

## **Innovative growth in peripheral regions: some implications for Greece**

NIKOS KOMNINOS

The radical changes in the processes of development during the 80s and 90s and the new conditions of growth are closely linked with flexible production strategies, high technology, R&D, and industrial branches producing for highly competitive international markets. The geographical configuration of these conditions is multiform. There is crisis in the industrial centres of mass production; but new industrial and growth spaces are emerging based on flexible production processes and high technology products. Some of these new dynamic spaces are peripheral to the established centres of Fordist accumulation. And this move towards peripheral and less industrialised areas has significant implications for the new industrial countries, and for Greece in particular, in their attempt to organise counter-crisis and re-industrialisation strategies.

### **1. Flexibility and post-Fordist corporate strategies**

By the mid-1970s major changes in corporate strategies and the organisation of production were under way as a result of the crisis in Fordist production and regulation structures (see Gottdiener and Komninos, 1989). The term "flexible production" sums up these changes and it characterises an emerging post-Taylorist industrial paradigm, which permits a more efficient use of resources (capital, labour, stocks, etc.) and greater market competitiveness.

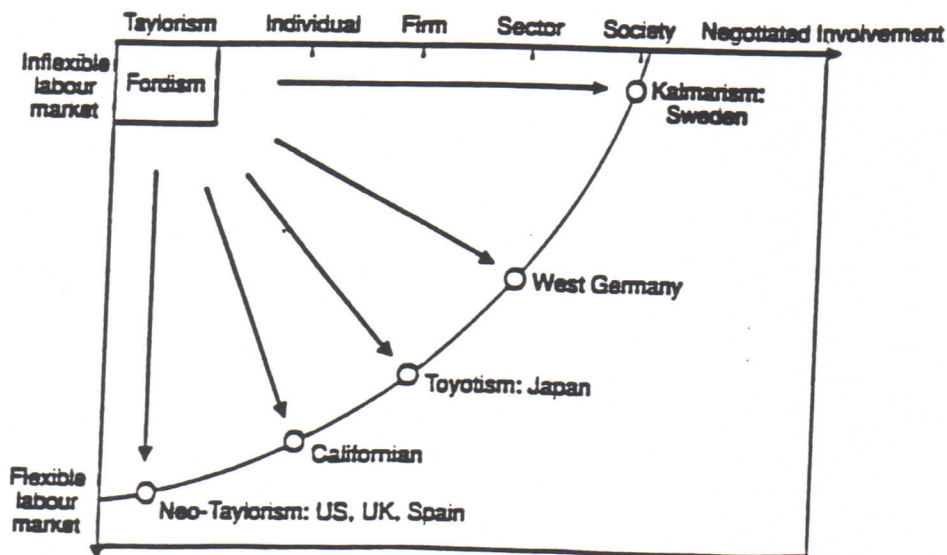
However, flexible production does not emerge by itself. It is based on the strategies introduced by the firms, the state, or the local authorities, which enhance "types of flexibility" in the production process, the inter-firm relations, and the labour market. I have tried to summarise these strategies in Table 1. On the left-hand side, I have noted the critical issues with which flexible production strategies were concerned and on the right-hand side I have listed some of the forms they assumed (see also Benko and Dunford, 1991: pp. 12-17; Komninos, 1992b: pp. 86-7).

In the same context, concerning the alternative forms of post-Fordist industrial organisation, A. Lipietz (1992) has described some dominant

models of contemporary industrial organisation. These models are centred upon two dimensions of industrial relations: (1) the rigidity/flexibility of the labour market, and (2) flexibility in factory organisation and control over the activity of workers. These models are: the *neo-Taylorist* model, the *Californian* model, the model of *Germany*, the model of *Japan*, and the *Kalmarian* model, which combine different levels of labour market and factory flexibility (see figure 1).

Table 1 shows however that flexible production strategies are developed in more dimensions (or on more levels), relating to production organisation, product innovation, inter-firm relations, and the labour market, and can take a multiplicity of forms. At these levels, different forms of organisation appear, and their combinations may lead to numerous forms of flexible production. Of these combinations some are inconsistent, others are idealistic, but many exist as real empirical forms of flexible production. More than a limited number of models, flexible production is a new way of thinking about work, products, relations, competition, and markets.

