

**Pan-European industrial networks as factor of convergence or
divergence within Europe:
conceptual and empirical issues for research**

Dr. Slavo Radosevic

School of Slavonic and 'East' European Studies

University College London

E mail: s.radosevic@ssees.ac.uk

Chapter in Wallace, H. (Ed.): *Whose Europe? Interlocking Dimensions of Integration*,
Palgrave, 2001, London, (forthcoming)

1. Introduction

In this chapter we argue, first, that the way in which Central and 'East' European countries (CEECs) integrate into the wider European economy will have important effects on the long-term growth of the EU and CEE. Their integration through production networks, formed within intra- and extra-MNCs linkages, is an essential part of the wider European integration, which includes market as well as institutional or policy integration. Second, the micro-level integration of the wider Europe is neither automatic nor without its problems. The depth of industrial integration is not the automatic outcome of the depth of institutional (policy) integration. The issue of compatibility between policy/institutional and micro-level integration has to be explicitly addressed as their mutual interaction will determine the emerging industrial architecture of the wider Europe and thus the growth prospects for Europe.

Pan-European integration started in the period characterised by trade liberalization and the expansion of international financial markets. These processes are described in UNCTAD (1994, p. 118) as *shallow* international integration, meaning the spread of market linkages through greater trade and factor flows, and government action to reduce obstacles to these flows. The processes of financial and trade globalization are closely linked to the process of producing goods and services, i.e. to micro/enterprise level globalization. Globalization today is distinctive as a micro-phenomenon that enables production integration and networking and, as such, creates a *deep* international integration at firm level. Integration at micro level, or the level of international production, goes beyond arm's length market exchanges by internalizing cross-border exchanges under the common governance of TNCs or through different forms of sourcing or network relationships.

Interlinkages between macro (shallow) and micro (deep) globalization processes produce a specific economic and technological dynamic of globalization (Radosevic, 1999). Interlinking produces an unbalanced but increasing integration of some geographic areas or dimensions (competition, production, demand, finance) of the world economy, while simultaneously producing divergence or marginalization of others.

Although market integration is a necessary objective of enlargement, it is in no way a sufficient condition of dynamically efficient outcomes for an enlarged EU. Convergence of the CEECs in terms of growth is much more likely if market integration between the existing EU and the CEECs is reinforced by production and technology integration. Otherwise, the CEECs could end up being integrated into the EU, but being isolated and marginalised in terms of production and technology linkages and excessively dependent on budgetary transfers. A proper understanding of the conditions for 'deep integration' demands a better understanding of supply-side phenomena and, in particular, of the extent, factors and nature of production and technology linkages between the existing EU and the CEECs.

The specificity of EU integration, when compared to other regional integrations in the world, is the strong policy and institutional integration. The integration process is top-driven and aims at 'deep' institutional integration. However, the viability of political and institutional integration of the wider Europe cannot be separated from the breadth and depth of integration at firm-level. Policy (macro) and production (micro) integrations are driven by different forces and have certain degrees of autonomy, i.e. they can be developed independently of each other. However, in the long-term they should be compatible and reinforce each other. If the disparity between depth and breadth of micro/production and macro/institutional integration becomes too great this will increase both economic and political costs for the EU and the accession countries and could undermine the enlargement raising diverse security concerns.

The need to ensure compatibility between policy and production integration and thus reduce the social costs of their incompatibility raises a whole set of new policy and management issues: Will the compatibility between these two levels of integration emerge automatically? Is the policy of integration sustainable if micro-links are weak? Is the policy of integration necessary at all for micro-integration?

The analysis of these issues should shed new light on the potential and sustainability of 'deep' integration within the wider Europe. It could also provide a basis for evaluating the current EU policy towards the Central and 'East' European countries which so far have had neither coherence nor any overarching strategy (Wallace, 1997).

Against this background the chapter tries to set out the main issues that the problem of (in)compatibility between micro/production and macro/institutional

integration of the wider Europe raises. The chapter is predominantly of an exploratory character. In particular, it tries to set the framework for research on how are the "East" - 'West' industrial networks shaped by the policy integration processes. Section 2 defines the problem of 'East' - 'West' industrial networks within the growth or convergence/divergence perspective. In section 3 we place the discussion more specifically into the context of industrial upgrading. In section 4 we elaborate the conceptual and research framework within which issues of industrial integration of the wider Europe could be researched further. We approach the problem by using the alignment of networks framework (Kim and von Tunzelmann, 1998) and apply it to central and east European situation. Section 5 provides conclusions.

2. Convergence and divergence in the wider Europe and industrial networks: what CEE brings?

The extent and nature of the linkages that emerge between the 'East' and 'West' of Europe will strongly shape the competitive dynamics and industrial development in CEE but also in the EU. The accession of the CEECs into the EU raises the issue of whether 'East' - 'West' industrial networks will be a factor in improving the growth prospects of the enlarged EU or whether they will deepen the differences in levels of development and undermine prospects for more balanced growth.

The role of international industrial networks in growth and industrial upgrading of the wider Europe require some understanding about what CEE brings to European industry and economy. With the enlargement, the heterogeneity of the EU in terms of output will increase. In general, the enlargement will lead to a lowering of the GDP/per capita. Even the most developed CEE countries, like Czech R, Hungary, Poland, and Slovakia, are below EU 'South' countries in terms of GDP per capita. In this respect, the enlargement would lead to more heterogeneity in the EU. Also, in terms of trade competitiveness, other things being equal, the enlargement would lead to weakened trade balance and export competitiveness of the EU. As a counter to this, the variations in cost variables, like wages, productivity levels, and labour unit costs, have also increased in Europe and are now approaching the range of Asian economies (Landesmann, 1999, p.5).

