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CITIES AND REGIONS IN A GLOBAL ECONOMY

Peter Hall

This paper will argue that four forces are shaping the contemporary economic world:

1. *Globalization*: cities and their regions increasingly compete with each other in a worldwide international division of labor;
2. *Informationalization*: there is a clear shift, especially in advanced economies, toward an informational mode of production in which information, not raw materials, becomes the basic input;
3. *Constant Adaptation*: there is a constant need, as a result, to re-adapt the economic structure of cities and regions to changing circumstances;
4. *Self-Determination*: because of this last fact, cities and regions can in some large measure create their own economic futures, because the old locational constraints have largely disappeared and the new ones are malleable.

I will now go on to treat each of these trends, and their implications for urban and regional development, in turn. Throughout the paper, I refer to "cities and their regions," or, simply, "city regions." By this, I mean a concept described by the Metropolitan Statistical Areas of the United States Census, or their approximate equivalents in other countries; that is, a concept of an urban labor market and an urban sphere of influence (Hall and Hay, 1980; Cheshire and Hay, 1989). I am assuming that in an urbanized world, these form the relevant unit of local economic analysis.

Globalization

During the last quarter-century, the world has become interdependent as never before. Of course, a very limited world trading economy existed even in the Middle Ages, though it could deal only with very light and valuable articles which could be transported over long distances even by the primitive transportation technologies of that day. And, from the mid-nineteenth century onward, two great technological innovations, the railroad and the steamship, allowed this international system of exchange to encompass almost the entire range of tradeable goods. By 1900, there was in fact an international division of labor which depended partly on differences in resource endowment, partly on stage of economic development. The continents newly settled by

Europeans—North and South America, Australasia, Africa—sent foods and raw materials to Europe and received manufactured goods in return; a similar division occurred within North America between the newly settled west and the older-settled east. And a country like Japan, newly opened up to the western world and already embarked upon its historic mission to catch up with it, was just beginning to export simpler manufactured goods. We even find early examples of technical cooperation (or colonization, if you prefer the title); in 1923 Siemens collaborated with the Furukawa company to set up a joint venture, the Fuji Corporation; the day after, the great Tokyo earthquake struck, causing a temporary delay, from which I am glad to report that Fuji recovered. That is just one example: in the 1920s and 1930s, we already find major American corporations like Ford and General Motors and General Electric setting up major branch operations in Europe.

The point is that this process accelerated enormously after World War II, and especially after 1960. There are good reasons for that. The first was, quite simply, the increasing technical sophistication and maturity of an increasing number of countries. Already, by 1939, some key western European countries—Britain, France, Germany, Sweden—and the United States were roughly competitive in a technical sense; after World War II others added themselves to the list, while Japan came rapidly forward to join the ranks of the leaders.

But this factor would not in itself have been decisive; indeed, in the autarchic world of the 1930s, it was not important at all. In Germany, nationalistic policies dictated that the country borrow the methods of Henry Ford to build a People's Car which would compete directly with the existing German Ford plant. It was not anticipated that the People's Car would become a major export, as it did after World War II. Industrializing countries, and even industrialized countries in pursuit of national leadership, sought to build up their own industries as import replacement devices, hoping in this way to develop on a self-sufficient basis behind high tariff walls.

Perhaps that policy would never have proved successful. One country, East Germany, continued to try to do it after World War II, and the result was its own version of the People's Car: the Trabant, which never advanced technologically in 35 years. Indeed, one can argue convincingly that it was this futile attempt at autarchy which led to technical stagnation in communist regimes, thus making them increasingly unable to compete with the capitalist west. The key to successful development policy, so well exemplified by Japan and now by the Asian "Four Tigers," came in two stages. First, it was to pursue a deliberate policy of catching up by imitating the best available technology from other countries and then systematically improving upon it (Tatsuno, 1986, 1988). Then, at a critical point—which Japan reached about 1975—the key industries could become global leaders in their own right, progressively developing their independent research and development policies; at this point, key competing firms within the country in effect imitated and improved on

each other's products, as so clearly seen in the history of Japanese automobiles or cameras during the 1980s.

Associated with this, however, was a general liberalization of world trade. To varying degrees, the world market was thrown open to competition. We have to qualify this statement, because clearly it did not apply equally in all cases. Countries embarking on rapid catch-up, such as Japan in the 1950s and 1960s or Korea in the 1970s and 1980s, employed various regulatory devices to protect their infant industries and in effect guarantee them an expanding home market as a platform to develop economies of scale. Regional free trade groups, spearheaded by the European Community in the 1960s and followed by North America in the 1980s, have sought to create critical-mass internal markets while retaining tariff and other barriers against the outside world. In general, however, no modern capitalist country employs the same autarchic policies as did many countries during the 1930s, or did some socialist countries in the 1960s and 1970s.

We should notice one other feature of these new regional groupings: to a considerable and increasing degree, they represent unions of industrialized countries. The biggest increases in trade in the last quarter-century have been between the advanced industrialized countries; in other words, they have involved increasing specialization and competition as between the industries of those countries. To some extent, this means competition between the same industries: in Europe, Germany begins to buy French cars while France begins to buy German ones. But to some degree, it also represents increasing specialization as between industrialized countries: Japan exports automobiles but imports Scotch whisky and French designer clothes.

