

DANIEL FELSENSTEIN, EIKE W. SCHAMP
AND ARIE SHACHAR

1. EMERGING NODES IN THE GLOBAL ECONOMY: AN INTRODUCTION

1.1 NODES, NETWORKS AND FLOWS IN THE GLOBAL ECONOMY

The 'global economy' is increasingly perceived as a catch-all phrase. It evokes vastly divergent emotions ranging from resentment and anger over poverty and sustainability to pride and admiration over technological progress and human ingenuity. For all its fuzziness (Markusen, 1999), globalization does however convey two major shifts that pervade much of the economic and spatial change taking place in the world economy. The first relates to the notion of scale. Whether distance has died or simply been minimized (Cairncross, 1997), globalization has redrawn the limits on spatial interaction. The second relates to the seamlessness of the world economy. Globalization has led to the obliteration or neglect of borders. A truly global economy implies the unfettered flows of people, goods and services for whom regional or national boundaries are increasingly irrelevant.

Both of these processes impact on places. Paradoxically, they lead to the glorification of some, such as the global or world cities, and the demise of others. At one and the same time, the uniqueness of some locations is highlighted while the identities of many others are merged into an amorphous mass. But just how different is this to the 'global economy' of previous eras? Did not previous rounds of globalization, from the Renaissance to the Industrial Revolution have similar effects both on the scale of interactions and the flows between locations and on the fortunes of those places in which they originated?

The answer to this question underlies the motif of this volume. While the contemporary global economy may be doing very much the same as in the past but at greater intensity, the nature of relations between the places comprising the global economy has changed radically. The rise to prominence of Florence in the Renaissance period or Manchester in the Industrial Revolution simply served to elevate these locations within the given hierarchy of global places. The role, fate and fortune of places was determined by their place in this hierarchy. The implicit theme of this book is that the perception of the global economy as an hierarchical structure is of limited utility. While hierarchies have formed the mainstay of explanatory frameworks in economic geography ranging from central place theory, through location theory and core-periphery relations, we suggest that this construct breaks down when faced with phenomena that are structured as networks. Many of the

contemporary processes driving the global economy are inherently network-based. The network metaphor therefore forms the main unifying concept of this volume.

While the network has been used increasingly as an explanatory framework in studies of social, economic and spatial relations (Cooke, 1988; DeBresson and Amesse, 1991; Powell, 1990), less attention has been focused on the functions of the nodes that comprise the network. Our conception of the roles of cities in global networks differs from that adopted in recent studies. For us, these nodes are not 'mid-level' places in a global hierarchy (Sassen 2002) or 'second-tier' cities beyond the metropolitan area (Markusen, Lee and DiGiovanna 1999). Rather, they are temporal and volatile forms of engagement with the global economy conducted from key locations. Due to the network structure in which they are organized, the same place can function at one and the same time as global node and a parochial location.

Our central thesis is that in the current round of globalization, places (cities, metropolitan areas or city-regions) selectively function as nodes within networks. In this respect, we draw on the network paradigm that sees synergetic relations between places in a manner similar to those between firms (Camagni, 1993; Camagni and Salone, 1993). We do not attempt to formalize the resultant network topography but in common with this literature we recognize that the network relations of places are not independent of the firms located in these places (Taylor, 2001). Consequently, our approach is to analyze the process of network formation through in-depth studies of leading sectors in two different contexts. On this basis we extract more general insights into the operation of networks and the functioning of nodes, for example, network formation drawing on the case of high tech nodes (Chapter 6).

The notion of a 'node' implies constant interaction with other units such as places, firms, households etc. The value of a node lies in its connectivity with other nodes. The denser the level of inter-connectedness the more receiving, transmitting and processing the node can accomplish. Underlying this conceptualization of places as nodes, is the recognition that places come to be characterized by the specialized economic function that they fulfill in the global economy.