However, the enlargement would increase the coherence of the EU economy in terms of economic (Mickiewicz and Bell, 2000; EBRD, 1999), and industrial (Urban, 1999) structures, and R&D (Radosevic and Auriol, 1998)¹. CEECs are in an intermediate position between the EU 'North' and the EU 'South' in terms of industrial structure (eg, shares of labour-intensive and sophisticated engineering industries - see Urban, 1999). In terms of industrial specialisation, CEECs and the EU less favoured countries are not targeting the same sectors. In this respect, they will not compete against each other but could be complementary. As Weber and Soete (1999) point out, 'the specialisation profiles of first-round Eastern European enlargement countries and the main EU countries with less favoured regions indicate that this (competition) is generally not the case, with the exception of transport equipment' (p. 8).

As a result of this intermediate position of CEE the opportunities for intra-industry trade and intra-industry production networks between the EU 'North' and the future EU "East" are possibly greater than with the current EU 'South' countries. Heterogeneity in terms of outputs, but increasing homogeneity in terms of structure and inputs, suggest that the prospects for EU enlargement may be much better than is commonly supposed. Significant cost differentials make opportunities for further expanding intra-industry trade and production networks more attractive.

Driven largely by integration into the supply chains of major European industrial firms, the economies of CEE are already showing signs of convergence to the industrial specialisation profiles of the 'Northern' EU countries (OECD, 1998). This comes through an increase in FDI in CEECs but also through complementary networks of non-equity links. Contrary to initial expectations, there has been no significant diversion of foreign direct investment (FDI) from the 'EU South' to the CEECs (Brenton et al, 1998). Nevertheless, countries like Hungary and the Czech Republic seem to be already equally well, if not better, integrated into global production networks than some regions in the current EU (Weber and Soete, 1999).

So far, the increased heterogeneity in levels of development of a would-be enlarged EU has been perceived as a problem. However, based on the 'East' Asian experience Zysman and Schwartz (1998) argue that the 'heterogeneity of production functions' (p. 17)

¹ According to EBRD (1999) in the more advanced central European countries, industrial employment as a share of the total had stabilised by the mid-1990s at a level above that in comparable market economies (p. 89).

within the wider Europe may offer a solution. "East" - "West" industrial networks could operate as a mechanism for industrial upgrading. Increased differences in levels of development are interpreted by Zysman et al (1997) not as a liability, but as an asset. The advantages of divergence come from the opportunity to separate product development from production and radically minimize the capital requirements and the range of in-house production skills needed for volume production and mass strategies (Zysman *et al*, 1997, 1998).

Inspired to a great extent by the phenomenon of 'East' Asian cross national production networks Zysman et al (1997) have posed the question of whether 'East' - 'West' European production integration, if based on cross national production networks (CNPNS), would represent a potential growth opportunity, not only for CEE but also for the developed EU economies. CNPNS are defined as 'relationships among firms that organise, across national borders, research and development activities, procurement, distribution, production definition and design, manufacturing and support services in a given industry (Ernst, 1995a cited in Zysman et al, 1997, p. 57).

Within the traditional view, due to differences in wage and development levels, this relationship would be defined based on relative comparative advantages and would be confined to trade. However, the opportunity of merging countries with such a different 'production functions' would generate, through CNPNS, technological dynamism. As Zysman et al (1997) point out '(i)nstead of essentially labour intensive low or middle skill products in a mature or at least declining sector, we are talking about production arrangements in the core elements of the industrial economy, consumer durables, and in the most rapidly expanding set of sector, electronics' (p. 59).

Many of Zysman et al (1997) conclusions are useful in generating hypotheses and in defining research agenda but they cannot be taken for granted. The reason for this is that opportunities arising from differences between CEE and EU as regions may be undermined by several following factors:

First, differences between European 'East' and 'West' are similar to east Asian differences in terms of output (GDPpc, wages, export unit prices, productivity). However, differences in terms of economic and industry structure and inputs (skills, R&D) have actually made Europe more homogenous. Whether this is a favorable basis or not for CNPNS is not yet clear.

Second, the process of European integration and enlargement is also shaped by political integration. As Zysman and Schwartz (1998) point out legal restrictions on labour reorganisation and layoffs deter European companies from expanding these production arrangements (p. 13). The institutional convergence and legal harmonisation is certainly not favorable to production arrangements that rest on technological and institutional diversity.

Third, economic conditions in Europe have not been so far conducive to rapid internationalisation of production by EU firms, thereby slowing their expansion into foreign locations (Linden, 1998, p. 4).

Finally, Zysman and Schwartz (1998) point out that the European MNCs have, to date, been slow to explore the new strategies or exploit the possibilities of these cross-national contract production arrangements due to their specific features. They had limited production involvement in Asia and Asian production networks and hence little experience in cross national production networks. Also, they seem to be organised as closed networks which hinders the development of contract manufacturing².

3. International industrial networks and industrial upgrading: conceptual issues and research

The issue that underlies the research questions introduced in section 1 is that of trade- or FDI-based industrial upgrading of CEE as well as of the EU. More specifically, the issue is under what conditions can policy, trade and production- based integration become a vehicle for industrial upgrading. As Ernst (1999, p. 32) points out 'the dynamic coupling of domestic and international knowledge linkages is of critical importance for economic growth in a globalizing world'. Growth is dependent on the way countries integrate into the global economy. This results from national factors but also from the strategies of foreign enterprises. An understanding of these issues is essential for understanding the prospects for catching up in a globalised world economy. The emerging

² While the first argument is valid, the second is probably a generalisation that may not reflect the tendency. The research by Tulder (1998) on strategies of EU companies in the CEE car industry shows that in fact the majority of them operate as open networks.

policy issue is under what conditions can international linkages be leveraged as carriers for an industrial upgrading of CEE and EU?

The importance of this issues comes from the fact that participation in global commodity chains is a necessary step for industrial upgrading because it puts firms and economies on a 'potentially dynamic learning curve' (Gereffi, 1999, p. 39) or generates 'dynamic learning' (Radosevic, 1999). As Ernst (1999, p. 1) points out '(i)nternational linkages can recharge domestic knowledge creation, provided appropriate policies and firm strategies are in place.'. Also, 'under certain conditions, international linkages can compensate for initially weak domestic linkages' (ibid., p. 32). However, there is nothing automatic about the coupling of domestic and foreign networks. Constraints to the knowledge flow and knowledge generation within international production networks can be due to a variety of firm factors as well as other factors related to the role of the state or features of the market.

