

Reunifying Europe in an Emerging World Economy: Economic Heterogeneity, New Industrial Options, and Political Choices

John Zysman and Andrew Schwartz

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John Zysman is a Co-Director at BRIE and a professor of Political Science at the University of California, Berkeley. Andrew Schwartz is a Research Associate at BRIE.

This essay considers the industrial integration of Central/Eastern Europe into the broader European economy, a twin process of transformation in the East and structural adaptation in the West (Kurz and Wittke 1998). Eastern Europe rejoins Europe, even as Europe adapts to an evolving global economy of multiple regional economic centers and innovative industrial strategies. Although the character of European re-integration will be a function of these adaptations, many of these issues are only now emerging in Western Europe and are missing from examinations of the Eastern transition.

For two generations the European Union has sought to create a single market from the economies of a set of relatively similar political economies, a homogeneous economic space established by a policy-driven convergence of market rules. Compared with Asia, for example, the range of incomes, wages, and skills in Europe is very compressed. Now, with the dissolution of the Soviet Union and the end of the Cold War, the range of wage and technological capacities has been dramatically extended. Abruptly, Europe has become a much more economically heterogeneous region.

An analytic approach of "comparative regional dynamics" helps illuminate Europe's situation. In Asia heterogeneity has long been entrenched in the form of diverse national packages of skills and wages, diverse production functions if you will, and continuously reinforced by military/political competition. The development strategies of Japan, Korea, and Taiwan, which constitute the first two tiers of Asian development, coupled heavy state intervention and promotion with trade protection. Those strategies have little relevance to the East European group. By contrast, Third Tier Asian governments, such as Thailand and Malaysia, chose to integrate themselves into the production and marketing arrangements of the MNCs rather than pursue an autarchic national development strategy. These networks have served as a vehicle for firms producing in Asian countries to enter international markets on competitive terms and are an ineluctable part of the tale of that entire region's industrial development trajectory. That a financial bubble has created an Asian regional crisis as well as a reassessment of growth strategies should not detract from the success of the trade and industry choices in the past decade or the significance of new forms of network production that emerged in the region. As different as they may be from each other, the most advanced of the Central and East Europeans are small- and middle-sized economies not able to pursue autonomous national development strategies. Rather they will need to insert themselves into a regional division of

labor. Consequently, one of the determinants of the future trajectory of these former Communist countries is where their firms become inserted, not only into the regional division of labor, but into the International Production Networks, webs of producers organized into supply systems by multi-national companies and contract manufacturers, that form part of new industrial strategies. The analytic analogy for Eastern Europe is, then, with the Third Tier Asian development strategies.

Part I begins, then, by examining the conditions to which Europe must adapt. It sketches how, hiding behind code words for the new internationalist mentality such as "globalism," new corporate strategies have changed the terms of industrial competition and induced the rapid evolution of International Production Networks (IPNs). (Borrus and Zysman 1997, Gereffi 1998). These IPNs, albeit in varying forms, have emerged in Asia as part of a reconstitution of industrial competition and production that lays emphasis on market standards and rapid product innovation (Borrus and Zysman, 1997). These strategies and production networks suggest terms for East Europe's entry into the European economy and the adaptation of Europe. Part II examines the present Central and East European trajectory of industrial development, asking whether IPNs are emerging in Europe as part of the new regional heterogeneity. As part of that discussion, we ask why these production networks have not been a substantial part of the European debate; then we sketch a "firm-centered" vantage on the story of East European economic transition that is a complement to literature on Central and Eastern European firm-building and state-building. Part III concludes by examining the implications of these economic developments for European competitiveness and the political evolution of the region.

Part I: Production Networks, "Wintelism," and Eastern European Possibilities in a Global Economy

Eastern Europe at the end of the twentieth century is re-entering an international economy very different from the one it left just after World War II. The current era is one with multiple economic centers and shifting dynamics of industrial competition. Three regional groupings have emerged in a supposedly global economy: North America, Europe, and Asia (consisting principally of Japan, Taiwan, Korea, and the associated countries that are now forming part of the IPNs that concern us here). For each region "foreign" trade—defined here as extra-regional trade or trade outside the region—makes up only a small part of GDP, less than

10%. Not only the growth of trade, but the growth of investment has been concentrated in the region of origin: investors within a region have been the principle source of investment to that region. MNC's tend to invest in their home regions; that is, it is more accurate to say that French firms have become European than that they have become global. Differences in the character of the inter-connections among the three regional economies are striking. Europe and North America have quite balanced trade and investment relations. However, the expansion in intra-regional trade in Asia has been accompanied by, or better still driven by, a trade flow out of Asia to final markets in the US and Europe.

A contrast of the European and Asian experiences suggests that *the internal "architecture"* of each region, as defined by political/security arrangements and economic institutions, shapes the choices of the particular countries and firms within the region. (Weber and Zysman 1997) The European region has been a political creation aimed at developing an ever larger homogeneous market. The distinctive architecture of the Asian region, with its economic heterogeneity and political/security rivalry has facilitated, indeed encouraged, the emergence not only of traditional production networks created by multinational corporation's investment and managed by them, but also innovation in the organization and application of contracted regional production networks.

Production Networks and the New Terms of Industrial Competition.

"Wintelism" and the new IPNs, both with roots in American technology competition, are altering the terms of competition in global markets. Examined together they help delineate the strategies that investors into East/Central Europe might follow and the strategic problem that producers in the region must face.

The Strategic Innovation; "Wintelism": "Wintelism" is the code word created to suggest the dominance of the *Windows* operating system and *Intel's* domination of the evolution of microprocessors. It signifies the shift in competition away from final assembly and vertical control of markets by final assemblers. Borrus and Zysman argue that this shift is radically altering the terms of industrial competition:

The character or terms of competition in the "Wintelist" era . . . is a struggle over setting and evolving de facto product standards in the market, with market power lodged anywhere in the value-chain, including product architectures, components, and software. Those constituent system elements--from components and subsystems through operating

applications software--become separate and critical competitive markets (Borrus and Zysman, 1997).

The key notion is that the ability of a firm to exercise market power moves from branding or simple production cost and quality to control over the market through product standards. The distinction is between open but owned standards, such as the operating system Windows owned by Microsoft but licensed to developers, and either fully closed standards in which all relevant technical information was wholly owned, such as IBM mainframes in their heyday, or entirely open standards, such as televisions, in which production cost and quality became critical. "Wintelism" and IPNs as a potent strategic combination are most evident in the electronics industry, but the approach is of general importance across a set of industries. It is spreading as an idea, a conception of how to proceed, that is often promoted through popular press versions such as the "virtual corporation" and by the availability of manufacturing service companies that provide production on a contract basis.

The Tactical Counterpart; Production Reorganization: The shift in strategy and competitive dynamics alters how a firm exerts market control and attacks the market. (Borrus and Zysman, 1997). For example, control of the market does not turn as critically on the distinctive internal mastery of the production process and assembly as was the case with Henry Ford's mass production or Toyota's lean production innovations. Advantage in the assembly of the final product does not guarantee market control. Factors more essential are speed to market, agility in the adjustment of product features, and the capacity to draw on the innovative capacities of particular nodes in the networks.

