td>
<td>Total: 79</td>
</tr>
</tbody>
</table>

The interviews generated an extremely rich set of data. However, we encountered two specific problems. First, the deliberate focus on a small number of key firms required their cooperation at the appropriate level. This proved to be extremely difficult in some cases partly because of a combination of unforeseen external circumstances (including 9/11). We began to approach companies just at a time when the economic climate had worsened profoundly (early summer 2001) and, in that adverse climate, companies were very reluctant to provide information about what was seen to be a very sensitive area. Our response to an initial refusal by a specific company was to explore ways of gaining access through other parts of the company, often located in other places in our research area and then to work backwards to gain access through internal contacts. This proved to be a broadly successful strategy. Second, all the organizations we interviewed imposed severe confidentiality constraints on the information derived. Unequivocal undertakings had to be given not to divulge any information that could enable the organizations to be identified. On this basis, a waiver was granted by the UK Data Archive.

Results

Analysis of the huge amount of material is still in progress. The major preliminary results from the research can be considered under five headings, corresponding to the project’s main objectives.

1. Advances in the conceptualization of global production networks

The project has achieved a substantial advance in the conceptualization of GPNs and their implications for understanding economic development in ways that integrate and enhance its conceptual precursors. Focussing on the central categories of value, power, and embeddedness, the GPN framework provides an invaluable analytical tool. The empirical analyses we have conducted throw light on a number of important dimensions of global production networks.

Although a conventional view is that the length of value/supply chains within production networks is becoming increasingly extensive – both organizationally and
geographically - our evidence shows a wide variation that depends partly on the specific sector (and even the product). Modularization has been the main driver for the shortening of value chains in the auto industry whereas in retailing shorter value chains reflect the attempt to cut out intermediaries and to deal directly with suppliers. In electronics, it is the tendency to outsource production and the entry of new players in the course of technological development that transform production chains.

Looking beyond the vertical dimension of production, clear evidence was found of an increasingly complex, network-type organisation of businesses and value-added processes. In telecommunications, for instance, the variety of actors within GPNs has increased significantly with the implementation of new and advanced systems. New links and relationships with content providers for the multi-media era of mobile communication have created a distinct form of lateral network, including games software developers, web service providers and many others. Collaborative and strategic alliances with competitors are proliferating, despite fierce competition, to set standards, to carry out expensive R&D etc. As the value added in the mobile phone business has shifted to the service side, the network is transforming with lateral and horizontal linkages gaining greater importance and prominence over vertical linkages. If one includes the important non-firm agencies like sector associations and chambers of commerce which, as we found, fulfil a crucial role in linking government agencies and firms, thus transferring knowledge between both “powers”, the picture gets even more complex.

Another finding was the key importance of logistics in the development and operation of global production networks. This is a dimension that has been largely ignored in other research within this kind of framework. It seems to have been taken for granted that developments in transport and communications technologies have solved the problem of connecting together the complex, geographically-dispersed parts of GPNs. In fact, the need for speed, flexibility and reliability in the operation of such networks make the issue of logistics absolutely central.

Our interview results demonstrate that the distinction between buyer and producer driven chains, as developed in a theoretical precursor to the GPN approach, has to be seen as much more nuanced, although examples of both variants do exist. In particular, our results show that a much greater variety of actors, both firm and non-firm, is influencing the value creation and distribution process within GPNs. The results also provide clear evidence of the sectoral idiosyncrasies that determine particular forms of power distribution and governance structure.

2. The economic interconnections between Western Europe, Eastern Europe and East Asia

The EC and UNCTAD Reports on FDI relationships between Europe and East Asia stressed the relatively low level of European Union FDI in East Asia and a similarly low level of East Asian FDI in the EU up to the early 1990s. Our analyses of the aggregate FDI data to the year 2000 support that conclusion.

Whereas EU FDI in East Asia has, in relative terms, not changed significantly (although it has grown substantially in absolute terms), EU FDI in Eastern Europe has grown rapidly in the past decade so that it now hosts around 7% of the outward EU total, only two percentage points less than East Asia. In that sense, therefore, the two regions have been converging rapidly. In the case of Eastern Europe there was a marked acceleration after 1995. Not surprisingly, there is a strong ‘neighbourhood effect’ in the pattern of EU FDI in Eastern Europe. Just over 50% of EU FDI in Eastern Europe is concentrated in three countries: Poland, the Czech Republic and Hungary. The overwhelming majority of East Asian FDI in the EU originates from Japan, with far
smaller volumes from some other East Asian countries. But Japanese FDI in the EU has slowed down dramatically in recent years while the surge of Korean investment was aborted by the 1997 financial crisis. So far, Eastern Europe has attracted only a very small amount of East Asian FDI. Japanese firms, for example, have been very cautious investors in the region. Korea has the highest degree of involvement in Eastern Europe. However, many of these operations are now either suspended or being closed or sold.