Figure 1: Models of industrial organisation and development



Source: Lipietz 1992

Beside this multiplicity of appearances, flexible production strategies are associated with important changes in the global configuration of accumulation and development. There are major impacts on R&D, production disintegration, and competition.

TABLE 1: Postfordist development strategies

Critical Issues	Forms of appearance
<i>Level of strategy: the production process</i>	
- Divorce of machinery and product	- Global automation and Computer Integrated Manufacture
- Divorce of workplaces and skills	- Partial automatization and workers' involvement
- Multifunctional tools and labour	- Artisan production
- Just-in-Time management of stocks	
<i>Level of strategy: product innovation</i>	
- Innovation versus economies of scale	- R&D intensive small firms
- Quality circles-Total Quality Control	- Deeper integration of R&D and marketing departments in multidivisional firms
- Small series, frequent change of models	- Strategic alliances of firms
	- Public R&D and university-industry interface
<i>Level of strategy: inter-firm co-operation</i>	
- Disintegration and market mediated relations	- Hierarchical network of large & small enterprises
- Disintegration and vertical-near integration	- Stable producer-supplier relations
- Changing flows between firms	- Labyrinth of small firms and relations of trust
<i>Level of strategy: the labour market</i>	
- Labour market flexibility	- Advanced fragmentation of the labour market
- Co-operative forms of industrial relations	- Upgrading of skills
	- Numerical flexibility
	- Plant versus sector unionisation

Source: Komninos 1992b



The fact that flexible production strategies are centred on technological learning and product innovation involves high levels of expenditure on R&D and producer services (fundamental research, applied research, engineering consultancy, market research, advertising, and information services). The need for these services is not just a *once and for all* need, but increases as product cycles become shorter and shorter: whenever a new product is introduced, a new niche market is created, or customised goods are produced, a new round of research and producer service activities is set in motion. To some degree, the rising needs for R&D and skilled labour may also explain the importance of economies of scope vis-a-vis economies of scale. This does not mean that scale is not important. But, as product diversification increases and product life cycles decrease, economies within a firm centre on the intensive use of skills and know-how alongside the production of different products, rather than on the size of a single production series.

With the emergence of these strategies there were significant moves towards greater vertical disintegration and growth of the small firm sector. Larger firms pursued multiple forms of structural fragmentation, including: (1) the simultaneous fragmentation of production in different products, in different localities and the extension of the subcontracting system; (2) the fragmentation of production associated with shorter product life cycles and the rapid succession of different products and models; and (3) the introduction of tendering arrangements so that, for example, R&D departments were required to compete for work with outside contractors so as to ensure that if R&D is carried out in-house it is because that is the most efficient way to do it (see Roussel et al., 1991). There was also a parallel exteriorisation of activities by larger firms. All tertiary activities without strategic importance were contracted out, and this restructuring led to a wave of new small firms. These small firms work in low risk environments, demand low entry costs, and have high rates of turnover of capital. But smaller firms proliferate also. They proved particularly effective in producing for and operating in market niches. Three types of dynamic small firms were identified (Briton, 1989): (1) enterprises which specialised in market niches in mature industries, such as the textile, clothing, and furniture industries, (2) enterprises which specialised in market niches in modern sectors, like scientific instruments, electrical equipment, industrial machinery, and tools, and (3) small technology-based enterprises with strong internal scientific teams, innovation capabilities, and in-house design and engineering.

A simultaneous consequence of flexible production strategies is the global intensification of competition, the rise of a Hobbesian world, and the new distribution of world markets and power. The Hobbesian side of American high technology, write Florida and Kenney (1990: p. 70),

"is especially evident in the highly competitive relationships between companies. In the cutthroat environment of Silicon Valley and Route 128, passing problems on to others is considered smart business rather than a violation of trust. Each firm, its venture capitalists, and stockholding employees try desperately to increase either profits and their success at the expense of both their competitors and their "collaborators", for example, their suppliers. While a few large companies like DEC, Hewlett-Packard, and Apple have tried to develop closer, long terms relations with their suppliers, most have not. In the pressure cooker environment of Silicon Valley and Route 128, there is little burden sharing between companies; contracts are broken and suppliers let go when a better deal can be had elsewhere.