We must not exaggerate these trends; there are still powerful barriers of culture and tradition, reinforced by well-established national industries with their own organization of servicing and public relations, which provide national protection against import penetration. It is still significant that, despite what I just said, and despite more than 30 years of the European common market, most of the cars on French roads are still French cars and most of those on German roads are German ones. But the trend is unmistakable.

One reason for this is technical cooperation and globalization of production. National automobile producers are reaching agreements to develop common components and eventually, without doubt, common cars. Examples include the recent agreement between Renault and Volvo, which recalls an earlier agreement between Volvo and the Dutch DAF company; and the agreements between Japanese and American, and Japanese and British, auto producers. In order to meet requirements about product content imposed either by nations or by groupings like the EC, producers increasingly globalize their operations through offshore plants. One interesting result is

that it becomes virtually impossible to say where a product like an automobile actually originates—a question that vexes regulators, as illustrated by the recent arguments in the EC about the status of the cars coming from the new Japanese factories in Great Britain.

No one should doubt that these trends are accelerating in force, especially with the rapid movement during the 1990s to major global trading communities in Europe, North America, and in all probability Eastern Asia. The question posed here is: what are the implications for urban and regional development?

One answer, favored by many expert analysts, is that the new international division of labor is accompanied by a new logic of location. The old division of labor, and the old logic of location, was in terms of product. It arose from the two circumstances which I earlier mentioned: unequal distribution of physical resources, and unequal levels of development. In the middle of the 19th century Britain was the workshop of the world, both because it had the necessary coal and iron, and because it happened to be first to industrialize. Similarly, Lancashire produced much of the world's cotton, both because it had the right climate and the access to steam power and the port facilities to import cotton, and also, again, because the crucial innovations had been made there. The same went for metal-working and engineering in Birmingham and shipbuilding in Glasgow. This logic has now collapsed, for two reasons. The first is globalization; the second is what might be called, for lack of a better word, informationalization, or the movement from a goods-producing to an information-producing economy. The result is a new division of labor: not by product, but by process. Before we look at this consequence, let us look at the other proximate causes: the shift to information production.

Informationalization

The fact is that the old-fashioned factors of location, like coal and iron and water, are no longer very significant in a world where the typical industrial product embodies knowledge rather than materials, and where an increasing part of production is non-material. This, Manuel Castells has recently argued, is the fundamental economic shift of the present era, as momentous in its way as the shift from an agrarian economy to a manufacturing economy in the 18th and 19th centuries (Castells 1989). But in fact it is a manifestation of a long-continued trend from manufacturing to services embodying information (Clark 1940, Hall 1989). Already, in the advanced industrial countries, an actual majority of the workforce is employed not in manufacturing goods, but in providing services. And of these, the larger part is employed in generating, exchanging, or working on information. It is difficult to estimate accurately the size of the informational sector of the

economy, but in a study based on data from the mid-1980s, I estimated that it might make up about 40 per cent of the entire workforce in the United States and Britain, and perhaps 30 per cent in Germany (Hall 1987a).

Services have been of significant and growing importance throughout this century, as Clark already pointed out in 1940. But, during the last twenty years, a new trend is observable: services become increasingly detached from production (Sassen, 1991). Economists talk of producer services, and some argue that these still depend in some fundamental sense on production (Gershuny and Miles, 1983; Cohen and Zysman, 1987); but it has become clear that an increasing part of financial services employment and activity, in particular, consists in the handling of financial instruments without any direct relationship to the productive process. This is important, because it results in a locational disarticulation between the two systems:

The spatial dispersion of production, including its internationalization, has contributed to the growth of centralized service nodes for the management and regulation of the new space economy . . . To a considerable extent, the weight of economic activity over the last fifteen years has shifted from production places such as Detroit and Manchester, to centers of finance and highly specialized services (Sassen, 1991).

The new logic of location is indeed governed by access to information. And that comes in two ways: first by direct face-to-face communication, and secondly by electronic transfer. The first encourages agglomeration in major cities and their surrounding regions, for two fairly obvious reasons. First, they have historically developed strong concentrations of specialized information-generating and information-exchanging activities: government, the universities, the financial sector, the media. Second, they traditionally serve as the key nodes for national and international transportation: in the 19th century they were the railroad junctions and port cities, and in the 20th centuries they equally have the major international airports and the stations on the new high-speed rail links. Nothing is clearer than the massive inertia in the international urban system, which gives the leading global cities a permanent advantage in the race to attract the key informational functions; in the 1920s they were first to develop airports, from the mid-1960s they were the first nodes for the high-speed trains, and that guarantees their continued primacy (Hall, 1991b).

When the Japanese government embarked on its Technopolis program in the 1980s, a critical feature in site selection was access to airports. The logic was simple: high-technology goods, above all software, embody knowledge in the heads of people, who may need to carry that knowledge around with them; and the products themselves would quite likely be shipped by air.

That second assumption, it appears from a recent research report, appears to have been mistaken (Yamasaki, 1990); but it was logical to try to counteract Tokyo's embodied air traffic advantages.