The implications of this perspective are far reaching. First, this view suggests a relational view of the global economy (Beaverstock, Smith, Taylor, Walker and Lorimer, 2000). The importance and centrality of a node is defined by its relations to other nodes. The upshot of this view, is that static rankings based on leading indicators while highly prevalent in the literature, are less than adequate. Instead, it is more useful to look at interaction between nodes by observing the flows between them. Movement of capital, telecommunications traffic, international investment, market information, cultural goods and highly skilled labor can all be used to proxy these flows. The boundaries of these flows define the topography of the network. The efficiency gains derived from organizing interaction as a network rather than as a hierarchy, derive from the increasing returns that network organization affords. This point is developed further below (Chapter 6). However, at this juncture it is poignant to note that proximity is not a sine qua non of network formation and there is even empirical evidence that supports the contention that geographical dispersion makes for greater network efficiency (Kilkenny, 2000). A further important theme arising from a network perspective is that node centrality in a network derives from

relations with other nodes. The more the interaction, the more central the node. This emphasis on the role of returns to scale should hardly be ignored. It links network formation to a burgeoning literature that emphasizes the role of increasing returns in urban and metropolitan development (Krugman, 1991).

Second, we posit a high degree of flexibility and temporality in the economic functioning of places. The prominence (or decline of a node) is not necessarily contingent on the attributes of the node itself. Nodes assume different levels of importance over time determined by their interactions with other nodes. Thus places functioning as nodes are less likely to be subject to the vagaries of technological lock-in and path dependence than places whose centrality is determined by their position in the urban hierarchy. This is not to say that historic accidents and idiosyncratic events cannot trigger off a unique growth process of a node in a given place. Rather, we are simply asserting that in a network configuration, the chances of a whole system locking-in to a sub-optimal form of operation is much less likely than in a tightly structured and hierarchical chain of interactions.

Third, the network approach broadly ascribes to the 'space of flows' thesis (Castells, 1989, 1996). The level, frequency and intensity of flows between nodes, defines their place in the global economy. Places are defined by "what flows through them, rather than what is fixed within them" (Beaverstock *et al.*, 2000, p.47) These flows can relate to skilled labor (Chapter 6), international finance (Chapter 5), foreign direct investment (Chapter 4) and so on. It is important however, not to overstate the role of flows. Nodes are also real places with distinctive characteristics, development histories and attributes that distinguish them from each other. Their emergence on the global arena is as likely to affect their urban development as it is their economic development. As both a repository of flows and a very real location, a tension can exist in the emerging node. In certain instances the flow aspect dominates, as argued for example in the Israeli high tech case (Chapter 6). In other instances, the concrete place function determines the character of the node, as in the case of activity grounded in physical movement of goods (Chapters 7,9) or the consumption of tourism or cultural amenities (Chapters 10-12).

Fourth, a stress on nodes suggests multi-positioning in the global economy. If networks govern the interaction between places, then places can be global in one respect and local in another. The same location can engage in multiple roles, functioning as a global node in a given network but as a parochial center in other aspects of its economic development. It is this potential dualism that gives nodes their particular identity despite the global forces fashioning (and homogenizing) them. Given the process-led focus of our investigation, we treat Frankfurt and Tel Aviv as the prism through which these developments can be viewed. For this reason we are less interested in accurately delimiting the spatial boundaries of the nodes. In general we adopt the metropolitan region or city-region definition as the spatial unit of analysis (Scott, 2001). Our focus on process rather than particular city development per se, also highlights the direction of causality in the relationship between globalization and node emergence. On the one hand, we recognize the primordial relationship in which global forces cause the emergence of nodes and view nodes as a reflection of these forces. On the other hand, cognizant of nodes as