Because "Wintelism" shifts the locus of competition and the control of final markets, it alters the place of production and its organization. That in turn changes what that firm chooses to produce, what it sources outside, what it expects and requires from suppliers, and consequently how it approaches production. (Sturgeon 1997b, 1998) A critical consequence is that product advantage in the market for critical systems elements is often held through product standards in the form of intellectual property, not by trade secrets embedded in production, or defended through the very rapid evolution of product. Consequently, a firm can more easily subcontract production with reduced risk that core technology will be competitively developed by contract suppliers.

The International Production Network is the production organization counterpart to "Wintelism". IPNs are relationships among firms that organize, across national borders, the

research and development activities, procurement, distribution, production definition and design, manufacturing and support services in a given industry. Forms of international production networks evolving recently include large doses of contracted production provided by manufacturing services companies that organize particular activities or often the whole production value chain.

The new importance of contract production in IPNs involves:

disintegration of the industry's value chain into constituent functions that can be contracted out to independent producers wherever those companies are located in the global economy. (Borras and Zysman, 1997)

The scale and pace of contracting in the new IPN-related development is suggested by the rapid growth of the most visible manufacturing network service companies. These companies make a business of constituting production networks and providing production as a service on a contract basis. They have grown over the last decade from a marginal to significant industry segment accounting for over \$40 billion in sales in 1995 and growing steadily. Some estimates suggest that they now represent 10-20% of total product-level electronics manufacturing (up from less than 5% in 1982), and 40-50% of such dynamic electronics industry segments as PCs and modems. Firms such as SCI Systems and Solectron that provide global manufacturing services now produce on the scale of the MNCs themselves. IPNs, whether internally managed by MNCs or animated by contract manufacturers providing a production service, have turned large segments of complex manufacturing into a commodity available in the market.

Formerly vertically integrated assemblers like IBM, Hewlett-Packard, and Apple have disposed of captive production facilities, that is the facilities they themselves own and operate, and moved to extensive contracting. These moves allow firms to concentrate on design and the dramatic reorganization of marketing and distribution operations while conserving capital and gaining production flexibility.

What is New? Both the *purposes* and the *organizational form* of the International Production Networks have evolved over the years. Let us first review the evolving *purposes* of International Production Networks.

- *First*, multinational corporations may invest in a particular country *to gain access to natural resources*.
- *Second*, *to obtain access to a new local market*, a corporation may decide to expand overseas in order to circumvent host country barriers to trade.
- *Third*, *to take advantage of lower factor prices*, typically lower labor costs, a corporation may choose to invest overseas.

- *Fourth, cross-border firm relationships may evolve to take advantage of a more intricate division of labor.* In a first version, the division of labor will aim at creating economies of scale. This first division of labor may result from the political integration of a set of relatively homogeneous economies as with European integration. In a second version, division of labor may result from the linkages among diverse and heterogeneous economies.

Europe, a homogeneous region in pursuit of scale, and Asia, a heterogeneous region in pursuit of complex division of labor, create a contrast between these two forms of a more intricate division of labor. The East Asian story we examine in a moment is one in which the regional dynamic of economic development built intricate divisions of labor when quite heterogeneous mixes of technology capacity and wage costs were woven together. . Trade, contract, and investment link together very diverse production functions in countries such as Japan and Malaysia (or Austria and Hungary) to create complementary production arrangements which neither country would be capable of maintaining independently.

Next let us consider the evolving *organizational form* of the production networks.

(Sturgeon 1997b, 1998)

- Outward Processing and Branch Plant Production: In this first phase, firms established two types of production: 1) Branch plants were established to jump walls of protection to gain access to local markets; and 2) cost advantages were sought by locating production in low wage areas and market access.
- Contract Factories and OEM (Original Equipment Manufacture): Firms were created by local or regional entrepreneurs and governments to perform a range of tasks and produce a range of components or sub-systems defined by MNC final product producers. These firms continuously strive to extend the range of production and to integrate forward and backward from specific assigned points in the production chain.
- Classical MNC production networks which represent MNC management of their own facilities located in a set of countries, principally their own rationalization of largely owned affiliates.
- International Production Networks, which certainly include the classic MNC production networks and OEM factories with whom MNCs contract, have evolved to represent a great range of combinations of owned and contracted production. To at least suggest the diversity of arrangements, let us imagine two ideal type networks. The first type, *the MNC managed network*, involves MNC internal control of its own production chain. The second type, a *contract manufacturing network*, involves a contract service company that delivers a product or set of products on a contract basis. Now in turn both the MNC managed network and the Contract Service Company managed network involve a mix of owned and contracted facilities.

While these network forms evolved sequentially, it is awkward to refer to them as stages.

Empirically, they overlap in time, in particular countries and in the experience of particular MNCs that are initially at the core of the process. While each step utilized capacities that were

created in part in the prior step, the emergence of the more elaborate arrangements did not replace the earlier ones. Rather, the several forms co-exist, representing possibilities for different corporate production strategies.

For quite some time, in industries like garments, footwear, furniture, and toys, it has been established practice for "brand name" companies to depend on contract suppliers for essentially all of their manufacturing requirements. (Gereffi 1997) The emergence of contract production and regional arrangements in consumer durable sectors such as electronics, and now perhaps automobiles as well, turns the phenomenon away from one essentially confined to labor-intensive low- and middle- skill products in mature sectors. IPNs now touch the core elements of the industrial economy and the most innovative and rapidly expanding sectors.

The emerging international production networks now have clear characteristics:

- Whether the manager is the MNC or the contract service company, there is a mix of equity and contract.
- These networks are in constant flux and are constantly being jiggered and re-orchestrated. Production and responsibility are moved from place to place. The mix of equity and contract, internal management and outside sourcing, is constantly being adjusted.
- These networks increasingly rest on the innovative and entrepreneurial capacities of the local nodes. Particular producers, or districts, must absorb technology and skills to alter in any meaningful way their position in the chain of value.
- The networks do not represent communities of producers; rather, they tap into and organize the efforts of different national systems. By contrast, the Italian industrial districts are represented as horizontal linkages among roughly equivalent firms operating under equivalent legal and market conditions with roughly equivalent technical skills that continuously swap roles, from suppliers to final designers.

The networks, whatever their precise mix of equity and contract, are sometimes managed internally and sometimes managed by an intermediary. *Turnkey Production Network Services* are production network intermediaries, such as Solectron, that arise to manage the entire manufacturing network for a customer by providing turnkey production networks.

What are the Implications for Europe? A Few Clues About Production Networks From The Third Tier of Asian Development:

The new structure of production has emerged most extensively in Asia, at least in part because of the region's economic and political heterogeneity, and has formed a critical part of the development of Third Tier Asian countries. The Asian region is characterized by lines of political/military fracture and by webs of economic cohesion. The expansion of regional

economic ties is evident both in the rising levels of trade and investment within the region and the complex cross-national division of labor represented by the production networks. Lines of political fracture, evident in the security confrontations, ensure that national industrial and technological development strategies will persist in Asia. The Asian region will not see a European-style political bargain that drives a regional movement toward a single market and common rules for trade and investment. Economic heterogeneity is entrenched.