Metropolitan concentration should, however, be counterweighed by the freedom granted by telecommunications. As the true cost of telecommunication has dropped drastically over the past half-century, activities depending on information exchange should have increasingly been free to locate away from the old face-to-face exchange locations. But evidently they have not, as the concentration in Tokyo so well illustrates. The reasons are interesting. First, though increasingly inexpensive, telecommunication is never entirely costless. National telecommunications companies have seldom if ever emulated the interesting revolution in postal communication, carried through first by Britain in 1840 and then rapidly imitated worldwide: the uniform national rate regardless of distance. The result is that there is a real penalty in locating away from the major centers of information generation and exchange. An example: Technopolis locations in Japan proudly demonstrate their access to national databases located in Tsukuba; but access is charged at standard long-distance telephone rates, so distant locations in, for example, Kyushu are at a disadvantage.

Secondly, though, it appears that the major cities create a built-in demand for new and improved telecommunications services, which leads to their being provided first in those places. It is true that in advanced industrial economies these soon spread to other locations. However, there is invariably yet another improvement, and here the major metropolitan cities are usually a step ahead of the rest, if only because their take-up of new information technologies is so much speedier. (A not entirely trivial example: many telecommunications systems, including most in Europe, are still in the course of converting from analog to digital; the metropolitan cities tend to get the new service first, so that they alone have access to specialized services like voice mail or home banking.) The work by John Goddard and his colleagues on regional variations in telecommunications service and use within the European Community makes it clear that even in one of the most advanced industrial regions of the world there are still quite extraordinary center-periphery differences, even in the take-up of what the Americans call plain old telephone service (Goddard and Gillespie, 1987, 1988). And Michael Batty's analysis of regional variations in the ownership and use of personal computers in Great Britain provides further confirmation: predictably, of course, the diffusion in and around London is far more rapid than in any other part of the country (Batty 1988).

The paradoxical conclusion is that in the informational economy, the largest global cities retain their primacy. And this relates to the consequence of globalization plus informationalization: the further trend in the new international division of labor, which is that division of labor by *product* is replaced by division of labor by *process*. In this new division, the global cities act as command and control locations. Here headquarters of major production companies are located; here also are

headquarters of global banking and finance corporations; in most countries, these cities are also the seats of the major world-power governments (King, 1989; Sassen, 1991). These centers control production locations which may be dispersed nationally and even worldwide.

However, increasingly production requires ancillary service functions—the business or producer services—which are devolved to specialist contractors in the form of accountancy services, advertising and public relations services, legal services, and the like. These services relate not to the production locations themselves, but to the controlling headquarters locations; analysis of business services in Britain, for instance, shows that they are overwhelmingly concentrated in and around London (Hall, 1991a; Sassen, 1991). They therefore add yet another element to the multiple ties of agglomeration which keep these complexes of activity centralized not merely in the major metropolitan regions but in their very hearts: the City, Whitehall, and West End in London, Downtown and Midtown Manhattan in New York, Kasumigaseki and Marunouchi and Temachi in Tokyo. And within these cores, we even of course find specialist sub-agglomerations of functions such as finance, government, and business services. These are the most eloquent testimony of all to the continuing importance of agglomeration in the informational economy.

There are of course exceptions. In virtually all the global metropolitan regions, research and development (R&D) tends to be decentralized to high-amenity areas near the rural fringe, such as Berkshire in England, parts of Connecticut and New Jersey around New York, and southern Kanagawa prefecture in Japan. They tend to locate close to high-technology production locations in the same general zones, of which California's Silicon Valley is the classic model.

Silicon Valley, like Route 128 around Boston in Massachusetts, has a somewhat complex relationship to the leading city in its region; the triggering impulse in each case was not decentralization of activity from the city but the presence of a major research university which owed its general location to the concentration of wealth and culture in that neighboring city. MIT was located in the mid-19th century first in Boston and then in Cambridge, across the Charles River, because of a feeling among state and civic leaders that Massachusetts needed a center of top-class technical research and education (Reich, 1985; Wildes and Lindgren, 1985; Wise, 1985); Stanford was founded by the California railroad magnate Leland Stanford on the basis of a land grant next to one of his own lines (Saxenian, 1981, 1985a, 1985b, 1985c). And in both cases, interestingly, the city concerned was a major provincial or regional metropolis, not a center of global power.

We can almost say that these were very special cases. London, New York, and Tokyo generated no such university-based spinoff. On the other hand, all three had strong concentrations of technologically advanced industry which progressively migrated into new lines of production—in

particular, from electrical equipment into electronics—and migrated outwards in search of space, generally establishing R&D as the vanguard of outward movement. The migration of Bell Labs from New York City to Murray Hill, New Jersey, in 1941 was a model of this process.