The concerns of the economic and business literature with industrial networks are greatly focused on modes of entry (full ownership vs. arm's length relationships vs. alliances). The basic perspective is on transaction costs and the theory looks at the MNC as one of several possible ways of organising economic activity and explains why and when this particular form will be chosen in preference to its various alternatives. The dominant explanation is the OLI-framework or Eclectic Paradigm of International Production (Dunning, 1993), which explains MNCs as having a specific competitive advantage (O) that is better leveraged internally (I) by physically setting up a number of assets in the host country (L). Within this framework alliances are interpreted as cases of incomplete internalisation. MNC are interpreted as economic institutions that internalise the non-pecuniary externalities resulting from 'natural' market imperfections. The basic issue within this perspective is to understand when the markets for intermediate inputs will be subject to such high transaction costs that hierarchical co-ordination becomes more efficient than the market.

By focusing on markets and hierarchies as the fundamental modes of organisation, transaction cost analysts often do not consider the diversity of organisational arrangements that are contained within the alliances. By focusing on given transactions, transaction analysis overlooks the dynamic interaction between organisations and transactions and the way in which established organisations can develop new additional transactions (Meyer,

1998). The importance of social networks in which alliances operate provides a much richer explanatory framework for understanding their growth and strategic management issues (Gulati, 1998)

The link between international industrial networks and growth has been dealt with only partly with relation to FDI. (See Vernon, 1966, Ozawa, 1992, Dunning and Narula, 1996, Narula, 1996). The problem with these explanations is the limited number of explanatory variables, especially neglect of political variables and variety of country and sector specific factors. The complexity of variables to be involved in the framework can explain in part why the issue of global industrial trade and production networks and their linkages to growth and industrial upgrading lacks a coherent theory and is relatively under-researched³. This latter relates to both aspects of the problem: industrial upgrading as well as international linkages to the national innovation systems. An important weakness of innovation system theory is a neglect of the international dimension (Ernst, 1999, p. 2). The weakness in national systems of innovation literature is the actual elaboration of how international industrial networks matter for the process of national industrial upgrading and also, which variables matter in this process of interaction. Equally, the notion of industrial upgrading itself, which goes beyond R&D in explaining industrial progress, remains vague⁴.

It is usually assumed that when integration takes place at the production level via the establishment of subsidiaries and link-ups through joint ventures, this will automatically bring some degree of integration at the technological level. This is not necessarily the case. The EU and CEE are full of individual instances where production integration is not followed by technological integration and it is one of the key issues in the cohesion debate.

From an international industrial networks perspective the industrial upgrading framework focuses on the relative position of firms or countries in international trade or supply networks. If we are to apply this framework to the CEE we must first resolve the empirical problem of which positions in international production chains producers from CEE occupy and how can these positions be explained. Only then can we attempt to

³ For modeling FDI backward and forward linkages through which domestic firms overtake and forces out FDI plants see Markusen and Venables (1997).

⁴ Gereffi (1999) defines industrial upgrading as 'a process of improving the ability of a firm or an economy to move to more profitable and/ or technologically sophisticated capital and skill-intensive economic niches.' (p. 51, 52).

understand the dynamics of these networks. Being plugged into the global production network and having access to world markets does not by itself guarantee that 'dynamic learning' capability is acquired⁵. Enterprises may remain in the same technological positions within production networks because the structural barriers against moving upward are too high to overcome. This suggests that the learning process through international production networks is not a continuous but is a discontinuous process. In technology 'catching up' enterprises have to pass through several distinct phases, each with specific learning and capability requirements.

Here we will point to two issues important for explaining the growth aspects of 'East' - 'West' industrial networks. First, do opportunities and requirements for growth of CEECs based on trade and international industrial networks depend on the position in global or regional production networks to which domestic enterprises belong? Are technology transfer and growth opportunities determined by the 'club' or network to which the enterprise is attached? For example, are opportunities for moving up the ladder of technological complexity the same for a central European component manufacturer when supplying Daewoo or Ford?

Second, how can domestic enterprises move from lower to higher value-added positions within production networks? For a domestic economy a higher value-added position should, in principle, ensure more spillovers and more technology inflows as well as more opportunities for domestic clustering.

Understanding the nature of production networks in CEE should tell us more about their dynamic potential. The discussion and research on this has already started. For example, Ellingstadt (1997) argues that we are witnessing the emergence of technologically stagnant 'East' - 'West' networks which resemble *maquilladora* types of relationships. Along this line is also the thinking that CEE will be a case of 'dependent national capitalism, integrated into the capitalist world economy on the now standard liberal lines, yielding a tolerable living standard for most of their citizens, but with the permanent high unemployment and inequalities typical of the semi-periphery' (Radice, 1995, p. 307). In

⁵ By this we understand learning through continuous market and technology access which puts a firm on the path of technology accumulation and enables its 'catching-up' or 'forging ahead'. This is in contrast to the one-off import of technology and subsequent learning behind the protective barrier. The experience of developing countries suggests that the learning behind the barrier is inferior in a dynamic sense to learning which is linked to continuous access to foreign markets (Radosevic, 1999).

this version of the story CEE can operate only as a low cost skilled labour base with limited possibilities for technological integration.

In the alternative story CEE could operate as a complement to Western production. As an argument in this direction Zysman and Schwartz (1998, p. 15) point to the example of German firms, which are drawing on the low cost skilled labour but to develop 'distinctive complementary, production'.

The testing of these two propositions requires far more empirical research. This is even more true as determinants of CEE as a location cannot be reduced on either market access or cost reductions. International production involves a much more complex agenda where market access and cost reduction have to be reconciled with requirements such as operational flexibility, services, delivery, quality and technology.

However, even when we get a rough picture of the factors behind the individual positions of CEE industries in international production networks we may miss the most important aspect of the problem: the dynamic potential of the initial positions and factors that influence industrial upgrading. Factors behind static efficiency requirements in resources allocation (cf. make or buy framework) tell us little about the dynamic requirements of learning and innovation.