There is certainly no single Asian "miracle;" it is the third tier of development that concerns us most here. The entrenched economic heterogeneity was created by a series of nationally specific policy strategies and political arrangements that have supported growth. Four tiers of rapidly developing nations followed on each other's heels in the post WW II period. The constant political rivalry and tiered development entrench the competitive economic heterogeneity, a diversity of production functions if you will, from which the production networks have been woven. Let us briefly review those tiers of development (Zysman, Doherty and Schwartz, 1995).

- Asian Tier One: "Early Late Industrialization" is the case of Japan and its 19th century industrialization. Modern Japanese politics is a story of the political creation in relative international isolation of a market system intended to assure continued autonomy. The policies to support the creation of this system not only facilitated industrial development, but also reinforced the indigenous capacity to sustain technical development.
- Asian Tier Two: "Cold War Late Industrialization" consists of the Taiwanese and Korean cases, which demonstrate similarities with Japanese development strategy: an active government role in determining the levels and composition of private sector investment, aggressive export policies in an open international environment; and US economic and military assistance, as well as easy access to the US market. But differences are also clear. Because neither country had strong indigenous capabilities, they achieved export competitiveness through low-wages and "learning" from production experience rather than indigenous innovation.
- Asian Tier Three: "Late Late Industrialization: The Regional Strategy of Cross-National Production Networks": The Southeast Asian countries such as Thailand and Malaysia constitute yet a another tier of late developers. These "Third Tier" countries do not have the history of domestic manufacturing that developed indigenously in Japan and that was created through successful learning in South Korea and Taiwan. This lack of historical manufacturing experience renders Southeast Asian countries more dependent on MNCs for their industrial development.
- Asian Tier Four: From Exports to Endogenous Growth, the Question of China: It is likely that the newly emerging, highly populated countries such as China, and perhaps later India, may be able to follow largely autonomous, or more autonomous, development strategies. They may be able to define a distinct route, establish a fourth

tier, of their own that is a blend of regional divisions of labor and domestic autonomous development.

Third Tier development has been facilitated by, entangled with, and contributed to the development of the new IPNs with their large doses of contract management and has both contributed to and benefited from the Asian region's industrial competitiveness. The Third Tier Asian countries perceive their insertion into a cross-national division of labor as their best development option, and they have embraced a broad range of policies to make their business environment attractive to multinationals as part of a broader strategy to develop domestic capacity. A strategy of "autonomous" learning based on second generation technology and low labor costs, the route followed in South Korea and Taiwan, had been difficult for the Third Tier countries to envision. They judged, correctly in our view, that the managerial, technological, financial and know-how requirements are prohibitively high if the goal is to emerge and compete as market rivals with Japanese, American, Korean, Taiwanese, or European firms. Low labor costs, expanding regional markets, and political and economic stability in Southeast Asia initially lured both Japanese, American, and to a lesser extent European firms. While investment began with American, Japanese, and (to a lesser extent) European firms, it has been joined since the late 1980s by companies from South Korea, Taiwan, Hong Kong, and even Southeast Asian countries investing in each other.

The consequence of the International Production Networks and the host government policies to support them is that MNCs are playing a critical role in the economic development of the region; as MNCs expand their activities in Asia's Third Tier, they provide technology creation and transfer. Local firms on their own simply could not have become competitive on world markets on this scale in the short time since these countries have been independent. Host countries are able to exploit foreign technology while gradually building up their domestic capabilities. The success of this "regionalized" development strategy depends, ultimately, on the kinds of linkages that are created by local producers with foreign firms. If MNCs merely take advantage of low labor costs, they are unlikely to transfer significant technological capabilities to the host country. The result might be a "maquiladorization" effect of low value-added production epitomized by the Mexican low wage factories just south of the US border. By contrast, if inter-firm linkages create a trajectory that allows local subsidiaries and locally owned suppliers to move up the value-added production chain, the result is more economic dynamism and beneficial spillovers for host countries.

The quantity of the networks suggests their significance to the region's development. The wealthiest countries of ASEAN-- Singapore and Malaysia -- are also those with the deepest involvement of Foreign Direct Investment (FDI)-- 41% and 32% on average from 1985 to 1995 as a share of gross fixed capital formation. Consider Malaysia. By the end of the 1980s, wholly- or majority-owned MNCs made up 99 percent of the country's electronics exports, 75 percent of textile and apparel exports, over 80 percent of rubber products and more than 90 percent of machinery and electrical appliances. Singapore's exports are similarly dependent on the activities of multinationals. There is convincing evidence for the general argument that FDI had a strong positive impact on growth and not the reverse. (Blomstrom, Lipsey, and Zejan 1992)

In Asia, even where FDI is not the driving force, networks that permit local companies, financed using domestic investment or foreign funds, to participate in global markets are still important. In South Korea, for example, the electronics sector has been an important part of the country's growth, accounting for roughly 10% of manufacturing output since the mid-1980s, with more than half of the output exported. The share of these exports that is sold under the name of other companies (many of whom provided design input, particularly in the early years before Korea had built up its own technological base) has remained very high. For example, in 1989, the Original Equipment Manufacturer (OEM) share in electronics exports was 60% for Samsung, the country's largest producer (Ernst 1994) down from 95% just a few years earlier. The fall off strongly suggests that network participation can be a stopgap measure for emerging producers as they develop their own international presence.

The critical factor that establishes the production network properties is the home base of the core MNC--be it a final producer or contract manufacturer. For example, Japanese production networks at present are dominated by a core company with extensive use of dominated local subsidiaries. Japanese arrangements have proven rigid, slower, and less open to local innovation. By contrast, American production networks are increasingly contract networks. They are usually managed from the United States and consist of short-term bargains, not longer term alliances. Indeed, contract manufacturers and their American customers seek to limit dependence on each other. American networks have proven to be significantly more open and agile than the Japanese and have contributed directly and powerfully to the competitive market surge of American electronics firms.

Part II: Transition, Adaptation, and Production Networks in Eastern Europe

Europe is now a much more heterogeneous economy than before. As Jean Pisani Ferry argues, the disparities between the present EU membership and those to the East is an order of magnitude larger than that of the rich and poorer members when Greece and Portugal joined. (Eichengreen, Barry and Richard Kohl (1997) Pisani Ferry 1998) The shifting strategic imperatives of industrial competition are setting the terms for the countries that constituted the former Soviet Empire to re-enter the world economy and to re-integrate with Europe. The Eastern producers do not have, by and large, the management and technical skills to compete with MNCs; most cannot provide the quality of production and certainty of delivery required to be first tier suppliers. Moreover, the East European economies for the most part do not have the physical infrastructure (for instance, communications, transportation, financial services) to support effective and rapid development of indigenous world class firms. As argued, the Central and East European situation in this regard is analogous to that of the Third Tier Asian countries. Consequently, their positions in supply networks organized and maintained by European, American, and Asian multinationals may prove critical.