The FDI data provide a very broad-brush picture of investment trends in the three regions. The firm-based interview data, on the other hand, enable us to disaggregate some of the patterns and to identify the changing functional relationships within and between the production networks of firms. Eastern Europe is rapidly becoming a key location for certain (mostly manufacturing) functions as part of Europe-wide production networks. Some leading firms (and their suppliers) are shifting some of their manufacturing activities to Eastern Europe and away from the UK and other parts of Western Europe. Some of those investments might, in the past, have gone to East Asia but the benefits of geographical proximity, as well as well-trained and skilled workers, of Eastern Europe have created a new ‘intervening opportunity’. Thus, Eastern Europe acts rather like Mexico in the North American context, although with a higher-skilled labour force.

The dynamics of production networks in East Asia are rather different from those in Europe, not least because of the greater internal diversity of East Asia as a region. Overall, EU firms tend to regard East Asia increasingly as a key market, rather than simply as a low-cost production base. A much more regionalized division of labour is emerging there with quite sophisticated structures involving regional headquarters (as in Singapore and Hong Kong), increasing levels of R & D (albeit mostly of an adaptive kind), and rapidly evolving production networks. Currently, of course, China is the key attraction both for EU and for other East Asian firms.

It is clear, therefore, that the firms in our survey regard East Asia and Eastern Europe as having distinctive attractions as investment locations. Although there is some evidence of their acting, in production-cost terms, as substitutable locations at the global scale, the extent to which this is occurring is rather limited. So far, it is predominantly in the electronics assembly business where some shifts can be detected in the relocation of production (e.g. from Hungary to China). Intra-regional shifts (within Eastern Europe and within East Asia) are much more common.

3. The impacts of the development and transformation of global production networks on national and local economies

Interviews with firms and non-firm institutions alike revealed the importance of embeddedness in shaping GPN structures and their impact on regional development. Key issues here are the widespread attempts by focal firms to replicate their home country business systems abroad and the creation of regional clusters of activities. Focal companies in the car and electronics industries often retain strong links to suppliers and network partners in their home economy whilst, at the same time, trying to persuade home country firms to co-locate in the host economies. For the host regions, this means, in many cases, an additional investment. But it also carries the danger of value-added being created and captured in foreign-owned firms and transferred back to the home economies, with limited technology and know-how transfer to domestic firms. Within the host economies, a range of GPN activities is clustered within a few regions, thereby contributing to continuing uneven development on a sub-national scale. This is the result of both GPN firms’ strategies and national economic policies. The automotive cluster in Thailand, and the telephone handset manufacturing clusters in Hungary and China, are just two examples of this tendency. While this favours the development prospects of
some regions, others are missing out. The relevance of territorial embeddedness becomes especially obvious in the case of retailing where, in a number of cases, the internationalization process of companies has been jeopardised to a failure to embed themselves in foreign environments with different cultural and consumer preferences.

Western European home economies are affected negatively especially in the electronics sector, where manufacturing is experiencing a degree of “hollowing out”. Expansion of production in Hungary, the Czech Republic and Poland has gone along with the relocation of production activities from EU countries like the UK and Germany, as industry consolidation goes on. The same is true for Japan, where firms are relocating to China and companies try to stop the hollowing-out process by re-focussing on their home market and adopting new production strategies. But they still do it the Japanese way: by creating Japanese SME firms rather than using foreign firms. The pressure for global sourcing to stay competitive has only to a limited extent eroded the Japanese business links with “home” suppliers, as can be shown especially for the car industry.

For the retail and auto sectors, European engagement in Asia is mostly an additional business but, at the same time, it is used for cost-minimizing and scale-generating strategies. Therefore, instead of jeopardizing the European operations, in some cases it even boosts European activities by cross-shipping semi-finished products from Europe to Asia rather than the other way around. The decline in the indigenous British auto industry is not so much related to the expansion of operations in Asia (Asian firms in effect generated jobs in the UK), but stems from a loss of business to, and takeovers by, Japanese, European or US firms.