The second issue is concerned with mechanisms of interactive learning or diffusion of knowledge from foreign affiliates or domestic companies, which are plugged into international sourcing networks, to other domestic companies. Dynamic effects for the economy are stronger when related domestic suppliers or buyers are involved. The integration of sectoral technological flows with individual production capability comes from the clustering of firms and network externalities. Globalization may weaken this integration through different forms of 'enclaves' (*maquila*, export processing zones, subsidiaries highly isolated from the host economy) unrelated to domestic sectors. The gain of world market share through 'enclaves' is not necessarily related to an improvement in productivity or a structural change in the pattern of industrialisation⁶. Finally, if the Canadian experience can be of relevance to CEE, then it shows that the positions within international production chains are changing mainly due to the capabilities of local subsidiaries. On the sample of Canadian world product mandates, whereby mandates are

⁶ For example, the Mexican *maquila* specialisation has not been followed by changes in either the development of production capacity or technological capabilities (Capdeville *et al.*, 1995).

defined as any subsidiary responsibility that extends beyond its own market, Birkinshaw (1996) and Birkinshaw and Morrison (1995) come up with several important conclusions. First, mandates are usually earned not given. Second, mandate development is fundamentally subsidiary driven. Third, responsibility over several production or business management functions gives a subsidiary more control over its destiny than managing a single function. Fourth, the sustainability of mandates depends on the strength of a firm and country specific advantages.

This brief overview of the conceptual understanding of the linkages between industrial upgrading and international industrial networks shows that we cannot offer much in terms of comprehensive conceptual framework⁷. However, relevant concepts and theories can illuminate different aspects of industrial networks.

4. Networks and their alignment: framework for research

The approach that takes into account the diversity of factors that shape industrial integration of the wider Europe should be based on the following three basic assumptions.

Industrial organization and political economy perspectives merged

The internationalization of production networks cannot be explained through an economics or business economics perspective only. The understanding of alliances and more broadly of industrial networks cannot be framed within the purely economist 'make or buy' framework which is rooted in the transaction cost perspective⁸. Variables that might be considered 'political', in the broadest sense of the term, must be taken into account. These variables include institutions, whether economic or political, systems of innovation, different political and corporate governance regimes, and socio-political coalitions (Hall, 1997).

The classical choice posed in the literature is between arranging to produce some good or service 'in house' or acquiring it elsewhere through the market. An increasingly

⁷ For example, Caves (1996) concludes that 'the relationship between a LDC's stock of foreign investment and its subsequent economic growth is a matter on which we totally lack trustworthy conclusions' (p. 237).

⁸ See Kay (1991) for the critique of this perspective in the case of MNCs.

common third option is to enter an alliance or network. From an economic perspective these choices are seen as being based on cost efficiency criteria. MNCs are very rarely seen as agents with market power whose expansion can be explained by collusion or monopoly power (Hymer, 1972). MNC are seen as organizations that take country factors as given and try to internalise specific locational advantages or avoid locational disadvantages. The mainstream interpretation of FDI is an internalisation framework which is based on a transaction costs theory. As Dunning (1991) argues, internalization theory is a leading explanation of why a firm should engage in FDI rather than the market. However, it cannot explain the level, structure and location of international production as claimed. If we are to understand the emerging industrial architecture of the wider Europe then the internalisation framework with its 'make or buy' dichotomy is far from sufficient to explain country and sectoral differences in the extent and structure of industrial networks. Even when an internalisation framework can illuminate the choices between make or buy it cannot say much about the growth of a particular firm or a group of firms (Cantwell, 1991). Growth of the firm is to a great extent a result of internally generated growth associated with firm specific advantages. Nevertheless, within a Coasian or transaction costs framework ownership- or firm-specific advantages are not essential. Firms basically adjust to external conditions and are not able themselves to shape the modes of entry. However, empirical research along a resources-based view suggests that they are actively shaping their industry environment. This is indeed the case in central European industries after entry of large investors which changes the nature of competition in the sector.

All this points to the insufficiency of a 'make or buy' framework to understand the changing emerging international industrial networks in CEE. As pointed out by Kim and von Tunzelmann, (1998, p. 4) '(t)he "make or buy" decision may however be amalgamated with the political governance perspective, and the decision seen as one that may take place variously in firms, networks or countries'. The variety of 'make or buy' decisions will be seen not as shaped only through OLI (ownership - location - internalisation) variables but also by a broader set of political variables. The point is that MNE networks will not be determined only by make or buy decisions of foreign enterprises but will be formed in interaction with a larger set of external variables in the host country and the world market. This effectively means that the perspective of industrial organisation will have to be merged with the political economy perspective.

Multi-level factors which shape industrial networks

The inclusion of political variables into the analytical framework inevitably brings the inclusion of different levels of analysis. In a review of different theoretical approaches to FDI and MNCs, Cantwell (1991) concluded that these approaches address different questions and levels of analysis even though by addressing different aspects of the problem market power, internalisation, macro and business administration perspectives pretend to be comprehensive.

We do not have a specific or comprehensive view regarding the factors that shape industrial networks. These factors are very likely not an exhaustive list. In this respect we implicitly accept a contingency-based view of alliances or industrial networks by Lorange and Roos (1992). This assumes that no particular type of network is better, nor universally more correct, than another (Britto, 1998). The choice of networks is dependent on the particular conditions at hand. Furthermore, unlike the international business literature, which finds contingency considerations only within the set of strategic features related to partner firms, we propose the framework in which variables that influence the formation of networks are broader in scope and relate to CEE state actions, sectoral features and EU policies. This need for the inclusion of different levels comes also from the proliferation of actors, which today influence the shaping of international production networks. As Strange (1996) argues very persuasively we live in a world of diffused power. '(T)he power had shifted upward from weak states to stronger ones with global or regional reach beyond their frontiers, that power had shifted sideways from states to markets and thus to non-state authorities deriving power from their market shares, and some power has 'evaporated', in that no one was exercising it' (ibid., p. 189). In a similar view, Dunning (1997) argues that contemporary capitalism has changed towards alliance capitalism where the relationship between governments and MNCs has turned from becoming more cooperative and has become more interdependent. If this is so, then we have to take into account the actions of many more actors (MNCs, international organizations, national and local governments, NGOs) if we are to understand the patterns of the international production and knowledge linkages. Each of the levels (national, global, local or firm)

plays a role in the process of shaping of global industrial networks. For example, as pointed out earlier, country factors in CEE can explain functional types of FDI but not the extent, volume and structure of FDI (Lankes and Venables, 1997). The level of FDI is not explainable by country specific factors or at least not only by them. Since there is not a smooth functional relationship between levels of FDI and a country's progress in transition this suggests that sectoral, firm and other institutional variables play a role.