The principal MNCs operating in Europe will drive the regional patterns of production, investment, and venture. Those MNCs will base their strategies on judgments about the capacities of the Eastern political economies to deliver resources in a form that would enhance the overall competitiveness of their production networks. Those judgments, evidently, have evolved as the Eastern transformation has proceeded and as the Western firms reassess the assets in their neighborhood. Consequently, it is not surprising that the MNCs would be slow to recognize and capture the possibilities inherent in the new networks. Thus while a process of experimentation and development is just beginning, it is improbable that initial developments will be good predictors of final patterns (Landesmann, 1997). Nonetheless, the preliminary evidence suggests that the initial elements of at least some form of European International Production Networks are being put into place. Indeed we must recall that the dense webs of production in Asia that eventually permitted new production systems were built up over years from Outward Processing Traffic (the export of a single, usually labor-intensive portion of MNC internal supply networks, and a simple version of vertical intra-industry trade) contracts and MNC-controlled FDI which together helped to create or transfer the required skills and infrastructure. With that caveat in mind, let us examine the opening patterns and initial strategies.

The Beginning of Network Experimentation and the Demand for Network Participants:

The emerging evidence suggests a steady stream of experiments in network organization and imply a steady development toward network based development is possible. Network experimentation in complex manufacturing that goes beyond OPT arrangements is concentrated in a handful of the Eastern Countries and is being conducted most extensively by German firms.

The Aggregate Data: Intra-industry trade is exchange within a supply chain of which producers representing diverse packages of wages and technical skills.. Suggested in a variety of ways, by wage rate differentials, productivity differentials, and unit value of traded goods, it represents telltale evidence of the emergence of complex IPNs. (Landesmann 1997; Guerrieri 1997; Lemoine 1997). Recent East-West European trade data indicate a marked increase in vertical intra-industry trade, far greater in fact than the already rapid expansion in regional trade as a whole. (Lemoine 1997; 22) Indeed, for Hungary, the Czech Republic, and Slovenia with Poland close behind, intra-industry trade indices are already higher than in EU countries Portugal and Greece. From a different vantage, the reorientation of trade away from the CMEA is intertwined with a reorganization of Western production chains and Eastern entrance into them. (Kurz and Wittke 1997)

Discussion of East West trade has focused on OPT arrangements which are, in fact, often a step that leads toward complex, capital-intensive cross-national production networks. In Asia, outward processing began the complex adaptation of Third Tier Development based on insertion into MNC production networks. European OPT typically reflects the tariff regime that allows an EU firm to import processed or assembled products and avoid regular tariffs when the parts to be processed or assembled by the outside subcontractor are supplied by an EU principal. The US equivalents are sections 806.30 and 807 of the tariff code, which add duties only for foreign-country value added. OPT drove Central and East European exports in the early 1990s, accounting for nearly 20% of total EU exports in 1992. Depending on the country and the sector, outward processing accounted for more than 40% of exports. In 1992, the OPT from five Central European countries – Hungary, Czech Republic, Slovakia, Poland, and Slovenia – totaled 45% in Leather and Shoes, 85% in Clothing, and interestingly, 43% in Electrical Machinery. (Lemoine 1997;6)

Movement in the direction of more complex networks with more extensive local technological contribution is underway in the more advanced Central European countries. OPT

has been dropping there since 1992; Hungary and Slovenia, the two eastern countries with the highest wage rates, are driving this adjustment. The Balkan countries, Romania and Bulgaria have been making up for the difference, especially in labor-intensive sectors such as leather and shoes and clothing. (Lemoine 1997;8-9, Graziani 1997) .

FDI in capital-intensive industries such as automobiles, machinery, and chemicals has displaced OPT in Central Europe. Much of the FDI has been geared toward export-oriented businesses, including intermediate good products such as machinery, electrical equipment, and transport equipment. (Hunya 1997; Zemplerova and Benacek 1996) Lemoine concludes from an analysis of FDI data that "Hungarian industry is already internationalized to a large extent; in Poland and in the Czech Republic, this internationalization is under way." (Lemoine 1997;10) Initial FDI patterns reinforce the aggregate trade evidence. IPNs, though still in infancy, are increasingly becoming a part of the reconstitution of the European economy.

Industry Case Studies: Industry analyses uncover the logic of the networks that lie behind the trade data. For now, European firms are using Eastern producers as part of production networks in two ways. (Kurz and Wittke 1997) The "*least cost strategy*" moves existing production arrangements to a lower wage location, but those low wage nodes in the Visegrad countries have quickly adapted to more expanded roles that took advantage of their skills. In Asia, similarly, even these limited starting points permitted producers, and countries, to learn, invest, and move up market. Transfer to low wage locations, of course, involves relatively little effort to plan and prepare. Consequently, they take place first and fastest.

The pools of existing East European skills already permit a second strategy. "*Complementary production*" draws on the special skills of the Eastern producers, or organization of low-cost skilled work to create distinctive capacity. The stated objective for both Skoda (Volkswagen) and ABB is to offer Western quality and technology at Eastern costs. Because developing strategies of complementary specialization requires longer planning and indeed greater operational certainty, the planning period is longer and only now is taking full effect. (Kurz and Wittke 1998)

German firms under cost pressure have, as a group, made the most extensive use of the "complementary production" to reconsider and reorganize their production strategies. Germany represented the destination for more than 30% of the exports of Poland, Hungary, and the Czech Republic and the source of more than 20% of all imports for those countries. The geographic

proximity matters. As the CEO of Opel said: "Having a new plant on your doorstep is different from having it in Indonesia." (Kurz and Wittke 1998) Complementary production is not limited to Germany. For many European firms the Asian experience is a guide. Corporations across Europe are moving aggressively to take advantage of the more heterogeneous production environment created by the larger Europe.

In the auto industry, a mix of least cost production, transfer of existing production to lower cost sites, and "complementary specialization", the reorganization and reconsideration of the value chains, is evident. (Ruigrok and Van Tulder 1997, Kurz and Wittke 1998) As important, European auto companies are increasingly developing products for Eastern European market that will serve the bottom end of the market world wide. This is a reversal of the tendency to simply adapt for the East models "phased-out" in the West. Moreover, they are now encouraging their own suppliers to move East with them.

In electrical equipment, appliances, and electronics, the processes of reorganization have been slower. But steadily major European companies such as Phillips, Siemens, ABB, and Ericsson as well as American firms such as IBM and GE have rethought production using Eastern production. In most cases advanced engineering is kept in the West and skilled production, albeit lower wage skilled production, is moved East. (Kurz and Wittke 1998, Sturgeon 1997a, Linden 1998) As important, there are hints that nodes of local activity are emerging. System clusters of related activities have emerged, including PCs in the Czech Republic, hard disk drives and audio-visual equipment in Hungary, and televisions in Poland. In the electrical sector, Hungary has strong export capabilities in lighting equipment and refrigerators, while Poland is developing clusters in washing machines and batteries.