4. Value creation, enhancement and capture: implications of GPNs for upgrading

The developmental impacts of GPNs on regions and nations depend to some extent on the sectors in which such GPNs are formed. In the case of retailing, European companies entering the Asian and Eastern European markets have established a large number of direct and indirect links with suppliers, creating a considerable business opportunity for local manufacturers and farmers. This is true even in the case of regions where the foreign retailers establish only sourcing offices. This effect is multiplied by domestic firms, which themselves deal with an impressive number of suppliers, locally and globally. Often, help is offered in upgrading local manufacturers by improving their operations and production skills in order to guarantee the quality of products delivered in a proper way. Thus, organizational know-how is transferred to local partners. However, in many cases the “local” companies the European retailers are dealing with are themselves JVs or foreign-owned companies. For instance, the majority of “Chinese” firms have a Japanese, Korean or other foreign JV partner, which not so much influences value creation as value capture in the region. However, the results show that compared to the auto or electronics sectors there is substantial scope for enhancing, creating and, indeed, capturing value for local firms, especially if the gains from cutting out intermediaries are not only retained by the retailer but also shared with local suppliers / farmers. Retailers that open stores in emerging markets can generate substantial employment, although it is mostly on the shop-floor level. In cases of takeovers, such effects are lessened, not least because they create strong competition for small domestic retail businesses which might reduce the overall employment effect. Finally, the European retailers provide growing access to otherwise protected markets in the EU for local Asian and Eastern European manufacturers and farmers. While the retailers purchased from these countries before expanding their own GPNs, the volume of transactions tends to increase once the European firms invest in emerging economies.
Within the auto and electronics industries, most of the value created is likely to stay within the European or Japanese/Korean-dominated networks because they make up the bulk of the assemblers and the first tier suppliers. In Eastern Europe and East Asia, most of the first tier auto parts firms are at least minority-owned by foreign firms, with the exception of Malaysia’s heavily protected national car project. So far this has helped local assemblers and their Malaysian suppliers to stay in business, but it has not contributed particularly to increased knowledge transfers from abroad. Recent delays in introducing a new, Malaysia-developed, car engine for the first time, and the need for further imports of this core technology, underline the problem. In this field, Thailand might have better chances, as it emerges with a dedicated policy towards an auto cluster that may be able to compete even against the growing Chinese industry. Whereas South-East Asia very much faces the competition of China in the electronics sector, the picture is different in the automobile industry.

The electronics industry appears to be the most volatile in terms of value creation and capture. Reorganizing and relocating comparatively quickly, many host regions see operations come and go, with a few exceptions. The locational centre of gravity is shifting more and more towards China, especially the Beijing and Shanghai areas, which seem to gain the most. As opposed to the auto industry, all the players in the electronics industry regard China as the emerging region. In Eastern Europe, Hungary has emerged as leading centre for electronics manufacturing.

5. Development and the capabilities of non-firm institutions

In general, developmental benefits from networked forms of investment seem to be closely associated with the extent to which governments develop industrial strategies (including emphases on innovation, upgrading and the encouragement of SME absorption into the networks) and maintain the institutional capacities to implement those strategies. Our research suggests that there are significant variations on this score, both inter- and intra-regionally. The Malaysian Government, for example, has a more explicit strategy than the Thai Government for SME network absorption and upgrading. But whilst it has the necessary institutional apparatus there are bureaucratic weaknesses that render this less effective than might be desirable. Nevertheless, Malaysia is probably better placed in this sense than any of the Eastern European countries we studied. The Czech Republic, for instance, seems particularly exposed in this sense, without, it appears, having either a coherent industrial strategy (other than attracting foreign investment) or the institutional means to progress such a strategy. Hungary, on the other hand, while weak in strategic terms is at least aware of the problem and is beginning to build the government agencies necessary to develop and implement an industrial strategy. In all of the East Asian and Eastern European cases we studied, governments and policy makers have been - though to varying degrees - intellectually and institutionally disabled by the prescriptions of neo-liberal theory. In some cases (the Czech Republic, for instance) politicians and senior civil servants seem to have difficulty imagining what pro-active economic governance might entail, or indeed, why their countries might have need of it.