The strategies of large firms may often be more decisive than country specific variables in shaping sectoral patterns of international production networks. As von Tunzelmann (1995: 10) points out 'by endogenously changing their circumstances through technological accumulation, firms may ultimately alter the national system itself.' New systems of innovation in CEE will be strongly shaped by the way enterprises develop and integrate their business functions. This points to a need to involve an individual -firm level into analysis, especially in cases where large foreign investors can change the entire structure of the industry.

The need for a multi-level analytical framework arises also from the nature of globalisation. 'Global' does not necessarily mean 'incorporating the whole world'. As Chesnais (1995, p. 85) put it: "'global markets' are exclusively markets where purchasing power and intermediate inputs are effectively located". This implies that the scope of 'globality' is relative to each specific case. It differs across different dimensions: financial markets and competition are more globalized than production and sourcing networks. An industry can be global in the sense that industrial competition is global, i.e. a situation of 'mutual global market dependence', but this does not imply that production, let alone technology, in that industry is globalized.

Alignment of various networks

The formation of industrial networks is seen as an alignment of various networks. Ernst (1999) points to 'co-evolution of international and domestic knowledge linkages that explains Korea's extraordinary success in information industries' (p. 32). Kim and von Tunzelmann (1998) point to the alignment of networks as an explanation for the Taiwanese success in IT. Network alignment comes as a result of effective coupling

between the evolution of national specific systems and the global (regional) production networks. The issue is not only 'the question of developing networks but of integrating locally and nationally emerging networks with global network structures' (Kim and Tunzelmann, 1998, p. 1). In particular, we want to examine the ways in which markets, firms, CEE states and EU actions can bring about the 'alignment' of these networks.

A variety or multiplicity of networks is what drives the process of integrating CEE into global production systems. By plugging themselves into global supply networks domestic firms externalise its disadvantages in accessing markets, technology and finance by surrendering control to foreign owners. Foreign investors then operate as compensatory mechanisms for weakened domestic firms. Weak national networks are likely to have small growth potential if not aligned to foreign networks.

However, whether an alignment of networks will take place depends not only on their linkages but also on the nature of each individual network. For example, robust industrial networks have developed political governance and corporate governance that match each other, which is not the case in CEE. For example, an overview of corporate governance in the Former Soviet Union by Estrin and Wright (1999) shows that slow progress in transition arises from weaknesses in implementing effective corporate governance as well as from weaknesses in the broader economic environment (capital markets; banks; product markets). In this case, weakness of national industrial networks hampers their alignment with global networks.

The more national and local networks are developed the more sustainable will be their alignment with foreign firms and networks. Following Kim and von Tunzelmann (1998) the analytical framework should have all three dimensions — global, national and local networks - as well as their interactions. The major problem is methodological - how to systematically combine and integrate research on all three networks. A mechanical combination of sector, country and micro studies may not be sufficient.

4.1. Network actors and linkages

From a business studies perspective the problem of global production networks is dominantly seen as an issue of firms' strategies and the role of co-operative alliances (see,

for example, Dussauge and Garrette, 1999). Indeed, corporate behaviour and strategies are essential for understanding the dynamics of production networks. However, if we are to understand the role that networks play in growth than we cannot abstract from the wider relations in which corporate decisions are taken. Earlier we pointed out that we are sceptical about the explanations and analysis of industrial networks that are reduced on one level only, be it sectoral, country or firm-level. The issues of state strategies, especially privatisation, and EU policies, should be taken into account if we are to understand the extent and patterns of these networks.

To understand the transformation of industrial networks in CEE and their realignment with global networks requires also an understanding of who the main potential or actual network organisers are. Different - national, sectoral, market and firm - determinants of the emerging networks are, by themselves, only a conditional advantage which requires network organisers to be turned into a real advantages. The question is who are the potential network organisers that could undertake the task of organising cross national production networks.

Foreign multinationals often act as focal points within networks as the key actor controlling and directing other players. On other occasions, a domestic player may emerge in that role. Sometimes, it is a combination of the two. Where foreign firms take the lead role, there are often immediate advantages in terms of finance and access to technology, but these may be offset by limited long-term growth potential - the lack of endogenous R&D, for example, and clear limitations imposed by implicit market sharing with existing European operations. Domestic led modernization may be slower but promotes the development of indigenous capabilities, which grow 'from within' and are, therefore, deeply implanted into the process. However, lack of finance and difficulties in accessing state-of-the-art technical skills (which have to be learned from foreign firms) make such a process hazardous and explain why the modernization process often ends up being led by a combinations of foreign and domestic players. A review of industry studies in six sectors of CEE suggests that the incidence of foreign-led modernization is much more frequent in central Europe than in Russia and eastern Europe (Rumania, Bulgaria) (Radosevic, 1999b).

In a different context but with similar concerns, this issues has been addressed through the notion of lead firms. Rugman (1997) points out that the *lead company* is at the heart of network. 'It ... provides ... strategic and organizational leadership ... beyond the

resources that, from an accounting perspective, lie directly under ... (its) ... management control' (ibid, p.182)(my emphasis). The strategy of the lead company thus directly affects the competitive position of other network participants. Ernst (1999, p. 15, 16) points out that '(t)he lead company derives its strength from its control over critical resources and capabilities, and from its capacity to coordinate transaction between different network nodes. Both are the sources of its superior capacity for generating economic rents. Growth and strategic direction of suppliers is heavily determined by the lead firm'.

