

RESEARCH NOTE

RANKING WORLD CITIES: MULTINATIONAL CORPORATIONS AND THE GLOBAL URBAN HIERARCHY¹

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Abstract: World-city literature often relies on *a priori* assumptions rather than quantifiable measures to discern the global urban hierarchy. In search of comparable international indicators, many studies use the corporate headquarters of multinational corporations (MNCs) as primary locational data. Recognizing that MNCs play a dominant role in the global economy, we argue that reliance on headquarters locations alone distorts the contours of the urban hierarchy. The method overstates the importance of urban centers in the developed countries and economies dominated by large corporations; conversely, it underestimates the importance of lower-level circuits of regional communication, transaction centers in developing countries, and cities in less-centralized economies. This bias is not simply a technical matter: it asserts the power of the core economies, while understating the diversity and complexity of global interactions. We propose to include MNC first-level subsidiary locations in a more refined measure of world-city status.

On October 27, 1997, a massive sell-off at the Hong Kong stock exchange sent the Hengseng Index tumbling down over 15% in one day. Within hours, the ensuing panic reverberated around the world. The New York Stock Exchange lost 7.2% (more than 500 points) the next day, representing the greatest daily percentage drop since October 1987 and the largest single point loss in Wall Street history. Paradoxically, while stock brokers and financial analysts took seriously the vicissitudes of the Hong Kong stock market, world-city scholars have not accorded Hong Kong a significant position in the global economy. The most popular world-city classifications either do not include Hong Kong, or they put the East Asian center on par with such secondary global nodes as Chicago,

Dallas, and Munich. Evidently, something is wrong with our understanding of world cities: either global financial markets and transnational corporations have overemphasized the importance of Hong Kong, or scholarship has failed to recognize the true shape of the global urban hierarchy. The conundrum raised by these unanticipated Hong Kong linkages illustrates the theoretical challenges and empirical ambiguities of world-city research.

The world-city hypothesis, which presumes a handful of cities to be the world's dominant political-economic centers, has become a leading framework for comparative urban scholarship. Although the extensive world-city literature has generated a variety of approaches, the headquarters locations of multinational corporations (MNCs) serve as a common empirical measure of the global urban hierarchy. Many argue that the international economy, to a large extent, is controlled by relatively few MNCs, headquartered in the core countries, increasingly extending their corporate reach to countries on the periphery. As a result, the major spatial concentrations of these corporate headquarters constitute global control points and correspond to the upper tier of the urban hierarchy (Hall, 1966; Smith and Feagin, 1987; Sassen, 1991, 1994, 1995; Knox and Taylor, 1995).

We agree that MNCs play a key role in the framework of the global economy but, from our perspective, a sole reliance on headquarters locations to identify the global urban hierarchy is problematic. This method overestimates the importance of cities in the developed (core) countries and in economies dominated by large corporations. On the other hand, such rankings underestimate the important centers of regional production and administration in less top-heavy economies and in the developing world. Even when used in combination with other measures, such as primacy indices and the concentration of intergovernmental and nongovernmental organizations, European and North American cities dominate the upper tier of the urban hierarchy. Most important cities in the periphery and semi-periphery are completely absent or at best enjoy a low-level presence. The analytical bias inherent in world-city studies reflects and in turn perpetuates well-established Eurocentric views of the global economy under the guise of objective data. By asserting the dominance of core countries, the world-city literature has tended to underestimate the complexity, diversity, and interdependent nature of global networks, thereby marginalizing important nodes of globalization in developing regions. We propose an alternative way to discern the global urban hierarchy, based on the locations of both MNC headquarters and first-level regional subsidiaries.

METHODOLOGICAL PROBLEMS OF THE WORLD-CITY HYPOTHESIS

Although world-city research became widely popular only in the 1980s, the approach grew out of earlier comparative work on primate cities and megalopolis (Jefferson, 1939; Gottmann, 1961). What distinguishes contemporary world-city research is the focus on political-economic control over global production and marketing, rather than demographic size, as the determining characteristic of urban rank (Friedmann and Wolff, 1982). Empirical studies of the global urban hierarchy have confidently grouped cities according to levels of influence in international business (Cohen, 1981; Armstrong and McGee, 1985; Smith and Feagin, 1987; Sassen, 1994). Recent theoretical work empha-

sizes that, given the mobility permitted by new communications and transportation technologies, urban spatial concentration remains critical for corporate management of an integrated world economy. Indeed, these dense patterns of interaction, rather than political or administrative jurisdictions, are the defining characteristics of world cities. While accepting that economic globalization may be too volatile to allow us to fix a stable hierarchy, Friedmann (1995, pp. 23–24) suggested a ranking of 30 world cities in four classes of descending importance: centers of global financial articulations, multinational articulations, important national articulations, and subnational/regional articulations.

Although the existence of key world cities has been theoretically established and widely accepted by scholars, the empirical task of verifying the global urban hierarchy remains problematic. Studies vary significantly in their data sources and in the weight they give to different political, financial, industrial, transportation, communications, cultural, and educational institutions. In fact, much of the discussion on the global urban hierarchy has been based on a *a priori* assumption rather than empirical data, as noted by others (Smith and Timberlake, 1995; Short et al., 1996).