It is often asserted that TNCs undermine the power of government regulatory bodies. Some companies have certainly been able to influence the regulatory institutions in order to gain advantages. Examples are companies negotiating incentives for locating in particular nations and/or regions. But relations between firms, states, quasi-government-organizations and NGOs (e.g. sector associations) are far more complex because they cross different scales and are territorially highly diversified.

GPN activities in China, for instance, are affected by China’s WTO entry (the ‘global level’), as this heavily determines the companies’ profitability at their China operations, jeopardizing market shares and inducing corporate responses to cut costs. On
the national level, there exists and – despite the WTO will continue to exist - a large set of regulations, both sector-specific and general. Furthermore, many operations in China are conducted with state-owned companies as JV partners, which lead to a complex set of state-firm power relationships at different scales. In Malaysia, the strong linkages between the political elite and local companies make it impossible to separate the spheres of business and politics, as they are mutually interwoven. In addition, Malaysia has a strong industrial policy towards both endogenous Malay firms and towards foreign companies, inviting the electronics industry while trying to keep car manufacturers out. The Malaysian case strongly influences the regional, multi-national level in slowing the AFTA integration process, which is a crucial factor for many car manufacturers’ and suppliers’ strategy towards Southeast Asia. This helped to grow the Thai car industry, in contrast to electronics, a sector already much more liberalized. On the retail side, some countries’ governments are under pressure from small local retailers to restrict the operations of foreign companies, which swept into the markets after the 1997 crisis through buying up ailing local enterprises. They not only face different national food and drug standards (making imports and exports a tricky business) but also a challenging industrial policy in some cases.

In sum, the business-policy node is a very complex one, highly differentiated on a territorial as well as a sectoral basis, crossing all geographical scales from the local to the global. While TNC’s strategies often trigger reactions from the policy side and influence politics, at the same time the firms’ strategies are predetermined by the policy structures on all geographical levels.

Conclusion

This research has gone some way towards demonstrating the analytical effectiveness of the GPN concept relative to its precursors. It has generated a significant volume of rich empirical data, the analysis of which is likely to yield important policy conclusions. In particular, it will help governments to form better targeted and more effective policy instruments to maximise the developmental benefits of networked forms of FDI.

Activities

Conference Presentations:

• Global Studies Association Annual Conference, Manchester Metropolitan University, Manchester, UK, July 2001.
• Second East Asian Regional Conference on Alternative Geography, Hong Kong Baptist University, Hong Kong, December 2001.
• Dept. of Geography Seminar Series, Hong Kong Baptist University, Hong Kong, March 2002.
• 98th Annual Meeting of the Association of American Geographers, Los Angeles, USA, April 2002.
The project team organised a highly successful international workshop in Manchester, May 2003, to discuss conceptual and empirical insights from the project with over 20 researchers and policy-makers from the US, Britain, Asia, and Europe (East and West).

Outputs

Papers published in internationally-refereed journals/books or under consideration
5. 'New information and communication technologies and local firm clusters: A case study of Xingwang Industrial Park, Beijing'. Submitted to *Urban Studies* (under review).

Project Working Papers
All available on-line at: [http://www.art.man.ac.uk/Geog/gpn/pdfs/gpnwp.pdf](http://www.art.man.ac.uk/Geog/gpn/pdfs/gpnwp.pdf)

Further Working Papers are in preparation. A book-length monograph and further journal articles are planned.

**Business Related Publications**


**Impacts**

Preliminary results from the research have been discussed with senior officials of the International Labour Office, Geneva; the National Economic Action Council, Government of Malaysia; the Prime Minister's Office, Government of Hungary. Further meetings with officials from similar national and international agencies are anticipated.

**Future Research Priorities**

There is now a considerable international research network on GPNs of which this project forms a significant component. Among the key research issues are:

- What do local firms need to do in order to become incorporated into GPNs and what happens to those firms, localities or countries that cannot be incorporated, or are pushed out when the global 'rules of the game' change?
- What is the significance of the mediation of GPNs, in particular industries, by national (and where relevant, provincial) governments and international agencies by means of competition and regulation policies?
- How do GPNs impact on socially and spatially uneven development? What are the distributional issues that GPNs highlight in particular countries and regions and what are their consequences for migration and social justice?
- How do GPNs, in particular countries, link with local business networks and what are the implications of these linkages for the above issues?
- How do GPN processes relate to significant geopolitical issues (e.g. relationships between the US and China, or nationalist issues within Eastern Europe?)