Rather than a harmony of interests, the reality is one of each protecting his own, a trait clearly reflected in the recent rash of lawsuits charging companies with stealing employees or copying technology. Cypress Semiconductor, for example, currently faces at least 20 intellectual property lawsuits. Larger firms like DEC and Intel have developed in-house staffs of ten or more lawyers to deal with intellectual property litigation."

## **2. The geography of innovative growth and the selective rise of peripheral regions**

This new landscape of corporate strategies introduces highly selective forms of development and geography. More specifically two parallel geographies co-exist. On the one hand, severe crisis characterises the metropolitan centres and the large mass production cities and areas in the West Midlands, Wales, central Scotland, North-East France, Lorain, Ruhr, North Italy, etc (see Martin and Rowthorn, 1986).

On the other hand, new industrial and growth spaces are emerging, associated with high-tech industries, producer services, revitalised craft industries, and the new industrial spaces (see Dunford 1991). In Europe, Cambridge, Milton Keynes, Crawley, and Bracknell, for example, are singled out as model-cities of a new, "flexible" capitalism in England; Toulouse, Grenoble, Montpellier, Sophia-Antipolis, and the Scientific City of south Paris constitute major emerging high-technology centres in France; Turin and the communities of flexible specialisation in Lombardy, Emilia-Romana, Tuscan, Veneto, Marche, and Ambruzzi outline a new development paradigm in Italy; and Baden-Württemberg and south Bavaria have become major high-tech poles in Germany (see Dunford and Benko, 1991; Hall and Markusen, 1988; Komninos, 1992a; Scott, 1988a).

There are important differences among these new industrial spaces, differences in form and formation processes, in the trajectories which followed, in the role of the state, the markets, and the co-operative networks which have sustained their development. In my opinion, new



industrial spaces in Europe fall into three different types, each of which represents a distinctive set of geographical features and a particular local development strategy:

(1) The restructured and rising metropolitan areas, some of which have a Taylorist or a Fordist tradition, places like Turin, Milan, Cologne, Munich, Barcelona, western Crescent, or Glasgow, where the restructuring is led by larger companies, multinationals, or large national companies. As these companies modernise, they adopt flexible forms of internal organisation, introduce flexible labour markets, and transform the entire local productive system. The labour market and the social structure in these places are polarised, and competitive strategies dominate interfirm relations (see Aydalot and Keeble, 1988; Diani, 1984; Hall P. et al., 1987).

(2) The new centres of R&D and high tech industry, smaller cities with no industrial tradition like Cambridge, Sophia-Antipolis, Evry, Saint-Quentin-en-Yvelines, Montpellier. In these areas new industrial branches, R&D institutions, universities, and smaller businesses form the local productive system. The roles of the state (national or local) and other public institutions of education and R&D are crucial for creating the initial nucleus and conditions for high-tech growth (see Crang and Martin, 1989; Gilly, 1992; EPAMARNE, 1989; Komninos, 1993).

(3) The cities and communities of flexible specialisation, places like the Marshallian Industrial Districts (MID) of central Italy, Spain, and elsewhere (see Amin, 1989a and 1989b; Pyke, Becattini and Sengenberger, 1990; Sfortzi, 1989). According to G. Beccatini (1991: pp. 111), a MID

"refers to a socio-territorial entity which is characterised by the active coexistence of an open community of people and a segmented population of firms. Since the community of people and the community of firms live in the same geographical area, they crisscross one another. Production activities and daily life overlap. The community is open because the industrial nature of the district and the related problems of increasing returns imply incoming and outgoing flows of goods and people. The population of firms is segmented in the sense that different phases of the process of production are divided between the firms, each of which specialises in one or a few phases ... Although by definition the presence of big firms in the MID is not ruled out, the MID requires that large firms do not polarise the overall process of production and induce firms to go bankrupt or to be taken over."