We can discern two general data sources for world-city analysis. The first approach focuses on the geographic concentration of strategic decision making. Although some studies include governmental and nongovernmental organizations, the locations of large MNC headquarters attract most attention. Various methods have been proposed to analyze MNC location. Studies tend to rely on general tallies of MNC headquarters locations (Smith and Feagin, 1987), though many point to the importance of financial and producer services (Wheeler, 1986; Sassen, 1991, 1995; Friedmann, 1995; Lyons and Salmon, 1995). Others use specific measures to compare the financial power of cities, such as the head offices of banks and the size of stock markets. Different methods generate different outcomes. It is only when the size of stock exchanges is used that the widely recognized dominance of Tokyo, New York, and London becomes apparent over such other cities as Paris; and regional centers such as Singapore and Hong Kong only appear important when considering their stock markets (Short et al., 1996).

The unsatisfactory results of MNC headquarters studies have prompted a focus on global interaction networks. By focusing on flows of products, personnel, and information among cities, network studies purport to measure the centrality of cities in global transactions. While the network approach is sophisticated conceptually, it too encounters empirical problems. Demanding far more information than general MNC headquarters studies, comparable international data are harder to find in network analysis. Approaches based on the geographic analysis of newspaper business sections (Taylor, 1997), air traffic patterns (Smith and Timberlake, 1995; Short et al., 1996), and telecommunications volume (Short et al., 1996) offer potential insights, but they all suffer from data inconsistencies or biases.

We argue that an approach based on the simplicity of MNC headquarters location data, while factoring in significant patterns of international interaction, better discerns the global urban hierarchy. Literatures on globalization and world cities largely have agreed that, if nothing else, MNCs provide the chief infrastructure of the global economy. Corporate spatial strategies thus provide one of the most important indices of world-city status. After examining the problems of studies exclusively based on head-office locations, we propose an alternative method of including first-level MNC subsidiaries to identify global and regional centers.

TABLE 1.—THE 21 TOP-RANKED CITIES, BY HEADQUARTERS LOCATIONS
OF THE *FORTUNE* GLOBAL 500^a

| Rank | Metropolitan area, country | Total number of headquarters |
|------|----------------------------|------------------------------|
| 1 | Tokyo, Japan | 92 |
| 2 | New York, USA | 38 |
| 3 | Paris, France | 37 |
| 4 | Osaka, Japan | 33 |
| 5 | London, UK | 27 |
| 6 | Chicago, USA | 12 |
| 7 | Seoul, South Korea | 11 |
| 8 | Munich, Germany | 9 |
| 8 | San Francisco, USA | 9 |
| 10 | Zurich, Switzerland | 8 |
| 11 | Atlanta, USA | 7 |
| 11 | Frankfurt, Germany | 7 |
| 11 | Washington, DC, USA | 7 |
| 14 | Basel, Switzerland | 5 |
| 14 | Brussels, Belgium | 5 |
| 14 | Dallas, USA | 5 |
| 14 | Dusseldorf, Germany | 5 |
| 14 | Los Angeles, USA | 5 |
| 14 | Madrid, Spain | 5 |
| 14 | Rome, Italy | 5 |
| 14 | St. Louis, USA | 5 |

^aExcept for the United States, corporate headquarters locations are listed by metropolitan areas; for the United States, Consolidated Metropolitan Statistical Areas (CMSAs), as defined by the United States Census, are used.

Source: *Fortune* (1996).

BIASES IN MNC HEADQUARTERS ANALYSIS

Numerous business magazines feature annual rankings of the top corporations, from which the headquarters locations can be deduced. Utilizing the *Fortune* (1996) Global 500, we generated a systematic comparison of the top 20 world cities, as measured by metropolitan headquarters locations; an eight-way tie for number 14 raised the list to 21 cities (Table 1).² The five world cities of Tokyo, New York, Paris, Osaka, and London clearly dominate the list. Of these, Tokyo looms over the others with 92 of the largest 500 MNCs, more than twice the 38 firms headquartered in metropolitan New York, 37 in Paris, 33 in Osaka, and 27 in London. In fact, *Fortune's* Global 500 relegates New York, Paris, and London to a secondary rank far behind Tokyo. The only city of the developing countries to make the top 21 world cities is Seoul, South Korea, with 11 corporate headquarters. Such important regional centers as Hong Kong, São Paulo, Istanbul, and Mexico City are excluded by virtue of having only 1 corporate headquarters listing apiece, fewer