Similar to our concerns regarding the CEE, Gereffi (1999) points to the key question of who will be the main 'organizing agents' in modernizing commodity chains in Mexico due to NAFTA⁹.

Network restructuring is strongly dependent on the (non)existence of a network organiser. At the core of this is the problem of co-ordination and complexity of production networks. For example, it is mainly the simple production networks, i.e. woodworking, the garment industry, or bulk commodities, that are re-orienting themselves relatively easily to world markets. In foreign trade this shift is present through the strong rise of labour-intensive, supplier dominated and commodities based sectors (see Landesmann, 1997; Guerrieri, 1999; Guerrieri, 1999b; Kubiela, 1999).¹⁰ Elsewhere (Radosevic, 1999c) we argue that the prospects for rebuilding the economies of the CEE are not only conditioned by (dis)economies in production but also can result from the inability of actors in production networks to self-organise due to institutional uncertainty and co-ordination failures, which hinder the self-organisation of industry.¹¹ This process results in the emergence or non-emergence of network organisers - organisations that act as promoters of trade, production and/or innovation linkages.

Who is likely to be a network organiser in the post-socialist context? Limited and unsystematic evidence shows that there is a wide diversity of network organisers. Network

⁹ Gereffi (1999) defines organizing agent as 'those firms, foreign and domestic that could enhance the competitiveness of the apparel commodity chains in Mexico through backward or forward linkages with major producers and retailers. (p. 67). The lead firms in manufacture centered and retailer centered networks in the North American apparel commodity chains are in a position to play a direct role in upgrading Mexican domestic industry, (Gereffi, 1999, p. 68). He predicts that 'sourcing intermediaries will emerge in Mexico to perform the same kind 'full package' services that trading companies and integrated manufacturers provided in 'East' Asia. (ibid., p. 68).

¹⁰ For evidence in the case of Baltic economies see Radosevic, 1997b.

¹¹ The difficulty with the empirical testing of this argument is that in real life self-organisation ability may not be the only constraint; the state of demand, domestic and foreign may also be an influence. Also, strong import competition or export restrictions from EU in 'sensitive sectors' like agriculture may hinder self-organisation of industry.

organisers are any actors with the necessary capability and resources - a user or supplier firm, a bank, a holding company or a financial - industrial group, a foreign trade organisation, a design institute, a foreign firm or, in some cases, even the state. Given the management, finance and technology gaps in CEE described in Radosevic (1999b) it is foreign companies that, for the time being, seem to be the most active network organisers in CEE.

However, network restructuring is not the result of the activities of foreign investors alone. As Tulder (1998, p. 36) shows in the case of car industry in CEE a tiered structure of countries developed in the region is triggered by an interaction of firm strategies and government policies - mediated by trade and industrial policies (Tulder, 1998, p. 36). In some cases, for instance the case of Hungarian Suzuki, this has led to a situation where network alignment is very weak and which we would better define as a network failure (Swain, 1998).

5. Conclusions

With the reintegration of CEECs into the wider European economy, the European economy has become much more diverse and varied in terms of production and technology structures. Also, the process of EU enlargement is taking place at a time when trade patterns are being strongly shaped by the complex integration strategies of MNCs involving the construction of international production networks across national boundaries. This brings together issues relating to trade policy, foreign direct investment (FDI) and other forms of linkage in the production and technology field. The chapter discussed the role of 'East' - 'West' industrial networks in reinforcing the competitive advantages of the EU and CEECs. However, we also accepted that there is nothing inevitably positive to come out of the process of industrial integration and that the integration could also lead to the erosion of the national or even regional bases of competitiveness. This raises as an issue what are requirements for a 'win - win' situation.

The national systems of innovation literature shows that the roots of technological competitiveness remain distinctly national (Lundvall 1992; Nelson 1993). What we may expect to see over the next period, therefore, is a new emerging European economic architecture which will be shaped by a multiplicity of corporate linkages and the interaction of corporate and national competitive strategies.

This requires a better understanding of the modes and patterns of production and technology integration of CEECs into the wider European economy. Although market integration is a necessary objective of enlargement, it is in no way a sufficient condition for dynamically efficient outcomes in an enlarged EU. Convergence of CEECs in terms of growth is much more likely if market integration ('shallow integration') between the existing EU and the CEECs is reinforced by production and technology integration ('deep integration'). Otherwise, CEECs could end up politically integrated into the EU, but isolated and marginalised in terms of production and technology linkages and excessively dependent on budgetary transfers.

Given that the specificity of European integration is 'deep' institutional integration the issue of its links with industrial integration warrant more attention. A proper understanding of the conditions for deep integration demands a better understanding of supply-side phenomena, in particular of the extent, factors, and nature of production and technology linkages between the existing EU and the CEECs. In section 4 we developed a perspective that can resolve some of the 'blank spots' indicated.

We examined how best to understand the role of global industrial networks in CEE and the way they are contributing to growth in the region and in the EU and to industrial upgrading, in particular. Our conclusion is that if we want to understand the emerging industrial architecture of the wider Europe then industrial organization perspectives will have to merge with political economy perspectives. Different theoretical approaches to FDI, among which the 'make or buy' perspective is dominant, are separated from political economy approaches. We pointed to the basic assumptions for this integration and discussed framework for such research.

The basic difficulty with an integrated political economy - industrial organization perspective is to define which variables should be taken into account (Hall, 1997). Our unit of analysis is industrial dynamics which is by itself an open system. As Lundvall (1998) points out '(I)ndustrial dynamics is not linked to one specific level of aggregation in terms of micro-, meso-, and macro-analysis_(b)ut presents a specific perspective on the firm as an open system that is affected by and affects wider systems'.(p.2-3 cited in Ernst, 1998). Alongside the multi-level nature of the problem an additional issues is multi-dimensionality. The intersection between different networks is either nationally or sectorally specific and involves a variety of the governance factors that hinder or enable

alignment of different networks. In section 4.1. we adopted Kim and von Tunzelmann's (1998) framework for analysing the (mis)alignment of networks. However, this does not solve the problem of the nature and quality of networks that (mis)align. Differences in types and qualities of national, global and local networks influence how this alignment will take place. In the CEE context, even when governments are not able to fully enforce property rights, this alignment does take place, although with important effects on the way CEE becomes integrated into global networks¹². An additional factor in these outcomes is the EU accession policy whose impact will become much stronger as the enlargement progresses.