Many of these new growth spaces are peripheral to the established centres of development. They comprise either a number of enclaves within older manufacturing regions or areas at the margins of Fordist industrialisation (see Scott, 1988: p. 197). For Alen Scott, the reason for these peripheral developments lies either in the structure of the labour market in the established centres of the Fordist industries or in the

competitive pressures within the areas of the new industrialisation, which have led to the spatial disaggregation of the internal functions of the firm and their dispersal over different national territories. He has published a very interesting article in the review *Regional Studies*, in which he discusses the stages of this peripheral innovative growth in the semiconductor industry in South-East Asia (Scott, 1987: pp. 155-156). He points out that:

“The attentive reader will have already discerned that the semiconductor industry in South-East Asia appears to have evolved through a series of successive stages of development. I have no intention here of advancing the claim that these stages constitute a universal development trajectory, through they are observable as the actually realised temporal pattern of the industry in this particular case.

At the outset, as I have indicated, US-owned assembly plants moved into selected South-East Asian countries in order to tap their rich reserves of cheap labour. After a number of years, these plants were followed by locally-owned subcontract assembly houses, at first tentatively, and then later in more vigorous rounds of growth. Subsequently, many assembly plants acquired significant test and burn in functions, and several plants in Hong Kong and Singapore even began to display a tendency to specialize in these functions. Most test and burn activity is vertically-integrated with assembly, but some independent test and burn houses also started to come into existence. This was accompanied by start-ups of many new businesses providing ancillary inputs and services (and above all precision metal products). In the very recent years, several assembly plants have integrated downstream into sub-systems assembly, and this seems to be very much an expanding trend. As all of this was going on, locally-owned diffusion facilities were being established at a few privileged sites, frequently with either direct or indirect governmental assistance. Most recently of all, circuit design functions and other research and development work have started to appear sporadically here and there in both US-owned branch plants and in independent consulting firms. Evidently, it is only a matter of time before American semiconductor corporations establish their own wafer fabrication facilities in South-East Asia.”

These processes of peripheral high-tech industrialisation have particular importance for recently industrialised areas and countries, in that they do not exclude them from new industrialisation. The static notion that high-tech industrialisation is possible in the core regions only, which was introduced by the theories of dependence and the international division of labour, has to be revised. Furthermore, it seems that peripheral areas are endowed with some comparative advantages, as they do not inherit the rigidities of previous industrial practices and relations.



### 3. Public policies and programmes for innovative growth

The political and institutional framework of regulation changed along with the new conditions of production and competition. The rise of many new industrial spaces was supported by local pro-growth coalitions and groups (see Brindley, Rydin & Stoker, 1989). I must insist, however, that a number of studies have already documented the transition towards the local as major framework for post-Fordist regulation and development (see Benko and Dunford, 1991; Cooke, 1989; Komninos, 1989; Getimis and Kafkalas, 1992; Murray, 1991). Local development planning coupled with appropriate urban and regional policies have played an important role in the formation of new industrial and growth areas in many parts of Europe.

In my opinion three parallel public strategies stand out amongst the contemporary policies which aim to boost re-industrialisation and new growth spaces.

First, is the public undertaking of part of the R&D, as also part of the transaction costs due to external R & D and technology transfer. There is a wide range of public intervention in technology transfer. This trend is particularly strong in Europe and it is reinforced by EC technology, competition, and regional policies. These interventions are based on two simple concepts: (1) the development of incentive programmes and the subsidisation of private R&D, especially at the precompetitive stage, and (2) the creation and the regional distribution of technology and consultant intermediaries (technology transfer institutes, science and technology parks) which can provide direct technology transfer and producer services to small firms (see Britton, 1989; Murray, 1991; Komninos, 1992b). Their aim is to create environments for technology transfer, to sustain the local growth of technology-based small companies, and to resolve the R&D problems that most firm face in flexible production conditions.

Second, there is public spending on urban regeneration programmes related to new tertiary activities (producer services, Japanese headquarters, multinational headquarters, etc). The main assumption behind this policy is that urban regeneration can be achieved by removing supply-side blockages to the property development industry and by the efforts of that broad collection of agencies (landowners, financiers, builders, developers, property consultants, property marketers) which organize the conversion of land and property from one form to the other. The result of these programmes is to make areas attractive to residents and external companies, to make inner city areas safe and attractive to live and work in, and to encourage enterprises to locate in particular cities and regions; thus, to sustain the position of cities and regions within the international competition for skills and investments (see Healey, 1991; Komninos, 1993).