Similarly, large electronic processing offices using fairly standardized information, such as insurance or credit card operations, tend to be dispersed to major suburban nodes with easy access from the center, lower office rents, and supplies of suitable clerical labor: Reading west of London, Stamford in Connecticut, or Omiya and Kawasaki near Tokyo. We find that where central rents are highest, this process may extend over a wide area: around London, back offices have now diffused very widely across South East England and even outside that region altogether; in the United States a relatively remote city like Omaha (Nebraska) has managed to create a specialized service niche, telemarketing, around top-quality telecommunications networks and a supply of the right kind of labor (Brooks, 1991; Feder, 1991); similarly, Salt Lake City has attracted American Express's travelers' check operation, on the basis that its many ex-Mormon missionaries are both highly motivated and well skilled in languages (Sellers, 1990; Donnelly, 1991; Johnson, 1991). These anecdotal instances are perhaps harbingers of a much more general future trend, which will disperse such functions, nationally and even globally, to relatively remote places enjoying low rents and either low wages or a high-quality workforce; but the process at present seems constrained by the need to maintain some short-distance face-to-face communication between main office and back office. Indeed, the notion of telecommuting—eagerly discussed as a way of decentralizing a wide range of work from the office to the home—is still very imperfectly developed, and there appears to be scepticism as to whether it will ever be widely adopted (Goulias and Pendyala, 1990; Huws et al., 1990; JALA Associates, 1990; Korte et al., 1988; Mokhtarian, 1990).

Similarly, there is some very limited and almost anecdotal evidence from the United States that some cities may be losing their attraction even for top-level headquarters functions. There, indeed, the trend is not new. General Electric has successfully operated out of Schenectady in upstate New York ever since Thomas Edison originally located it there to escape New York's labor unions (Reich, 1985; Wise, 1985; Hall and Preston, 1988); IBM has long headquartered itself in Endicott, another relatively remote location in upstate New York where one of its constituent companies was originally set up; in California, some major banks and utility companies (Chevron; Pacific Bell; Bank of America) are decentralizing from downtown San Francisco to suburban locations in the wider San Francisco Bay Area.

But these exceptional cases hardly constitute a general trend so far; indeed, some of them almost fall into the category of historical accident. The analysis by Noyelle and Stanback, still the definitive study of the American urban hierarchy, showed fairly conclusively that the cities they

categorized as functional nodal—industrial headquarters cities, like Detroit—had performed relatively poorly during the 1970s; indeed, almost as badly as pure non-headquarters industrial cities (Noyelle and Stanback, 1984; Stanback, 1985). That decade, it must be remembered, was the period of the great deindustrialization in advanced industrial economies; the 1980s may soon tell a different story. But this latter decade was also marked by a record number of takeovers of industrial companies by larger corporations, often financially based. So, if anything, the likelihood is that control will have transferred itself from the old industrial cities to the financial control and command centers.

We can conclude that, overall, the global metropolitan centers retain their primacy in the new international division of labor, and may even have recently enhanced it. This, however, does not necessarily imply that they are growing in employment. On the contrary, they may actually lose jobs, as they shed non-essential, non-controlling functions to other cities and regions. Nearly all the global cities, just as much as the pure industrial centers, have experienced major restructuring of their manufacturing and goods-handling functions during the 1970s and 1980s. Older, less efficient factories have been closed down and their production transferred to suburban and greenfield locations, sometimes as a result of corporate restructuring. Up-river dock and warehouse facilities have been closed as containerization brought a shift to estuary sites (Hoyle, 1988). Rail freight yards have been rendered derelict, similarly, as consolidation functions moved to more spacious facilities at the periphery.

After a time interval, much of the resulting dereliction has been absorbed through redevelopment for the new informational functions, as shown spectacularly in the remodelling of the London Docklands, and less remarkably but still significantly in a score of other cities. But the result has very often been a net loss in employment in comparison with the peak of the late 1960s or early 1970s. In the fullness of time, this may be rectified; but, if anything, since the peak of the late 1980s the general tendency in the global centers has been for informational employment to contract.

Indeed, the recession of the early 1990s is now felt with especial severity in these cities, with a huge overhang of unlet and unlettable commercial office space. Right across the major centers of Europe, North America, and Australia, with only occasional special exceptions (Berlin; Madrid), vacancy rates of 20 or even 30 per cent are commonplace in the summer of 1991. The general expectation of the development industry seems to be that this surplus will take between five and seven years to clear.

Viewed in the larger historical context, of course, this is not particularly significant. Nevertheless, the general expectation may well be that these cities experience what Paul Cheshire and Dennis Hay reported for some European cities: a situation of "healthy decline," wherein

declining employment is accompanied by general prosperity as measured by per capita income levels (Cheshire and Hay, 1989).

Constant Adaptation

This last conclusion is surely very significant. We need to measure local economic success or failure by other than pure employment measures. Of course, in the last resort an economy that does not generate new jobs is a failure. But a successful economy could be one which is losing large numbers of low-paying, low-skill jobs and generating slightly smaller numbers of well-paying high-skill ones. We can consider this trend by analyzing different categories of city. The task in each case will be to establish the relevant economic niche. To some extent this will be determined by the position in the national and global urban hierarchy; but to some extent, equally, it will be influenced by the capacity of the region to establish a special niche.

The Developed World

For the developed world, we can distinguish several type cases of city region. The taxonomy here is somewhat difficult to develop, because it exists on more than one dimension, and these are not consistent. First, some of these city regions belong in a national and indeed an international hierarchy, and it is particularly important for our purposes to understand the relationship between these two; but some, identified by Noyelle and Stanback (1984) as specialized service cities, essentially do not. Secondly, it is equally important to understand the regional relationships between these individual city regions. Some are fortunate in being part of regional growth belts ("sunbelts") which benefit from broader growth dynamics; these include the special and important case of growth belts immediately peripheral to mega-city regions, which are the major beneficiaries of outward deconcentration processes. Some are equally unfortunate in being located in regions that are peripheral either to national or international economic systems, and suffer from what Cheshire and Hay (1989) have called the "peripheralization of the periphery": improvements in communication among more favorably located centers have the effect of making them appear even less accessible, relatively, than before.