In textiles and apparel the move East has been led by the German and Italians. With the emphasis on low wage production, OPT arrangements and were initially important, but FDI has begun to be favored for the Visegrad countries. OPT arrangements have been moved further East as wages have risen. (Graziani 1997) A similar process of creating custom extended work benches in the East for low wage/ low technology activity is evident in the furniture industry and the upholstery industry where 50% of German production now comes from German Polish factories.

The significance of the production reorganization is evident when we consider particular firms. The cases of firms we have examined indicate that where a company, or senior executives,

have experience and understanding of the Asian story of heterogeneous networks, then there is often a strategic explicit development of cross-national production networks.

- Consider Neutronics, the Vienna based subsidiary of Philips that has created a core engineering group in the West and a manufacturing group attracting component manufacturers in Hungary. The CEO created the group as a conscious effort to create in post-Cold War Europe the production networks he had developed in Asia. Philips has explicit maps of network possibilities detailing potential association or contract arrangements. The company reports that it has intentionally placed production in Hungary as a means of maintaining factories in Austria that depend on lower cost components and which might have had to be moved to Asia.
- Consider Elqotec, a Finnish company that supplies contract manufacturing services. One project uses production facilities in Lithuania to supply contract production services to major European electronics firms aiming at the Soviet Market.
- Consider South Korea's DaeWoo Corporation, which in the summer of 1995 began to generate in Europe a cross-national production network with a capacity of over half a million vehicles annually and the possibility of autonomous innovation at the individual nodes. It has done so through purchasing automobile assemblers in Eastern Europe and trying to acquire such component producers as Steyr-Daimler-Puch in Austria.
- Consider Volkswagen, which through its purchase of the Czech automobile manufacturer Skoda, has enhanced its innovative potential and production position. Skoda has developed a brand-new model, the *Octavia*. Volkswagen paired about one-third of Skoda's domestic suppliers with foreign partners, thereby enhancing the production network through increased product and production innovation. (Schwartz and Haggard 1997)
- Consider General Electric, which entered into a joint venture with Tungsram in the Hungarian electrical engineering sector. Today, Tungsram is one of a handful of General Electric's recognized most advanced production sites.
- Consider Ericsson, successful in the new consumer durable of cellular telephony. After a review of contract manufacturing services and Asian production networks, it decided to implement a supply-base network approach to production. The company has recently sold many of its factories to Flextronics, an American contract manufacturer whose primary operations are in Asia but that is developing an American business. Flextronics, with the Ericsson contract in hand, has in turn, now bought Neutronics with its ties to the East.

Distinctive Features of European Networks:

In sum, the organizational experimentation is going to generate networks in Europe. Speculating on the precise form the networks will take is premature. But certainly, the European experience will not follow an Asian trajectory. Let us list some of the reasons that the European networks are going to be different from those in Asia.

- The core European companies have strengths in different sectors than the American and Japanese firms that first orchestrated these production arrangements in Asia. The lead sectors will be different—automobiles and mechanical engineering rather than electronics.
- The Central European economies that are being first drawn into Western European production networks are mis-developed, rather than underdeveloped with a low wage workforce. They developed to incorrect price signals; they are by contrast, characterized by inexpensive but relatively skilled labor. There are pools of trained skilled workers and engineers in the East whose talents have been applied to the wrong undertakings.
- The national base, and hence the strategic logic of the lead MNC firms, will be different. Evidently, European MNCs will be far more involved in the development of Central and Eastern Europe than they were in Asia.
- Production will likely be targeted for Europe rather than, as in Asia, for export out of the region.
- In Europe transportation will principally be by land. By contrast, the network "nodes" are linked in Asia by water and air which allowed any country to facilitate its initial entry into cross-national development by investment in its own ports. The extensive development of Europe-wide rail and road infrastructure makes each country dependent on the investments of its neighbors. In the meantime, eastern countries that border on Western Europe – Czech Republic, Hungary, Poland, Slovenia, perhaps Estonia and Slovakia – will have relative advantages.
- The fundamental policy stance in Asia and Europe is radically different. Asian countries have used an effective state to promote and protect industry, even when they have been export oriented in their market strategy, while the former Eastern Bloc countries began with the political strategy of dismantling a corrupt state economy, leaving themselves with a strategy of aggressive liberalism as the seeming alternative.

What is the Potential Supply of Network Nodes?

Since we are at the beginning of a trajectory of development, the question is not simply the current extent of such arrangements. Rather it is how significant their role can become. Assume that a broad mix of European, American, and Asian companies decided to develop these production networks. Would there be a supply of "production nodes" in the East sufficient to satisfy the demand? There is no evident answer.

To begin, there is a great variation across the region. Three distinct sub-regional patterns are emerging: a) *delayed development* in Russia and the former Soviet Republics; b) a *transition that is still in early days* in places like Romania and Bulgaria; and c) *sustained restructuring* in a group of Central European countries including Poland, Hungary, Slovenia, and the Czech Republic. At least, "the potential for and speed of catching up is relatively high in Central and Eastern Europe precisely because of the inherited unbalanced nature of assets (such as good

stocks of engineering skills, insufficient capabilities/capacities in design, marketing communication infrastructure, etc.)." (Landesmann 1997;2) Indeed, the restructuring in each of these four Central European countries are themselves very different but overall, development in the Eastern economies has increasingly meant involvement in complementary production. Yet, taken as a set, the Central and East European countries may not in themselves be a large enough source of production nodes to alter the way in which European business as a whole is organized and to affect its competitive position in global markets.

Perhaps, as Central and Eastern Europe begins to form production nodes that extend the networks further east— just as Taiwanese and Korean production networks have contributed to the extension of the Asian regional production system— then perhaps producers in Central Europe and the former Soviet Union might join in these networks. But for now the primary networks that have emerged are not production networks. Rather, for example, Russia, are survivalist or predatory networks, rent extracting arrangements to preserve position and that too often take criminal form. (Castells 1998, Huber and Woergoetter 1998, Fish 1998, Cohen and Schwartz 1998)

If They Matter So Much, Why Are Production Networks Not Part Of The Debate On Europe?

Though significant in the aggregate data and the cases, IPNs have not been part of the discussion of the Eastern transition or the reintegration of the European economy. There are two types of explanations,

First, European companies have, to date, been slow to explore the new strategies or exploit the possibilities of these cross-national contract production arrangements. There are a number of reasons.

- The strategic evolution of these networks is being driven by competition in the electronics industry. (Borras 1996, Borras and Zysman 1997) Because the European position in electronics is defensive as well as weak, most firms have not been driven to explore these arrangements and their power.
- European companies have had limited production involvement in Asia and Asian production networks. This is in part, but not entirely, a consequence of the fact that the European firms have not for the most part been players in the electronics boom and its production reorganization in Asia. Philips is one significant exception and also one daring example of the new network arrangements in Europe.
- European producers may have been reluctant to adopt these mechanisms because legal restrictions on labor reorganization and layoffs risk transforming such changes in production arrangements into confrontations and political battles.