6. References:

- Birkinshaw, Julian (1996) How Multinational Subsidiary Mandates are Gained and Lost. *Journal of International Business Studies* 27 (3), 467-95
- Birkinshaw, Julian and Allen J. Morrison (1995) Configurations of Strategy and Structure in Subsidiaries or Multinational Corporations. *Journal of International Business Studies*, 26 (4), 2729-53.
- Brenton, P. F. Di Mauro and M. Lucke (1998) Economic Integration and FDI: An Empirical Analysis of Foreign Investment in the EU and in central and Eastern Europe, *Kiel Working Paper* No. 809, Institute for Economy of the Kiel University, November.
- Britto, Jorge (1998) Technological Diversity and Industrial Networks: An Analysis of the Modus Operandi of Co-Operative Arrangements, *SPRU Electronic Working Paper* No. 4, Jan 1998, Sussex University
- Cantwell, John (1991) A survey of theories of international production, In Pitelis, N. and J. Sugden, (eds.) *The Nature of the Transnational Firm*, London, Routledge.

¹² For example, the enforcement of property rights in Ukraine is much less effective than in central Europe. Under the conditions of little property rights security and third party enforcement Pivovarsky (1998) concludes that 'MNEs that were successful in establishing production in Ukraine utilised strategies that aligned their interests with those of the discretionary government. They choose integration with the government bureaucracy by sharing part of the cash flow rights on their assets with the government agents. Joint ventures with local state owned enterprises were one avenue for integration with the government agents and aligning their interests with those of the MNE's owners' (p. 33).

- Caves, R. (1996) *Multinational Enterprise and Economic Analysis, Cambridge Survey of Economic Literature*, Cambridge University Press.
- Capdeville, M., Cimoli, M., Dutrenit, G. (1996), *Specialisation and technology in Mexico: a virtual pattern of development and competitiveness*, Nota di Lavoro, No. 96.09, Department of Economics, Università Ca-Foscari di Venezia.
- Chesnais, F. (1995), 'World Oligopoly, Rivalry between "Global" Firms and Global Corporate Competitiveness', in Molero, Jose (ed.), Molero, J. (ed.), *Technological Innovation, Multinational Corporations and New International Competitiveness: The Case of Intermediate Countries*, Harwood Academic Publishers.
- Dunning, H.J. (1991) The Eclectic paradigm of international trade, In Pitelis, N. and J. Sugden (Eds.), *The Nature of the Transnational Firm*, Routledge, London.
- Dunning, H.J. (1993), *Multinational Enterprise and the Global Economy*, Addison Wesley. .
- Dunning, H.J. (1997) *Alliance Capitalism in Global Business*, London, Routledge.
- Dunning, H.J. and R. Narula (1996) The investment development path revisited: some emerging issues, In J. Dunning and R. Narula (eds.) *Foreign Direct Investment and Governments: Catalysts for Economic Restructuring*, London: Routledge, pp. 1-41.
- Dussauge, P. and B. Garrette (1999) *Co-operative Strategy. Competing Successfully Through Strategic Alliances*, John Wiley & Sons, Chichester.
- EBRD (1999) *Transition report 1999. Ten years of transition*, European Bank for Reconstruction and Development, London.
- Ellingstadt, M. (1997) The Maquiladora syndrome: Central European prospects, *Europe- Asia Studies*, vol. 449, No. 1, pp. 7-21
- Ernst, Dieter (1998) *Catching-up, Crisis and Truncated Industrial Upgrading: Evolutionary Aspects of Technological Learning in 'East' Asia's Electronics Industry*, Paper presented at the UNU INTECH Lisboa Conference, September.

- Ernst, Dieter (1999) *Globalization and the changing geography of innovation systems. A policy perspective on global production networks*. Paper presented at the International Workshop 'The Political Economy of Technology in Developing Countries', Isle of Thorns Training Centre, Brighton, 8-9 October, UNU INTECH, Maastricht.
- Estrin, Saul and Mike Wright (1999) Corporate Governance in the Former Soviet Union: An Overview, *J. of Comparative Economics* Vol. 27, No. 3, September 1999, pp. 398-421
- Gereffi, Gary (1999) International trade and industrial upgrading in the apparel commodity chain, *Journal of International Economics* 48 (1999) 337-70.
- Gulati, Banjay (1998) Alliances and Networks, *Strategic Management Journal*, Vol. 19, 293-317.
- Guerrieri, Paolo, 1999. 'Technology and structural change in trade of the CEE countries', In Dyker, D. and S. Radosevic (eds) *Innovation and Structural Change in Post-Socialism: A Quantitative Approach*, Kluwer Academic Publishers, Dordrecht.
- Guerrieri, Paolo, (1999b). Technology, structural change and trade patterns of eastern Europe, In Hutschenreiter, Knell and Radosevic (eds): *Restructuring of Systems of Innovation in Eastern Europe*, Aldershot: Edward Elgar (forthcoming)
- Hall, A. Peter (1997), *The Political Economy of Europe in an Era of Interdependence*, Center for European Studies, Harvard University, Cambridge MA, mimeo.
- Kay, Neil (1991) Multinational enterprise as a strategic choice, In Pitelis, N. and J. Sugden, (eds.) *The Nature of the Transnational Firm*, London, Routledge.
- Kim, S. Ran and N. von Tunzelmann (1998), *Aligning internal and external networks: Taiwan's specialization in IT*, SEWP 17, May 1998, SPRU, mimeo
- Kubielas, Stanislaw, (1999). Transformation of technology patterns of trade in the CEE countries, In Dyker, D. and S. Radosevic, (eds.) *Innovation and Structural Change in Post-Socialist Countries: A Quantitative Approach*, Kluwer Academic Publishers, Dordrecht
- Landesmann, Michael, 1997. Emerging patterns of European Industrial Specialization: Implications for Labour Market Dynamics in Eastern and Western Europe, Research Reports, No. 230, The Vienna for Comparative Economic Studies (WIIW).