1. *Global Cities*. Traditionally, many global cities and their regions have had polarized economic structures, with many high-pay and low-pay jobs and a relatively smaller (and declining) pool of middle-pay employment. The feature has been remarked upon in cities like New York and London during the 1970s and 1980s, but is in reality nothing new (Hall, 1988; Mollenkopf and Castells, 1991; Sassen, 1991). The middle-income

jobs are often precisely those most prone to local decentralization, so that they are in effect exported outside the (relatively arbitrary) boundaries of the metropolitan area. The high- and low-income jobs remain, in part because they have a kind of symbiotic relationship: a specialized producer-service economy will create major multiplier effects in the consumer-service sector. No one should worry much about this, so long as most people find jobs appropriate to their educational and skill level, and also so long as the low-income jobs are performed mainly by new entrants whose children have the chance to move up via the educational system to the high-income sector. New York, and latterly Los Angeles, appear to have been classic examples of such successful cities.

2. *City Regions in Global Fringe or Corridor Zones.* In advanced industrial countries, a significant proportion of all city regions are in fringe belts, or corridors, adjacent to major global city regions. Examples are the ring of cities in South East England around London, and their extension up the main urbanized corridor ("Megalopolis England") to the Midlands and North of England; its extension, the so-called "Dorsal" (colloquially, the "Blue Banana") in Western Europe, from the English Midlands via the Rhine Valley to Milan (Brunet, 1989); the Eastern Seaboard Megalopolis ("Boswash") in the United States; and the Tokaido Megalopolis in Japan (Hall et al., 1973). Many city regions in these zones, especially smaller ones in high-amenity semi-rural sections, are benefitting from local outward deconcentration out of the core cities (Reading, Oxford; Nijmegen, Marburg, Heidelberg; Bridgeport, Northeastern New Jersey; Kyoto, Nara); some of the larger old industrial cities, however, may be suffering problems of conversion from the industrial to the informational economy (Birmingham, Manchester; Essen, Dortmund, Turin; Allentown, Camden, Worcester; Kawasaki, Nagoya); some may be experiencing both processes, as old industrial plants close down but decentralizing offices move in.

To some degree, these places can enhance their position by improvements in communications. Cities with good airport connections can build these up from second-rank to first-rank status, competing with major national hub airports (Manchester; Dusseldorf; Boston; Osaka). High-speed train connections can bring cities within a critical range of global centers, making them attractive for decentralized office functions (Reading; Lyon; Omiya). Advanced telecommunications can serve as the basis for "intelligent city" developments (Massy-Palaiseau; Kawasaki). They can also develop and market specialized niche functions, like Birmingham's National Exhibition Centre and Conference Centre, Dortmund's Technology Park, Boston's Quincy Market and Waterfront, or the Osaka-Kobe waterfront developments.

3. *Remote Regional Cities.* Cities at the periphery of their national (or continental) space-economies, especially if they are dominated by older declining industries, face a special problem (Belfast, Glasgow; Clermont-Ferrand, Saarbrücken, Cadiz; Buffalo, Duluth; Sapporo, Nagaoka). Their economies were invariably based on industrial resource concentrations which have now been worked out or superseded; their labor force is often highly organized and resistant to change; they are dominated by a few large industrial firms, and lack a tradition of small-firm entrepreneurship; they are too distant to benefit from the "deconcentration wave"; and they tend to surrender their remaining regional service functions to top-level core cities (Cheshire and Hay 1989). They may seek to exploit their accumulated advantages in terms of labor skills and high educational levels, as the Glasgow region did in attracting inward electronics investment after World War II or many remote Japanese cities did through the Technopolis program during the 1980s. Or they may break out in totally new directions, as Glasgow did in establishing itself as a European cultural city. Sometimes, remoteness can be a positive virtue when it encourages the development of regional office structures, as again evidenced by Glasgow; here, the preservation of a separate Scottish banking system, independent of the English one, has been a significant factor.
4. *National and Regional Capital Cities.* Overlapping with these two last categories is the case of the medium-sized city region (typical population range: 500,000-2.5 million) which serves as administrative and higher-level service center either for a prosperous rural region within a larger national unit, or as capital city of a small semi-industrialized nation state. Europe contains many examples in both these categories (Bristol, Norwich; Bordeaux, Toulouse; Hannover, Stuttgart; Bologna, Padua; Amsterdam, Brussels, Luxembourg, Copenhagen, Oslo, Stockholm, Dublin). The United States of course contains only regional examples (Atlanta, Dallas-Fort Worth, Minneapolis-St Paul, Denver, Seattle, Portland), as does Japan (Sendai, Kumamoto). These places have often been outstandingly successful because they have enhanced their roles as high-level service centers for their spheres of influence, attracting the most dynamic information-service industries both in the public and the private sectors (local government, higher education, health care; banking, insurance, accountancy, legal services) (Stanback, 1985; Cheshire and Hay, 1989). In some ways they are the mirror images of the last category, and indeed the distinction between them is subtle; in both America and Japan, some successful regional centers tend to be highly peripheral to their national space-economies but have benefitted thereby. The key seems to be the lack of a residual declining heavy-industrial base, and a generally positive image based on a well-preserved historical heritage;

consider as examples the castles in Norwich or Kumamoto, the old quays in Bristol or Bordeaux, or old palaces and parks in Hannover, Stuttgart, Copenhagen or Oslo.