EIKE W. SCHAMP

2. FROM INDUSTRY TO SERVICES: THE CHANGING BASIS OF THE FRANKFURT/RHEIN-MAIN METROPOLITAN ECONOMY

2.1 URBAN ECONOMY AND THE DISSOLUTION OF THE CITY IN THE AGE OF GLOBALIZATION

Since the beginning of industrialization, the growth of most of Europe's larger cities has been linked to the growth of industry. Cities have partially evolved into the cores of larger economic areas that prospered with industrial growth. Due to the simultaneous transition to the 'second industrial divide' (Piore and Sabel, 1985) and to a society that produces more income and employment from services than from manufacturing, the economic base of cities has changed. De-industrialization and tertiarization of cities have therefore become quasi 'normal' processes of European city-reconstruction in recent decades, and new city trajectories have emerged, based in part on cities' historic (industrial) roots. Wherever economic actors rebind cities to the process of globalization or, as we will argue, the Europeanization of urban economic regions, the trajectory of these cities must be reinterpreted. This chapter will address the process of redefining the economic basis of the Frankfurt/Rhein-Main region in the age of globalization

The city, however, can no longer be regarded as a quasi-closed urban economic region, as its economic activity has increasingly come to extend outside its territorial borders. In particular, activities contributing to the globalization of the urban economy result in an increased demand for locations and space, which can no longer be fulfilled by smaller cities. Just as industries once left the city looking for wide-open spaces, physical infrastructure (like international airports), office complexes and huge logistics companies are also heading for the hinterland today. This is especially true of Frankfurt am Main. The city has less than 650,000 inhabitants, and, unlike other German cities, such as Berlin, Munich and Cologne, was unable to substantially expand its territory. Important elements of infrastructure that serve global economic actors are no longer located within the city's political and administrative territory. With Frankfurt's growing importance as a globalizing city, essential economic activities have moved into its hinterland, as well as into neighboring cities like Wiesbaden, Mainz and Darmstadt. While Frankfurt am Main is not the only city experiencing this process of "the dissolution of the city into its region" (Läpple, 1999), it is leading the way. Regarding the city's economic

globalization, the term 'metropolitan region' appears to be decisively more appropriate than 'metropolitan city', for only when the surrounding Rhein/Main Region is taken into account does Frankfurt become a powerful metropolitan region with more than 4 million inhabitants.

Many studies assign great importance to this region as a 'second tier global city' (see, for example, Friedman, 1995; Keil and Ronneberger, 2000). The metropolitan region, however, is economically defined - not politically. Attempts to facilitate the political institutionalization of the Frankfurt/Rhein-Main Region have been made repeatedly and are being intensified today. Whether or not political institutionalization will serve to improve the metropolitan region's economic competitiveness remains an open question, and will not be addressed here (see Schamp, 2000).

In this chapter, the term 'Frankfurt/Rhein-Main metropolitan region' refers to a region that has been demarcated according to economic criteria for the purpose of analysis (Figure 2.1). The region possesses no political legitimization, most notably because the economic region straddles the borders of two neighboring federal states. This demarcation is partially legitimized by the fact that the regional Chambers of Commerce, which represent business interests in Germany, banded together under the name "Rhein-Main Forum" in the early 1990's.

This chapter will describe the reconstruction of this city-regional economy, and its evolution from an economy of national importance to one of international importance. Reconstruction is a long-term, path-dependent process that is influenced by powerful actors from both inside and outside the region. Two things result from this. Firstly, the historical growth of the region's economic structure plays a central role in the remodeling of its economic basis. The economic basis of cities and their surrounding regions often reflects an historically-based specialization that is no longer able to withstand the pressures of global competition. In this way, the Rhein-Main Region constituted one of Germany's most important industrial production regions for quite some time. This chapter will examine the influence of the retreat of industrial production on the metropolitan region's future role. Considerable differentiation, however, emerges among the individual industrial clusters, and, with the arrival of new services in the region, new areas of specialization also emerge, redefining the role of Frankfurt/Rhein-Main within the European city-system. In other words, the new role of the region would be insufficiently defined if limited to a financial center alone (see Chapter 5).