Second, and as important, the terms of the debate on the transition to market economics and the reintegration of the European economy divert attention away from production networks issues. Conventional discussions of the Central/Eastern European adjustment can be grouped into one of three analytic categories. First, an *economic vantage*, focusing on how markets work, proposes that both the sectoral composition and the scale of trade and investment can be best predicted by traditional elements of the analysis of comparative advantage. These authors contend that if you set up market institutions properly--which often reduces to privatization and the creation of market driven prices--then resources will go to most efficient use. Second, a *political vantage*, focusing on what governments do, proposes that government policies of regulation, subsidy, investment, and trade protection--to list a few categories--will shape industrial adjustments, both in the East and West, by altering market signals and resource endowments. But describing government policies does not help display the economic process in a manner that can illuminate choices of the actors. Third, a *sociological vantage* focuses on networks, the arrangements of influence and networks of control that have emerged in the former Socialist economies. The ownership relationships, at the core of these networks, are implied to be a function of the transition and hence differ among countries. Those relationships may be necessary to survive politically, to accumulate sufficient inputs to survive by managing claims and relationships that emerged in an administered economy. But analyzing them does not address the question of how markets work. This literature has the defect of most similar sociological studies of arrangements of power or influence in the economy. It describes a structure and not its dynamic. It does not tell us how the fundamental economic problem of who produces what for which markets is being solved. In sum, the networks don't appear in the debate because there is no optic through which to see them.

Production Networks and the Eastern Transition: A Framework for Discussion:

Understanding the transition and the recreation of the unified European economy requires a focus on the firm in a regional reorganization, that is a regional re-division of labor. Let us sketch an optic to look at the Eastern transition that highlights production networks. Firms make choices in an environment defined by frameworks of incentives and constraints, frameworks that are always created by political and policy choices. Take economic endowments (the first vantage), government policies (the second vantage), and social networks of influence and control

(the third vantage) to define at any moment a constrained "space" within which firms develop strategies. Political economists have increasingly used the notion of a "national framework of incentives and constraints" to link a country's distinctive institutional structure to typical corporate strategies and organizational patterns. (Soskice 1993, Zysman 1994) Once established the frameworks then systematically define the environment of the firm by setting constraints on particular actors. The frameworks encouraging predictable lines of strategy also induce predictable patterns of interaction among the principal marketplace players, generating in each country a market "logic."

Extend that style of analysis to a regional economy, that is instead of conceiving national frameworks of constraints and opportunities by focusing principally on a particular countries arrangements let us conceive of regional sets of constraints and opportunities. Here, the regional "frameworks" are a function of the regional architecture of institutions and power. As a regional architecture is altered, as in Europe with the end of the Cold War, or evolves, as in Asia with several tiers of development, the regional framework of market incentives and constraints shifts. As it shifts, we would expect corporate strategies to adjust and sometimes innovation in strategy and organization to result. In fact, political choices in West and East are generating "a new regional architecture as a result of political choice that sets constraints and opportunities". That in turn is creating a new "regional framework" for firms operating across the old political frontier between the two political blocs.

In sum, international production networks, which are significant in the aggregate data and case studies, are not apparent in the policy debates. That is an artifact of the particular industrial experience of Europe and the structure of the transition debate. Select a different optic and they stand out clearly.

Part III: The Reorganization of The European Region: Will A Unified Economy Be Competitive and Politically Stable?

Including Central and East European firms into a European division of labor will be painful, often forcing difficult and socially costly industrial adjustments. Certainly, East European demand for higher quality consumer goods, food products, and industrial equipment can act as a significant boost to the Western economies that supply them. But the political question is whether the industrial adjustments with their inevitable dislocations can be managed

or will create enduring political consequences. By way of conclusion, let us briefly consider how the notion of International Production Networks alters any judgment about the character of the costs of industrial adjustment and their political implications.

International Production Networks and European Competitiveness:

One version of the story of industrial adjustment is that Eastern Europe is a huge pool of low cost labor, often low cost *skilled* labor, that consequently threatens both Western jobs that might move East and wages of Western workers who must compete with Eastern production. Seen as market rivals that force economic adaptation or require subsidy, the East European producers represent threats to Western interests that raise the political costs of creating a new regional architecture for Europe. Ours is a second, alternative, version of the story. Examining international production networks suggests that Eastern producers may become complements to Western production, permitting the competitive reorganization of European production that defends market position and jobs. Will the new more heterogeneous European architecture, representing a different framework of incentives and constraints on firms, alter the regional competitiveness of Europe? Will it augment the capacity of firms to sustain market position in competition while sustaining productivity increases?

We must distinguish this new heterogeneity from the traditional expansion of an ever more homogeneous European market. The creation of the Common Market facilitated an expansion of intra-European trade and symbolized the linking of national markets; while the Single European Act facilitated an expansion of intra-European investment as well as trade and symbolized a commitment to a sufficient convergence of domestic rules and to an arrangement in which national structures did not in themselves constitute obstacles to trade and investment. The several steps of the European construction created an ever more homogeneous economic space, one that sought along a range of dimensions to compress the range of national differences. The drive toward a homogeneous single economic space has meant that firms could pursue the scale economies captured in that larger single market and later fostered the consolidation of a large number of national players into a more limited number of groups.

Will an enlargement that generates a dense and diverse web of production networks add to the capacity of firms based in Europe to compete with firms that have other regional home bases? They may be able to do so, as in Asia, by providing market agility (that is, the ability to

rapidly introduce new products and reorganize production), create a more complex nuanced division of labor within the region, and induce innovation in product and process. If production that would otherwise move to Asia stays in Europe and if production presently in Asia moves back to Europe, then the gains could be substantial for Europe as a whole and particularly for some segments of higher value-added production that will locate in Western Europe. In a product such as a VCR, a whole range of components and sub-assemblies could be produced cost-effectively in Eastern Europe. But when final assembly shifts from Europe to Asia, many of those parts will be procured locally from Asian suppliers. So even if Eastern Europe represents only a pool of low-cost labor, it may because of proximity serve to maintain higher wage jobs in Western Europe. Of course, if Western companies, as one set of German firms is already doing, draw on the low-cost skilled labor to develop distinctive *complementary*, production capacities, they may be able to develop distinctive product and market strategies.

What we now know is that CEEC (Central and East European Countries) trade advances seem to have come at the expense of Asian producers, especially second--tier NIEs (Singapore, Hong Kong, South Korea, and Taiwan). From 1988 to 1995 Central Europe accounted for half of the increase in EU imports of industrial manufactured products from emerging regions outside the OECD; the corresponding import share of those NIEs remained unchanged. The major gains were in Clothing, Leather and Shoes, Wood and Paper (including Building Materials), and Engineering. (Lemoine 1997) The critical question for our analysis is whether over time the Asian production displaced will be simply low labor-cost standard product or whether it will be part of the emergence of alternate production networks in Europe. The case experience to which we refer above suggests that at least some of the production is staying in Europe as part of the emergence of complex cross national production networks.