5. *County Towns*. The same general rule applies to many examples lower down the urban hierarchy, which serve as administrative capitals for their immediate local regions (counties, departements, Kreise, shi). Their economies have grown for much the same reasons, and they too generally project a positive image through historic preservation. As earlier mentioned, many city regions in this category have benefited from a regional effect: these are parts of sunbelts which have received outward flows of people and jobs from neighboring mega-city regions (South East England, the lower Rhine, New Jersey, the I-680 corridor in California). Others are located in declining older industrial regions, but have been successful in preserving and enhancing their reputations by removing the scars of industrialization; Durham and Preston Lille (Belgium), Essen (Germany) and Lowell (Massachusetts) provide examples.
6. *Specialized Service Centers*. This category again overlaps with the last. It consists of city regions, generally small to medium-sized, that have prospered through specialization on one or two service functions that happen to have shown exceptionally rapid growth in the transition to the informational economy, such as public administration (local government), educational services, health services, or defense contracting. Examples abound: they include Reading, Exeter, and Norwich; Rennes and Aix-en-Provence; Marburg and Heidelberg; Lund and Uppsala; Padua and Bologna; Columbus, Austin, Salt Lake City, and Sacramento; Kyoto and Nara. These places tend to have grown according to a logic that has little to do either with urban hierarchy or with regional location; but if they enjoy advantages in that regard also, then they tend to exhibit exceptional dynamism, to the degree indeed that they may exhibit symptoms of overgrowth (Reading, Heidelberg, Kyoto).

The Developing World

This analysis seems to work, generally, for the advanced industrial countries which are most affected by the twin processes of deindustrialization and urban deconcentration; though we should stress, following Cheshire and Hay, that the two processes are not the same in their origins or their manifestations. It clearly does not apply as it stands to the urban hierarchies of rapidly-developing (so-called "Newly Industrializing" or "Middle-Income") countries, which are generally affected by very different, even opposite, processes.

Notably, as all empirical examination concludes, these countries are characterized by extreme concentration of population and economic activity in one leading city (or, more rarely, two). In the case of city states such as Singapore and Hong Kong this is self-evident; and almost as obviously so in smaller nation-states like Taiwan or the Republic of Korea, where (in 1990) an estimated 26 per cent of the population is found in the Seoul agglomeration. But, perhaps more surprisingly, almost equal concentration is evident in large continental-size countries: 22 per cent of the population of Mexico is found in the Mexico City agglomeration; and some 20 per cent of the population of Brazil in the Sao Paulo and Rio de Janeiro agglomerations (United Nations, 1989). The reasons have been intensively discussed (Hall, 1987b); they include the following:

1. The modern sector of the economy is highly concentrated here, partly because of superior infrastructure of transportation and communications, partly because of better educated and better trained labor.
2. In some of these countries the state plays a considerable role in development, and it may be seen as advantageous to be located close to state agencies. In the great majority of cases, save where the capital has been relocated for policy reasons, the largest commercial city is also the seat of government.
3. These cities provide the obvious location for national branches of multinational corporations, and also for national corporations with export connections to the outside world.
4. Economies of agglomeration are greater than diseconomies (negative externalities) such as traffic congestion, housing costs, and pollution; or, at least, are perceived to be so, perhaps because the latter are not fully appreciated and may fully manifest themselves only in the future (for instance, in the form of health problems and lowered life expectancy).
5. There may be a social cachet in living in the capital city, with its wider array of cultural, educational, and entertainment possibilities and its range of contacts with ruling elites (Friedmann, 1972, 1973).

All these and other features are evidence of an uneven pattern of development, which is characteristic of this group of countries. Indeed, no country can be said to enjoy completely even development; but typically, as measured by input measures like miles of paved roads or numbers of telephones, or by output measures like regional per capita incomes, such differences weaken in later stages of development.

One important characteristic, much stressed by writers on dependency theory, is that the leading cities are the places through which control is exercised within the global system of division of labor by process (Chilcote, 1977; Butterworth and Chance, 1981; Cohen, 1981). Both indigenous firms, and branches of multinationals, will locate their headquarters here, whether or not production locations exist elsewhere. (In many cases, manufacturing may also take place within the global city region; though in others, it may be decentralized to lower-level cities.) This reflects several of the factors listed above, particularly access to international and national transportation and communications links, nearness to government, and the presence of elites. Further, in several (though not all) of these countries, government tends to be highly centralized. The leading city is thus simultaneously the place through which power is exercised from outside, in a neo-colonial economic relationship, and also the place from which national power is exercised outwards and downwards. And this is underlined, because several of these countries are classic cases of the model first set by Japan from 1925 onwards, the so-called "Developmental State" (Johnson, 1982), wherein the state itself plays a close and continuing role in development.