Secondly, newly emerging actors in the region, as well as the strategies of already established actors that must always be regarded as responses to current changes in the world, have a definite impact on the path of development. Foreign companies, particularly in the industrial sector, have been active in the Frankfurt/Rhein-Main region for quite some time, without causing massive changes in the role of the city and its region in the national and European contexts. These companies changed their strategies, and new companies with innovative strategies entered the scene, due purely to the circumstances of the 1980's and 1990's. These circumstances were related to increasing Europeanization within the context of creating one integrated European economic region. In reaction to this change in context, companies took steps that were partially anticipatory. The single European

market discussed in the 1980's and implemented in the 1990's totally changed the institutional arena of business for many companies.

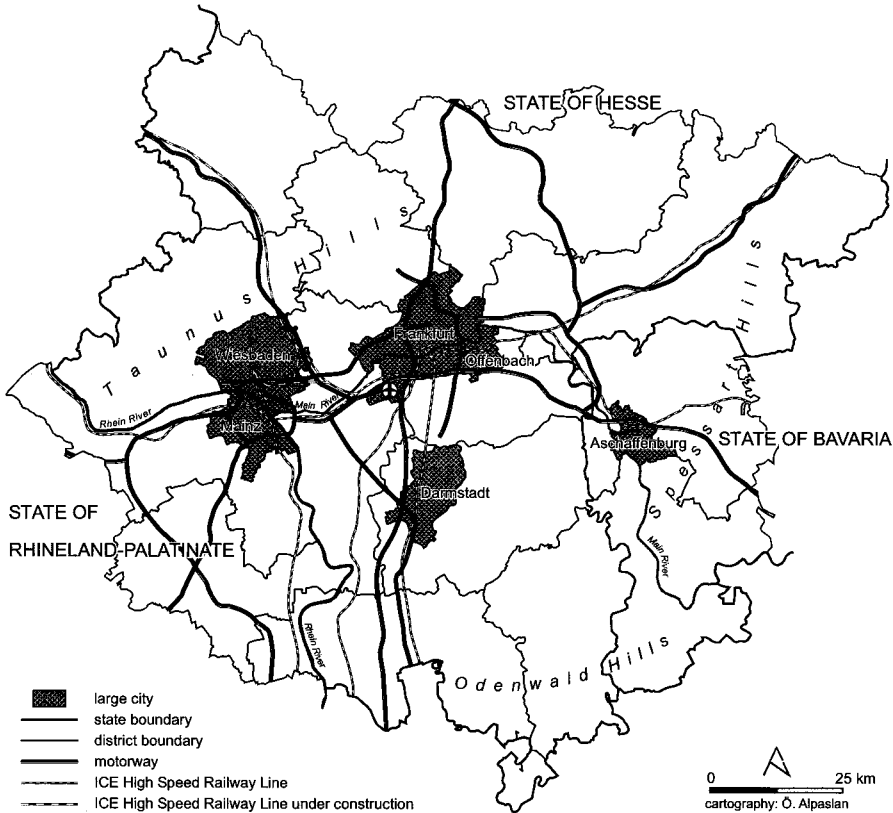


Figure 2.1 The polycentral metropolitan area of Frankfurt/Rhein-Main

The next section of this chapter will examine the tension that exists between the logic of territory and the logic of economic actors. Economic actors operate within specific historically relevant constellations against a background of existing institutions. Actors function according to a logic of social relationships that many researchers define as a network. While some institutions may be understood as being territorially bound - especially if they have been codified for a certain territory, networks are generally characterized by ranges that cross territorial borders. This is especially true of internationalized companies, as well as foreign companies investing in the region. One of the theses of this chapter is that the process of redefining regional structures has been considerably accelerated by the actions of globally operating actors. This has resulted in social and political tensions within the city-region that have yet to be resolved (Keil and Ronneberger, 2000).