- Landesmann, (1999). The Shape of the New Europe: Vertical Product Differentiation, Wage and Productivity Hierarchies, In Knell, M., G. Hutschenreiter and S. Radosevic (eds.) *Restructuring of Innovation Systems in Central Europe and Russia*, Edward Elgar, Cheltenham.(forthcoming)
- Lankes, H.P. and A. J. Venables (1996) Foreign direct investment in economic transition: the changing pattern of investments, *Economics of Transition*, No. 4, 331-47
- Linden, Greg (1998) Building Production Networks in Central Europe: The Case of the Electronics Industry, BRIE, Working paper 126, <http://socrates.berkeley.edu/~briewww/pubs/wp/wp126.html>
- Lorange, Peter and Johan Roos (1992) *Strategic Alliances: Formation, Implementation, and Evolution*, Blackwell Publishers, Cambridge: Mass.
- Lundvall, Bengt -Ake (ed.) (1992) *National Systems of Innovation - Towards a Theory of Innovation and Interactive Learning*, Pinter Publishers, London
- Lundvall, B-A (1998) Defining Industrial Dynamics and its Research Agenda, Paper presented at DRUID Winter Conference, January.
- Markusen J. R. and A. J. Venables (1997) Foreign direct investment as a catalyst for industrial development, NBER Working paper series, Working Paper 622411, <http://www.nber.org>
- Meyer, Klaus (1998) *Direct Investment in Economies in Transition*, Edward Elgar, Cheltenham.
- Michalet, C.-A. (1994), 'Transnational corporations and the changing international economic system', *Transnational Corporations* 3 (1), February, 9—21.
- Mickiewicz, T. and J. Bell (2000) *Transitional Unemployment or Transition to Unemployment*, Harwood Publishers, forthcoming.
- Narula, Rajneesh (1996) *Multinational Investment and Economic Structure*, Globalisation and Competitiveness, Routledge, London.
- Nelson, Richard (ed.) (1993) *National Systems of Innovation: A Comparative Study*, Oxford University Press.

- OECD (1998) *The Competitiveness of Transition Economies*, OECD, WIFO and WIIW, Paris.
- Ozawa, Terutomo (1992) Foreign direct investment and economic development, *Transnational Corporations*, 1, (1) February: 227-54.
- Pivovarsky, Alexander (1998) Multinational Enterprise Entry Under Unstable Property Rights: The Case of Ukraine, *Ukrainian Economic Review*, No. 4-5, 1997-98, pp. 65-91.
- Radice, Hugo (1995) The Role of Foreign Direct Investment in the Transformation of Eastern Europe, In Chang, H. J and P. Nolan (eds.) *The Transformation of Communist Economies*, Macmillan, London.
- Radosevic, S. (1999), *International Technology Transfer and Catch-Up in Economic Development*, Edward Elgar, Cheltenham.
- Radosevic, Slavo, 1999b. Restructuring and reintegration of S&T systems in economies in transition, Final Report, TSER project, SPRU, Brighton.
- Radosevic, Slavo, 1999c. Growth of enterprises through alliances in central Europe: the issues in controlling access to technology, market and finance, School of Slavonic Studies - UCL, mimeo.
- Radosevic, S. and Auriol, L., 1998. Patterns of Restructuring in Research, Development and Innovation Activities in Central and Eastern European Countries: Analysis Based on S&T Indicators, *Research Policy*, 28, 351-376.
- Strange, Susan (1996) *The retreat of the state. The diffusion of power in the world economy*. Cambridge University Press, Cambridge.
- Swain, Adam (1998) Institutions and regional development: evidence from Hungary and Ukraine, *SEI Working Paper* No. 28, Sussex European Institute, Sussex University, Brighton.
- Tulder, van Rob and Winifried Ruigrok (1998) European Cross-National Production Networks in the Auto Industry: Eastern Europe as the Low End of European Car Complex, BRIE Working Paper 121, May, <http://brie.berkeley.edu/~briewww/pubs/wp/wp121.html>
- UNCTAD (1994) *World Investment Report*, UNCTAD, Geneva

- Urban, Waltraut (1999) Patterns of Structural Change in Manufacturing Industry in Central and Eastern Europe, In Dyker, D. and S. Radosevic, (eds.) *Innovation and Structural Change in Post-Socialist Countries: A Quantitative Approach*, Kluwer Academic Publishers, Dordrecht.
- Vernon, Raymond (1966) International investment and international trade in the product cycle, *Quarterly Journal of Economics*, vol. 80, 190-2207.
- von Tunzelmann, G.N. (1995), *Technology and Industrial Progress: the Foundations of Economic Growth*, Edward Elgar.
- Wallace, H. (1997) *Coming to terms with a larger Europe: options for economic integration*, Sussex European Institute, Paper prepared for BRIE-Kreisky Forum project, Vienna meeting, 5/6 June 1997. Revised draft. April.
- Weber, M. and L. Soete (1999) Globalization, Digitization and the Changing European Context: impacts on regional economies, *The IPTS Report*, No. 39, November, pp. 3-9.
- Zysman, J., E. Doherty and A. Schwartz (1997) Tales from the 'global' economy: Cross-national production networks and the reorganization of the European economy, *Structural Change and Economic Dynamics* 8, 45-85.
- Zysman, John and Andrew Schwartz (1998) *Reunifying Europe in an Emerging World Economy: Economic Heterogeneity, New Industrial Options, and Political Choices*, BRIE, Berkeley Roundtable in the International Economy, forthcoming in *Journal of Common Market Studies*, <http://brie.berkeley.edu/BRIE/pubs/wp/wp.113.html>