Third, there is a tendency to stimulate local integration, local networks



TABLE 2: Trends in the development of Greece, 1976-1990

average												
	76-80	81	82	83	84	85	86	87	88	89	90	
GRDP	4,2	0,2	0,6	0,4	2,9	3,4	1,7	-0,7	4,5	3,6	-0,4	
Fixed capital investments		-7,5	-1,9	-1,3	-5,7	5,2	-6,3	-5,1	8,9	10	4,9	
Private		-3,9	-5,0	-7,1	-13,7	2,3	1,6	3,8	11,3	9,8	9,2	
Public		0,1	6,9	13,4	10,1	10,0	-18,3	-21,7	2,9	10,7	-6,9	
Unemployment	2,0	4,1	5,8	7,9	8,1	7,8	7,2	7,6	7,7	7,5	7,1	
Average salary in manufacturing	9,2	1,7	0,8	-4,9	5,2	2,5	-11,3	-7,3	11,7	5,6	1,6	
Productivity in industry	2,7	2,5	0,1	-0,1	1,8	1,0	-0,5	-0,8	-0,8	2,1	-1,1	
Labour cost in industry	4,6	-0,3	12,4	-0,7	5,6	-0,6	-9,7	-5,9	6,0	4,3	0,1	
Inflation	16,4	24,5	20,9	20,2	18,5	19,3	23	16,4	13,5	13,7	20,4	
State budget deficit as % of GDP		-12,7	-9,3	-9,8	-10,2	-13,9	-11,4	-14,6	-16,4	-19,9	-20,5	

Source: Electra Press 1987 &amp; 1992, and Epilogi, 1992

The destructive effects of the crisis are already apparent in a series of areas, like Lavrio, Euboea, Kozani, with severe de-industrialisation and job-losses. Under these circumstances, the prospect of the Single European Market and open competition in European markets after 1992 seems like a nightmare of massive de-industrialisation and further unemployment.

Under these conditions, the main challenge for the Greek economy is to go for innovation, higher productivity, quality, and internationally competitive products. There is a need for industries to reorganise the production process, to develop new products, and to advance their production and marketing know-how. There is a need also for new industries and start-ups in new branches and markets. The experience gained from the study of new industrial and growth spaces could help Greece to rise to the challenge. This experience indicates some key situations related to industrial restructuring and innovative development.

In the first place the restructuring of the country's industry and the move towards more flexible production practices should be placed on a local rather than a national footing. There are two reasons for a reversal of the usual national-sectoral approach. On the one hand, the geographical distribution of industry is very uneven. The country's two main urban-industrial centres concentrate more than 60% of the total industrial employment and establishments; furthermore the most important firms in terms of R&D and market shares are located within or near these areas. From the point of view of the Single European Market, Greece appears as an agricultural region with two main industrialised areas, around Athens and Thessaloniki. On the other hand, it is clear that contemporary industrial restructuring does not concern the level of the firm only, but also extends to the local productive system. With the restructuring of the local system, major problems of flexible production can be confronted, like excessive need for R&D and producer services, the R&D needs of small firms, the need for co-ordination because of the disintegration of production, the need for co-operation within competition. Because of these specific factors, the local level seems more appropriate for a restructuring towards more flexible, competitive, and productive industrial practices (see also Komninos, 1990 and 1992).

A second point concerns the general restructuring and innovative growth strategy. The types of new industrial spaces and re-industrialisation strategies already discussed (see section 2), indicate that industrial restructuring in Greece should be linked to restructured metropolises rather than to industrial districts or new centres of R&D and high technology. Industrial districts, in Becattini's sense, of an active co-existence of an open community of people and a segmented population of firms, is a marginal phenomenon in Greece. Existing MID more closely resemble traditional nineteenth-century MID than contemporary complexes capable of competing in international markets. The concepts of



solidarity and collectivity between small firms are very underdeveloped.

It is also improbable that peripheral centres and new localities of R&D and high-technology industry, along the lines of Toulouse, Grenoble, etc., will emerge. Public spending on R&D is very low (about 0.25% of the GDP), public procurement is not linked to modernisation objectives, and state policies are not inspired by some kind of high-technology vision. There are a number of new science and technology parks, but they are not enough for the development of new peripheral high-tech poles. Thus the modernisation of existing industries, branches, industrial centres, established labour markets, universities, and R&D centres is likely to be the dominant trajectory for creating new industrial structures and spaces.