There are different risks, East and West, in this interpretation. One question for "Western Europe" is whether in the short term the production-employment gains from complementary specialization, gains that result from keeping production in or recapturing production for Europe, are offset by production-employment losses to Eastern Europe. A second question is whether the return of production to Europe generates a technology trajectory of product and process innovation in Europe that allows European based companies to create market advantage. The evidence, as we read it, does not yet answer this question. Nor does it tell us whether policy can influence the outcome.

The risks for the East in this story are clear. Production organized by Western companies can become a series of Eastern enclaves isolated from the rest of Eastern economies, rather than the foundations of broad and sustainable growth. The fate of the Eastern economies, almost certainly, will depend on the choices of their several governments to provide infra-structure, skill development, and above all stable, predictable, and evenly enforced market rules. The national variations in basic strategies for privatization, stabilization, price and trade liberalization, and industrial growth constitute "implicit development strategies", and it is those national "implicit strategies" that will account for different market outcomes, including patterns of attachment to the West. (Comisso 1998, Schwartz 1997, Schwartz 1998)

International Production Networks and the Opportunity for a New European Bargain:

The political implications of our alternate story are significant. If international production networks permit Eastern European producers to be portrayed as economic complements, rather than rivals, then we speculate that the political reconstruction of a stable Europe will be simplified. After World War II an economic instrument, the European Community and its Common Market, was used as a device to accomplish a security purpose. Successful economic reconstruction and development contributed to anchoring Germany in the West and creating the national political stability on which the Western Alliance rested. "The postwar architecture of Europe thus rested on a well understood and vividly depicted European bargain." (Weber and Zysman, 1997)

The post-Cold War architecture of Europe, the new architecture, is being constructed. But the external threats against which it would protect are ambiguous and the domestic strategies for growth that it might facilitate are unclear. As important for our purposes, the complementarity of security and economic means and objectives is ended. There are now visible economic prices to pay for security objectives. Certainly Europe's objectives toward the East will be more modest than Germany's toward its own re-integration and, hence, less costly. Nonetheless the gap is enormous; there is a radical divergence between rich Europe and its less developed partners that would now join the community (Pisani-Ferry, 1997). Radical disparities in incomes and development levels create costs that will be felt directly in the budget of the EU through , for example, structural fund expenditures. Those disparities will be also be expressed through the market pressures of wage-based migration and policy tensions of significant disparities of

interest on matters such as environment and social policy. In absolute terms, measured by percent of GDP, the costs of the disparities may at first glance appear low. But the costs press immediately on the budgets of the European Community and more generally contribute to the sense of "global" dislocations that mobilize political resistance. Certainly the disparities also complicate European Union governance. One consequence of incorporating significant disparities within the Community would be abandoning the notion that, except for temporary delays, the European countries would move forward together. It would mean recognizing "Variable Geometry, the notion that countries would move with distinct but different packages of integration, as a necessity. Of course, "Variable Geometry" represents an endless series of ad hoc arrangements that ultimately fragment the overall European bargains

Now Europe must decide what economic prices in forms such as market access and subsidy to pay for security. The United States after World War II supported the development of political allies through open markets and development assistance. Europe is being called on to do the same. Europe must do so not in the golden era of growth but in an era of high unemployment and demands to contain European budgets. Again, "It is not simply the ambiguous character of the current threats or the difficulty of defining a security doctrine in the absence of a single clear threat, but rather that there is no clear policy solution to the economic problems and no clear coalition to support it. Hence the question of costs, both direct budget costs and the indirect costs of accelerated adjustment, become central." (Weber and Zysman 1997)

If we view the East European countries as a source of migrants or product that accelerates the pressures of structural adjustment in the West, then an economic/security trade-off is accentuated. But the Eastern countries also represent the possibility of a fine division of labor that can contribute to the competitive position of the European Region. What if the division of labor possible with the heterogeneity provided by the East helps maintain in Europe production that might otherwise have left the region, or brings back production that has already left, or permits new production that might not have otherwise been considered, to expand in Europe? Then the conflict posited above is muted. The possibility is real that the very disparity that creates or at least amplifies the economy - security tensions also represents a heterogeneity of production functions that offers a solution. Much then rests on where the Central and East European country firms become inserted into the European division of labor. That in its turn will be profoundly influenced by the terms of enlargement that are agreed between the EU and the

several applicants. In sum, the framework of cross-national production networks in a new industrial competition allows us not only to address the question of economic adaptation but also the political adjustments within Europe.

Citations

- Borras, Michael (1996) "Left for Dead: Asian Production Networks & the Revival of U.S. Electronics," in *The China Circle* (San Diego: IGCC, 1996)
- Borras, Michael and John Zysman (1997) "Globalization with Borders: the Rise of Wintelism as the Future of Industrial Competition" Industry and Innovation, Volume 4, Number 2, December 1997
- Blomstrom, Magnus, Robert Lipsey, and Mario Zejan (1992) "What Explains Developing Country Growth?" NBER Working Paper #4132, Cambridge, MA: National Bureau of Economic Research
- Castells, Manuel (1997) "Paths and Problems of the Integration of Post-Communist Russia into the Global Economy: A Concept Paper" To be Published in Stephen C. Cohen, Andrew Schwartz, and John Zysman, eds., in The Tunnel at the End of the Light: Business Networks and Market Development in Russia, Forthcoming from IAS Publications, 1998
- Cohen, Stephen C. and Andrew Schwartz (1997) "The Tunnel at the End of the Light: Why Markets and Corporations Require Political and Institutional Foundations" To be Published in Stephen C. Cohen, Andrew Schwartz, and John Zysman, eds., in The Tunnel at the End of the Light: Business Networks and Market Development in Russia, Forthcoming from IAS Publications, 1998
- Comisso, Ellen (1998) "Implicit Development Strategies in Central East Europe and Cross-National Production Networks" To be published in John Zysman, ed., Will There Be a Unified European Economy? International Production Networks, Foreign Direct Investment, and Trade in Eastern Europe. Forthcoming from IAS Publications, 1998
- Eichengreen, Barry and Richard Kohl (1997) "The State and the External Sector in Eastern Europe: Implications for Foreign Investment and Outward-Processing Trade" Paper prepared for the Conference held by the Berkeley Roundtable on the International Economy and the Kreisky Forum for International Dialogue: "Will There Be a Unified European Economy? International Production Networks, Foreign Direct Investment, and Trade in Eastern Europe." Vienna, June 5-6, 1997.
- Ernst, Dieter (1994) "What are the Limits of the Korean Model? The Korean Electronics Industry Under Pressure", BRIE Monograph, UC Berkeley, June 1994
- Fish, M. Steve (1998) "The Roots and Remedies for Russia's Racket Economy" to be published in Stephen Cohen, Andrew Schwartz, and John Zysman, eds., The Tunnel at the End of the Light: Business Networks and Market Development in Russia" Forthcoming from IAS Publications, 1998.
- Gereffi, Gary (1997) "International Trade and Industrial Upgrading in the Apparel Commodity Chain" Duke University, October 1997
- Grabher, Gernot and David Stark eds. (1997) Restructuring Networks in Post-Socialism: Legacies, Linkages and Localities Oxford University Press, Oxford and New York, 1997
- Graziani, Giovanni (1998) "Globalization of Production in the Textile and Clothing Industry: The Case of Italian FDI and Outward Processing in Eastern Europe" To be published in John Zysman, ed., Will There Be a Unified European Economy? International Production Networks, Foreign Direct Investment, and Trade in Eastern Europe. Forthcoming from IAS Publications, 1998
- Guerrieri, Paolo (1998) "Trade Patterns, FDI, and the Industrial Restructuring of Central/Eastern Europe," To be published in John Zysman, ed., Will There Be a Unified European