3. GLOBALIZATION PROCESSES AND THEIR IMPACT ON THE STRUCTURE OF THE TEL AVIV METROPOLITAN AREA

3.1 INTRODUCTION

The chapter deals with processes of change in the functional structure of the Tel Aviv Metropolitan Area (TAMA) in the wake of economic globalization processes of the 1980s and 1990s. Of all the components making up the spatial organization of the TAMA, the chapter focuses on the development of two Central Business Districts (CBD) in metropolitan Tel Aviv: the traditional central city business arena and a new emerging center. Rather than heralding the formation of a polycentric urban structure, the new Tel Aviv CBD represents a real-estate led response at generating a new center of gravity for economic activity in Tel Aviv. The new center therefore competes vigorously with the established center. A further unique feature of the developing metropolitan structure is the *ex nihilo* nature of the new development. Instead of following the well-known pattern of incremental CBD expansion via new building at the margins of the established center, the new Tel Aviv business district represents an attempt at re-directing growth to a new location altogether.

Traditionally, the Tel Aviv CBD developed in the southern area of Tel Aviv in the location of the original site of the first neighborhood of the city of Tel Aviv, the Ahuzat Bayit quarter established in 1909. It grew consistently and systematically to become the managerial and financial center of the metropolitan area and in many instances served as the nerve-center of the entire Israeli economy, a role which it still fulfills today. Over the last decade or two however, the growth of the CBD stabilized and its areal extent changed only slightly.

Challenging the established CBD, a secondary center emerged in an area that was sparsely occupied by industrial workshops, garages and a municipal swimming pool. In terms of jurisdictional responsibilities the new center is located outside the Tel Aviv city limits and within the neighboring municipal jurisdiction of the city of Ramat Gan. Its most significant locational advantage is its proximity to the major highway of the metropolitan area (Netivei Ayalon – Highway No. 2), which is the backbone of the transportation system for the entire region (Figure 3.1). This new CBD has emerged in direct proximity to the Diamond Exchange (Bourse) which is the control center of the entire diamond industry in Israel. All import and export flows of diamonds and other precious stones are transacted via the Ramat Gan location. The Diamond Exchange is located about three kilometers to the north-east

of the traditional CBD and has become the focal point for the development of the alternative CBD attracting much of the high-rise office development in the metropolitan area of Tel Aviv. While the initial buildings near Diamond Exchange were of medium height (15 to 30 stories), later construction built in the 1990s rose to heights of 50 to 60 floors. At present, the area of the new CBD is developing outwards in a north-east direction as a collection of post-modern, high-rise office buildings. While the new center does still not match the old CBD in terms of total floor space and number of employees, it nevertheless has accumulated a critical mass of office, research and design space serving some of Israel's leading firms in high-tech and the producer services sector.

This chapter analyzes whether there are significant differences in terms of composition of the economic sectors between the two CBDs and tests the hypothesis that the new CBD is strongly related to economic globalization processes, which occurred in Israel during the 1980s and 1990s. Two different but inter-related aspects of Tel Aviv's functional structure are considered in the analysis that follows. The first deals with the emergence of a new CBD alongside an established center as a response to the needs of a metropolitan economy undergoing processes of globalization. The second outlines the emergence of a new socio-spatial residential structure which is a direct result of the growing number of foreign workers occupying the lowest level neighborhoods in Tel Aviv. A highly segregated micro-geography has emerged as a further urban response to the challenges of globalization and a distinct enclave of foreign workers of significant size and particular way of life has been formed.