A final point concerns public-private relations with regard to local innovative growth. It seems that partnerships rather than the neo-liberal divide between the public and private sectors, may ensure a modernisation process and new industrial practices. Public-private partnership solutions have been monitored in many parts of Europe to sustain neo-industrialisation; they are based on voluntary planning and institutions which undertake part of the R&D cost of industries, sustain producer services by revitalising inner cities and removing supply-side obstacles to urban renewal, and support local integration via local networks, alliances, and information transfer infrastructures.

Public-private partnerships may be extended to a large number of sectors, including finance, infrastructure, R&D and innovation, vocational training, and the environment. They presuppose more extensive social compromises, which in many take the form of programmes to improve a place's international links, upgrade its endogenous technological and technology transfer capability, and attract new high-tech and innovative investments.

Dealing with the problems and challenges for innovative growth in Greece on a local rather than a national level, and in terms of the modernisation of the main urban-industrial centres, and public-private partnerships, is a highly complicated strategy. There are obstacles, in the form of established interests, policy structures, and development mentalities. However, the pressures of competition and external circumstances may permit a more radical approach to the actual crisis and development challenges.

### Bibliography

- Amin, A. (1989a): «Flexible specialisation and small firms in Italy: myths and realities», *Antipode*, 21, 1, pp.13-34.
- Amin, A. (1989b): «A model of a small firm in Italy», in Goodman, E. Bamford, J. and Saynor, P. (eds): *Small Firms and Industrial Districts in Italy*. London: Routledge.
- Aydalot, P. and Keeble, D. (1988) (eds): *High Technology Industry and Innovative Environments: The European Experience*. London: Routledge.

- Becattini, G. (1991): «The industrial district as a creative milieu» in M. Dunford and G. Benko (eds): *Industrial Change & Regional Development*. London: Belhaven Press.
- Benko, G. and Dunford, M. (1991): «Structural change and the spatial organisation of the productive system: an introduction» in Dunford, M. and Benko, G. (eds): *Industrial Change & Regional Development*. London: Belhaven Press.
- Bergopoulos, K. (1986): *De-Development Today. An essay on the dynamics of stagnation in south Europe*. Athens: Exandas, (in Greek).
- Bergopoulos, K. (1991): «Greece: an account of the 80s», roneo.
- Brindley, T., Rydin, Y. and Stoker, G. (1989) (eds): *Remaking Planning. The politics of Urban Change in the Thatchers Years*. London: Unwin Hyman.
- Britton, J. (1989): «Innovation policies for small firms», *Regional Studies*, Vol. 23, No 2, pp.167-173.
- Cooke, P. (1989): *Localities: The Changing Face of Urban Britain*. London: Unwin Hyman.
- Cooke, P. and Morgan, K. (1991): «The network paradigm», Seminar on *Undefended Cities and Regions Facing the New European Order*, Lemnos, August, 27-31.
- Crang, P. and Martin, R. (1989): «Mrs Thatcher's vision of the new Britain and the other sides of the Cambridge phenomenon», *Department of Geography*, University of Cambridge.
- Diani, M. (1984): «Turin: de monopolville au tecnocity», in Merlant, P. et Kerorguen, Y. (eds): *Technopolis*. Paris: Autrement.
- Dunford, M. (1991): «Industrial trajectories and social relations in areas of new industrial growth» in Dunford, M. and Benko, G. (eds): *Industrial Change & Regional Development*. London: Belhaven Press.
- Electra Press (1987 & 1992): *The Greek Economy in Numbers*. Athens: Electra Press, (in Greek).
- EPAMARNE (1989): *Cite Descatres, Marne-La-Vallee*.
- EPILOGI (1992): *The Greek Economy. Developemnts and prospects for 1992*. Athens: Epilogi Publ., (in Greek).
- Florida, R. and Kenney, M. (1990): «Silicon valley and route 128 won't save Us», *California Management Review*, Fall, pp.68-87.
- Getimis, P. and Kafkalas, G. (1992): «Local development and forms of regulation: fragmentation and hierarchy of spatial policies in Greece», *Geoforum*.
- Giannitsis, T. (1985): *Greek industry. Development and crisis*. Athens: Gutenberg, (in Greek).
- Gilly, J. P. (1992): «Groups and new productive spaces: the case of Matra at Toulouse» in Dunford, M. and Kafkalas, G. (eds): *Spatial Implications of Competition and Regulation in the New Europe*. London: Belhaven.
- Glasmeier, A. (1987): «Factors governing the development of high tech industry agglomerations: a tale of three cities» *Regional Studies*, Vol. 22, No 4, pp.287-301.
- Gottdiener, M. and Komninos, N. (eds) (1989): *Capitalist Development and Crisis Theory: Accumulation, Regulation and Spatial Restructuring*. London: Macmillan, New York: St Martin's Press.
- Hall, P. et al. (1987): *Western Sunrise: The Genesis and growth in Britain's Major High Tech Corridor*. Hemel Hempstead, Allen & Unwin.