In other words, major cities in the developing world follow the same logic as those in the first world. We have seen that recent research on those developed cities has highlighted the extraordinarily close and tight networks of communication which lock high-level informational activities into those cities. It would be surprising if these ties were not equally strong in the major cities of the developing world, but so far the subject has been inadequately researched. What we do know, from individual studies, is that these cities show an equal degree of concentration of activity in these same sectors, such as finance and producer services: in 1980 Mexico City accounted for 30.8 per cent of national manufacturing production but no less than 65.7 per cent of that in services; in 1975, it had 45 per cent of higher managerial and 40 per cent of professional and technical expertise in the entire country (Hall, 1984; Ward, 1990).

It is all too easy, as observers have suggested, for this process to become circular and cumulative. The increasing globalization of the economy is likely to foster it. Therefore, although on the widest geographical and historical analysis there is evidence for a "reversal of polarity," as Richardson (1973, 1980, 1981) terms it, it may be long postponed. More likely is a process of local deconcentration of certain functions, particularly manufacturing, to the periphery of the major city region, in search of lower costs of transportation and access to labor—a process observable in advanced metropolitan areas like London since the 1920s if not earlier (Hall, 1989), and now logically being followed also in the great metropolitan centers of the developing world. In Korea, for instance, the electronics industry is highly concentrated in the Seoul region, but has locally deconcentrated into the neighboring Kyonggi region; domestic plants are even more concentrated there

than foreign-owned ones (Suarez-Villa and Han, 1991). Thus the entire urban area becomes progressively more polycentric in form, as is observable in Mexico City, Sao Paulo and Hong Kong, for instance; in the last-named case it has been produced in large measure by deliberate state action, through the construction of five planned new towns in the 1970s and 1980s. But the process further fuels the growth of the entire complex; thus, while many larger city regions in advanced countries tend to be experiencing population decline, whether or not they are also in economic decline, this is almost never true for their equivalents in the developing world.

The main problem for policy in these metropolitan areas, therefore, is threefold. First, is it either feasible or desirable to try to divert the concentration of higher-level command and control activities out of the primate center? Second, insofar as it is, what would be the most appropriate cluster of activities? And third, where would be the optimal location or locations?

One approach, attempted in a few developing countries and considered in others, has been the relocation of the capital city (Hall, 1992). The problem with this approach is that it is both extremely costly and somewhat speculative, in that it is by no means certain that it will have a substantial effect on the subsequent pattern of development. Nigeria's attempt to do so is severely straining its budget, while the creation of Brasilia appears to have had only a minor effect upon the continued growth of Rio and Sao Paulo. Further, there may be diseconomies in the process, since it entails disarticulation of the national elite and its networks. This may be especially serious for those developing countries which follow the Japanese model of the "developmental state," since here a strong national planning ministry has close ties to major industrial corporations (Smith and Lee, 1991).

More promising, therefore, may be relocation of research and development activities, which currently tend to be highly concentrated in national research institutes or in prestigious national universities within the national capital region, and which may serve to spearhead the development of indigenous high-technology industries to compete in market niches within the global economy. The best-known models are Japan's establishment of the Tsukuba Science City in the 1960s, and its later Technopolis policy of the 1980s, both of which were designed to reduce congestion in the metropolis by relocating dynamic activities away from it; they were simultaneously technological development policies and regional development policies. Studies of Tsukuba seem to confirm that it failed to establish the necessary synergy between decentralized national research institutes, the relocated university, and private spinoff firms; indeed, until recently private investment has been generally lacking (Castells and Hall, 1992; Gakuen Toshi, 1985; Onda, 1988). It is too early to reach a definitive verdict on the Technopolis program, but so far it appears that relatively few of the approximately 26 locations have shown strong growth, and that the program seems to have been success-

ful in attracting branch plant operations of major companies rather than in encouraging genuinely new innovative enterprises (Broadbent, 1989; Castells and Hall, 1992; Douglass, 1988, 1989; Edginton, 1983, 1989; Fujita and Hill, 1989; Glasmeier, 1988; Kawasaki and Stohr, 1988; Kawasaki and Taketoshi, 1987; Masser, 1990; Noguchi, 1986, 1988; Roper-Dennis, 1984; Toda, 1987; Tatsuno, 1986, 1988, 1990; Yamasaki, 1990).

Nevertheless, variants of the Tsukuba-Technopolis approach are being actively attempted by neighboring middle-income countries. Taiwan has established a major R&D complex at Hsinchu, 70 km. from Taipei on the still-underdeveloped west coast; the Republic of Korea has established a similar science city at Taedok in the center of the country. In both cases, the policy rests on the concentration of major governmental scientific research institutes and national university facilities, within a self-contained new town. In the latter case, also, the policy is related to another, the establishments of "Technobelts" along major national lines of communication (Castells and Hall, 1992). Like the Japanese policies on which they appear to be modelled in part, these have simultaneously a technology-development objective and a regional objective. It is too early to judge whether either will succeed in its twin objectives.

A Tentative Conclusion

This raises a final question. Policy must always be based on a good understanding of process. Policy initiatives that ignore deep underlying structural processes run the risk of failure, and even of being counter-productive. Even in advanced economies with highly developed systems for the exchange of information, including advanced telecommunications and high-speed train systems (Japan, France), all the evidence is that high-level service activities remain highly concentrated in the urban core. That is because these cores are the point of *articulation* between two economies: the global and the national. They simultaneously relate to other points in the global economy, while communicating with (and controlling) their respective national economies. If this is true of London, Paris, or Tokyo, we should not expect it to be any less true of Mexico City, Sao Paulo, Seoul, or Taipei.