3.2 THE TWO CBDS OF THE TEL AVIV METROPOLITAN AREA

In order to highlight the role of governance structure affecting functional structure in metropolitan Tel Aviv, we first broadly sketch the jurisdictional limits of the TAMA and the role of the planning authorities that serve this area. We then highlight the different tax regimes operating across the different jurisdictions that comprise the metropolitan region. In purely administrative terms, the metropolitan area is composed of three territorial units (defined by the Israel Central Bureau of Statistics). These are the Tel Aviv District and the Central District and the smaller Ashdod natural area at the southern border of the Central District (Figure 3.1). The population of the TAMA was 2.65 million (2001), which comprised 42 percent of Israel's total population (CBS, 2001). The TAMA has grown around the historical core of the city of Tel Aviv-Yafo over the past fifty years to comprise at present more than 25 towns, 33 local authorities, and 13 regional councils, which include 198 villages. Tel Aviv is the central city of the metropolitan area. It is surrounded by rings of built-up area of descending density and declining intensity of commuting streams to the metropolitan core - the city of Tel Aviv.

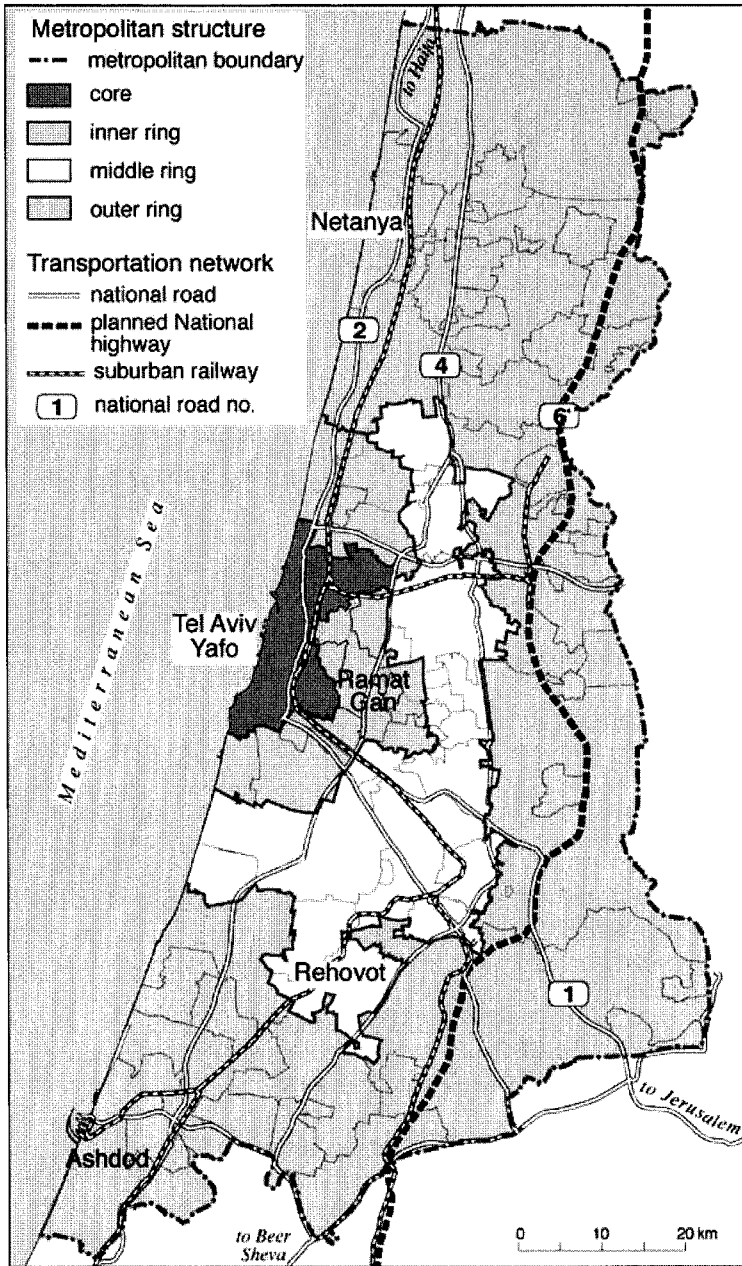


Figure 3.1 Tel Aviv-Yafo metropolitan area: basic structure and main transportation network