- Hall, P. and Markusen, A. (1988): *Silicon Landscapes*. Boston: Unwin Hyman.
- Healey, P. (1991): «Urban regeneration and the development industry», *Regional Studies*, Vol. 25.2, pp.97-110.
- Holland, S. (1990): «Europe of the regions: The scope for networks», Symposium *Networks: On the Socioeconomics of Interfirm Cooperation*, Berlin: June, pp.11-13.
- Ioakimoglou, I. and Milios, I. (1989): «The crisis of Greek capitalism at the end of the '80s», *Thesis* 28, pp.29-53, (in Greek).
- Komninos, N. (1989): «From the national to the local: the janus face of crisis» in Gottdiener, M. and Komninos, N. (eds): *Capitalist Development and Crisis Theory: accumulation, regulation and spatial restructuring*. London: Mcmillan, New-York, St Martin's Press.
- Komninos, N. (1990): «Local flexibility and the crisis of industry in Greece», *Topos Review of urban and regional studies*, Vol. 1, pp.80-92, (in Greek).
- Komninos, N. (1992a): «Les nouveaux espaces de croissance: La naissance des centres du developpement post-Fordiste», *Espaces et Societes*, No 66-67, pp.217-232.
- Komninos, N. (1992b): «Science parks in Europe: flexible production, disintegration and technology transfer», in Dunford, M. and Kafkalas, G. (eds): *Spatial Implications of Competition and Regulation in the New Europe*. London: Belhaven.
- Komninos, N. (1993): *Technopoles and development strategies in Europe*. Athens: Gutenberg, (in Greek).
- Rylmon, P. (1992): *Labour Wages and Capital Accumulation in post-war Greece*. Athens: Exandas, (in Greek).
- Lipietz, A. (1992): «The regulation approach and capitalist crisis: an alternative compromise for the 1990's», in Dunford, M. and Kafkalas, G. (eds): *Spatial Implications of Competition and Regulation in the New Europe*. London: Belhaven.
- Murray, R. (1991): *Local Space: Europe and the new regionalism*. Manchester: The Centre for Local Economic Strategies.
- Martin, R. and Rowthorn, B. (1986): *The Geography of De-industrialisation*. London: Macmillan.
- Pyke, F., Becattini, G. and Sengenberger, N. (1990): *Industrial Districts and Inter-firm Cooperation in Italy*. Geneva: International Institute for Labour Studies.
- Roussel, P., Saad, K. and Erickson, T. (1991): *Third Generation R&D*. Harvard Business School Press.
- Saxenian, A. (1990): «Regional networks and the resurgence of Silicon Valley», *California Management Review*, Fall, pp.89-111.
- Scott, A. (1987): «The semiconductor industry in south-east Asia: Organization, location and the international division of labour», *Regional Studies*, Vol. 21, No 2, pp.143-160.
- Scott, A. (1988a): «Flexible production systems and regional development», *International Journal of Urban and Regional Research*, Vol.12, No 2.
- Sfortzi, F. (1989): «The geography of industrial districts in Italy» in Goodman, E. (ed): *Small Firms and Industrial Districts in Italy*. London: Routledge.

*TOPOS Special Series*

**URBAN AND REGIONAL DEVELOPMENT  
IN THE NEW EUROPE**

**Policies and Institutions for the Development of Cities and  
Regions in the Single European Market**

edited by  
**Panayotis Getimis and Grigoris Kafkalas**



• *Urban and Regional Development and Policy*  
• TOPOS 1993 • Athens