The conclusion must be that self-determination may be easier for cities in the developed world, especially those occupying favored geographical niches in relation to their national and continental economies, than for those in middle-income countries, because the latter are still more dominated by what could be called the economic shadow cast by their primate city regions. Some of these countries are making bold attempts to break out of this mold, but the forces of agglomeration are very strong. Here a gradualist approach may be the right one: it would seek to decentralize

certain functions to a limited degree within these sprawling metropolitan regions, and to ensure that these have a strong mutual synergy, so as to encourage rapid development of counter-agglomerative forces. In other words, they may produce an *extension* and *reallocation* of the forces, rather than a radical attempt to create distant counter-magnets. As the World Bank puts it in a recent policy paper:

Growing awareness of environmental risks and the weakness of public institutions in managing rapidly expanding urban areas suggests that, from a research perspective, there is a need to revisit the issue of city size and the limits to agglomeration economies in megacities.

Within these spatial dimensions of the urban economy, the challenge of urban policy is to maximize the agglomeration economies and their positive externalities while minimizing the diseconomies and negative externalities (World Bank, 1991: 35).

The Bank suggests action to rectify deficiencies in infrastructure, simplify the regulatory framework, and strengthen municipal institutions. It does not directly address the question of spatial structure, but that is implicit in many of its sectoral policy recommendations. Exactly how to develop such policies of spatial deconcentration, specifically with a view to maximizing economies and minimizing externalities, should be a high priority for urban research and policy formulation.

In sum: globalization is increasing, not diminishing, the pressures toward spatial concentration within the nations that are part of the process. Serious enough in the nations of the developed world, these pressures are soon likely to become almost unbearably acute in the middle-income countries. Finding solutions is now a priority. But they must be found in terms of policies that recognize realities, and seek to bend the trends rather than break them. Only these are likely to have a chance of enduring success; only these will leave behind a model to be imitated and improved upon by others.

Table 1

PRODUCER SERVICES: NATIONAL EMPLOYMENT SHARE

United Kingdom, 1981		Producer Services %	
Greater London		22.0	
West Midlands		5.3	
Greater Manchester		5.0	
United States, 1980		Producer Services %	
New York City		7.8	
Los Angeles		4.9	
Chicago		3.8	
Japan, 1981	Finance & Insurance %	Real Estate %	Services %
Tokyo	15.2	23.9	12.5
Osaka	8.2	11.0	6.5
Nagoya	4.8	4.7	4.8

Sources: Marshall 1988; Sassen 1991.

Table 2

EMPLOYMENT SHARE OF SELECTED PRODUCER SERVICES

Producer Services as % Total Employment

	<u>Banking & Finance</u>	<u>Insurance</u>	<u>Real Estate</u>	<u>Business Services</u>	<u>% Natl Prod Serv Employmt</u>	<u>Locationn Quotient</u>
London	4.8	1.7	1.0	10.2	34.1	1.96
New York	10.7	3.2	3.1	9.4	7.2	1.92
Tokyo	4.2		1.9		-	

Source: Sassen 1991.

Table 3
MAJOR METROPOLITAN AREA POPULATIONS, BY CATEGORY

Population, million, 1980-1					
Global	London	9.8	New York	17.4	Tokyo-Yokohama 17.7
National	Paris	9.5	Chicago	7.9	Osaka-Kobe 8.7
	Milan	6.8	Los Angeles	11.5	Seoul 8.3
	Berlin	3.4	San Francisco	5.4	Hong Kong 4.5
	Brussels	3.3			Sydney 3.3
Regional	Munich	2.5	Boston	3.7	Pusan 3.1
	Amsterdam	2.4	Houston	3.1	Melbourne 2.8
	Manchester	2.0	Atlanta	2.1	Singapore 1.6
	Copenhagen	1.9	Minneapolis-SP	2.1	Kuala Lumpur 0.9
	Lyon	1.7	Seattle	2.1	

Sources: United States State and Metropolitan Area Data Book 1986; United Nations 1988; Cheshire and Hay 1989.

Note: The selection of Metropolitan Areas in the National and Regional categories is illustrative and somewhat arbitrary; no attempt is made to include all cities in a strict size ranking.

Table 4
SELECTED NEWLY INDUSTRIALIZING (MIDDLE-INCOME) COUNTRIES:
LEADING METROPOLITAN AREAS, ca. 1990

		Population <u>million</u>	Share of <u>National Population, %</u>	
Korea	Seoul	11.3	26.0	
Taiwan	Taipei	2.7	12.9	
Malaysia	Kuala Lumpur	1.7	9.7	
Argentina	Buenos Aires	11.6	35.8	
Chile	Santiago	4.7	35.7	
Peru	Lima	6.5	29.1	
Mexico	Mexico City	19.4	21.9	
Brazil	Sao Paulo	18.4	12.3	}
				} 19.6
	Rio de Janeiro	11.1	7.4	}

Sources: United Nations 1989; World Almanac and Book of Facts, 1991.

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