- Economy? International Production Networks, Foreign Direct Investment, and Trade in Eastern Europe. Forthcoming from IAS Publications, 1998
- Huber, Peter and Andreas Woergoetter (1998) "Russian Business Networks" To be published in Stephen Cohen, Andrew Schwartz, and John Zysman, eds., The Tunnel at the End of the Light: Business Networks and Market Development in Russia. Forthcoming from IAS Publications, 1998
- Huber, Peter and Andreas Woergoetter (1998) "Observations on Russian Business Networks" Post-Soviet Affairs Volume 14, Number 1, pg. 82-92
- Hunya, Gabor (1997) "Foreign Direct Investment and Economic Modernization in the CEECs. WIIW. Mimeo.
- Kurz, Constanze and Volker Wittke (1998) "From 'Supply-Base Driven' to 'Market Driven' Integration: Patterns of Integrating Central-East European Economies by Using Their Industrial Capacities" Paper prepared for the Conference held by the Berkeley Roundtable on the International Economy and the Kreisky Forum for International Dialogue: "Will There Be a Unified European Economy? International Production Networks, Foreign Direct Investment, and Trade in Eastern Europe." Vienna, June 5-6, 1997.
- Kurz, Constanze and Volker Wittke (1998) "Using Industrial Capacities as a Way of Integrating Central-East European Economies" To be published in John Zysman, ed., Will There Be a Unified European Economy? International Production Networks, Foreign Direct Investment, and Trade in Eastern Europe. Forthcoming from IAS Publications, 1998.
- Landesmann, Michael (1998) "East-West Integration: Vertical Product Differentiation, Wage Productivity Hierarchies" To be published in John Zysman, ed., Will There Be a Unified European Economy? International Production Networks, Foreign Direct Investment, and Trade in Eastern Europe. Forthcoming from IAS Publications, 1998
- Lemoine, Françoise (1994) "CEC Exports to the EC (1988-1993): Country Differentiation and Commodity Diversification. Paris": CEPII, Working Paper 94-15.
- Lemoine, Françoise (1998) "Integrating Central/Eastern Europe in the European Trade and Production Networks." To be published in John Zysman, ed., Will There Be a Unified European Economy? International Production Networks, Foreign Direct Investment, and Trade in Eastern Europe. Forthcoming from IAS Publications, 1998
- Linden, Greg (1998) "Transformation in the Transition Economies: Electronics Networks in Eastern Central Europe" To be published in John Zysman, ed. Will There Be A Unified European Economy? International Production Networks, Foreign Direct Investment, and Trade in Eastern Europe. Forthcoming from IAS Publications, 1998.
- Pisani-Ferry, Jean (1998) "Variable Geometry in Europe: Implications for External Relations" To be published in John Zysman, ed., Will There Be a Unified European Economy? International Production Networks, Foreign Direct Investment, and Trade in Eastern Europe. Forthcoming from IAS Publications, 1998
- Schwartz, Andrew (1997) "Variations in Property Rights and Foreign Direct Investment in Central/Eastern Europe" Paper prepared for the Conference held by the Berkeley Roundtable on the International Economy and the Kreisky Forum for International Dialogue: "Will There Be a Unified European Economy? International Production Networks, Foreign Direct Investment, and Trade in Eastern Europe." Vienna, June 5-6, 1997.

- Schwartz, Andrew (1998) "The Best Laid Plan: The Unanticipated Evolution of Privatization in the Czech Republic" University of California at Berkeley, forthcoming, 1998.
- Schwartz, Andrew and Stephan Haggard (1997) "Privatization, Foreign Direct Investment, and the Possibility of Cross-National Production Networks in Europe" Paper prepared for the Conference held by the Berkeley Roundtable on the International Economy and the Kreisky Forum for International Dialogue: "Will There Be a Unified European Economy? International Production Networks, Foreign Direct Investment, and Trade in Eastern Europe." Vienna, June 5-6, 1997.
- Soskice, David (1993) "Innovation Strategies of Companies: A Comparative Institutional Explanation of Cross Country Differences." Wissenschaftszentrum Berlin, July 1993. Incomplete Draft cited with permission from the author.
- Stark, David (1996) "Recombinant Property in Eastern European Capitalism," in American Journal of Sociology, Volume 101 No. 4 January 1996
- Sturgeon, Tim (1997a) "Turnkey Production Networks in Electronics: New Opportunities for Cross-Border Integration and Economic Development in Eastern Europe" Paper prepared for the Conference held by the Berkeley Roundtable on the International Economy and the Kreisky Forum for International Dialogue: "Will There Be a Unified European Economy? International Production Networks, Foreign Direct Investment, and Trade in Eastern Europe." Vienna, June 5-6, 1997.
- Sturgeon, Tim (1997b) "Does Manufacturing Still Matter?: The Organizational Delinking of Production from Innovation" BRIE Working Paper 92B, 1997
- Sturgeon, Tim (1998) "The Rise of the Global Locality: Turnkey Production Networks in Electronics Manufacturing" University of California at Berkeley, forthcoming, 1998
- Van Tulder, Rob and Winfried Ruigrok (1998) "European Cross-National Production Networks in the Auto Industry: Eastern Europe as the Low End of the Car Complexes" To be published in John Zysman, ed., Will There Be a Unified European Economy? International Production Networks, Foreign Direct Investment, and Trade in Eastern Europe. Forthcoming from IAS Publications, 1998
- Weber, Steve and John Zysman (1998) "Why the Changed Relation Between Security and Economics Will Alter the Character of the European Union." To be published in John Zysman, ed., Will There Be a Unified European Economy? International Production Networks, Foreign Direct Investment, and Trade in Eastern Europe. Forthcoming from IAS Publications, 1998
- Zemplerova, A. and V. Benacek (1997) "Foreign Direct Investment- East and West: The Experience of the Czech Republic" Prague, CERGE-EL and Charles University
- Zysman, John (1994) "How Institutions Create Historically Rooted Trajectories of Growth" Industrial and Corporate Change Volume 3, No. 1 (Oxford: Oxford University Press)
- Zysman, John, Eileen Doherty and Andrew Schwartz (1995) "Reorganizing the European Economy: Lessons of East Asia for Central/Eastern Europe," BRIE Working Paper 83, 1995