TABLE 2.—THE 20 TOP-RANKED CITIES, BY HEADQUARTERS LOCATIONS OF THE 500 LARGEST CORPORATIONS LISTED IN *BUSINESS WEEK*^a

| Rank | Metropolitan area, country | Total number of headquarters |
|------|----------------------------|------------------------------|
| 1 | Tokyo, Japan | 80 |
| 2 | New York, USA | 56 |
| 3 | London, UK | 29 |
| 4 | Osaka, Japan | 23 |
| 5 | Paris, France | 17 |
| 5 | San Francisco, USA | 17 |
| 7 | Chicago, USA | 14 |
| 8 | Hong Kong, China | 11 |
| 9 | Dallas, USA | 10 |
| 10 | Atlanta, USA | 9 |
| 10 | Los Angeles, USA | 9 |
| 12 | Philadelphia, USA | 8 |
| 13 | Minneapolis, USA | 7 |
| 13 | Munich, Germany | 7 |
| 13 | Washington, DC, USA | 7 |
| 16 | Pittsburgh, USA | 6 |
| 16 | Singapore | 6 |
| 16 | St. Louis, USA | 6 |
| 19 | Boston, USA | 5 |
| 20 | Montreal, Canada | 5 |

^aExcept for the United States, corporate headquarters locations are listed by metropolitan areas; for the United States, Consolidated Metropolitan Statistical Areas (CMSAs), as defined by the United States Census, are used.

Source: *Business Week* (1996).

than such United States cities as St. Louis (5 firms) and Dallas (5 firms). Internationally, the United States dominates the list with 8 of the top 21 world cities, followed by Germany (3 cities), Japan (2 cities), and Switzerland (2 cities). Various important regional centers, such as Singapore, are not identified by the *Fortune* (1996) ranking.³

We also selected the largest 500 MNCs from the *Business Week* (1996) Global 1000. Unlike *Fortune*, *Business Week* uses market value instead of revenue as the criterion for corporate rank, a focus that gives greater weight to financial institutions and real estate companies, as opposed to manufacturing and other service firms. Nonetheless, the results are similar (Table 2). Among the top 6 world cities, Tokyo (80 corporate headquarters) and New York (56 firms) clearly predominate; the cities of London (29 firms), Osaka (23 firms), and Paris (17 firms) are relegated to subordinate positions, along with San Francisco (17 firms) and Chicago (14 firms). Again, the United States dominates the list of the top 20 cities, this time with 12 cities, as opposed to 2 from Japan. (Inexplicably, South Korea does not figure among the 21 countries with firms in the *Business Week* list.) Of the

20 top-ranked MNC headquarters cities, only 2 are located in the developing world: Hong Kong (11 firms) and Singapore (6 firms).

Empirical data on leading MNC headquarters location, as found in these two leading surveys, diverge in significant ways from common conceptions of world cities. Neither survey confirms an unambiguous dominance of New York, London, and Tokyo, as postulated by so many world-city studies. In fact, both surveys show Tokyo in a class of its own, while New York and London shift ranks with other European and United States cities. The meager presence of cities in developing countries leads to a global urban hierarchy almost exclusively dominated by North America, Europe, and Japan. We question whether these data are a fair representation of the global urban hierarchy.

We argue that this method suffers from three analytical biases. The first problem is that the use of headquarters data fails to recognize the effects of national borders, since MNCs are only transnational in their subsidiaries. MNC headquarters do not enjoy global locational choice. For instance, a German transnational company would not relocate its headquarters from Frankfurt to London, though the latter may be more central to the global economy. Since large corporations are predominately from developed capitalist economies or centralized state economies, it is not surprising that their headquarters concentrate in such countries. In other words, headquarters locations may be used to measure the economic power of a *country*, or the significance of certain cities in relation to others *within the country*, but it would be a mistake to use such data to discern the shape of the global urban hierarchy.

A second problem is that the use of headquarters data ignores variable geographical conditions and political-economic structures. The large size and spatially decentralized structure of the United States means that New York competes for corporate headquarters not only with foreign cities, but also with United States metropolitan centers (Wheeler, 1990; Fainstein, 1994; Markusen and Gwiasda, 1994; Godfrey, 1995). In contrast, European and Japanese world cities face less such intranational competition. In addition, differences in political-economic organizations also result in varying degrees of spatial concentration. American business is far less tied to the federal state than is the case in Japan, where the state stewardship of the Japanese economy, or "Japan Inc.," has been widely documented (Bello and Rosenfeld, 1992; Woronoff, 1992). Such close political-economic interactions make Tokyo an indispensable place to locate headquarters of Japanese firms, while the United States capital of Washington, DC, is not considered a prominent business center.

A third problem with the headquarters data is that the selection of the world's largest MNCs, however defined, heavily favors economies dominated by large corporations. The hidden assumption is that the presence of bigger firms reflects a locale's economic power. Although we agree that bigger firms are generally more powerful, there is no linear relationship between the presence of large corporations and the development of a regional economy. Recent discussion on flexible production has, in fact, disputed the assumption that bigger firms necessarily imply a superior form of economic organization. A growing literature argues that the network organizational form generates superior performance in innovation, market response, and general efficiency, compared to vertically integrated forms (Piore and Sabel, 1984; Scott, 1988, 1993; Walker, 1988; Storper and Walker, 1989).

MNC headquarters data emphasize economies dominated by large corporations, while rendering invisible vibrant locales with a prevalence of smaller firms. This phenomenon helps account for the prominence of Japan and Korea in world-city rankings, and the marginalization of Singapore and Hong Kong. Japan, known as one of the most top heavy of developed economies, is led by large trading or bank holding companies, which have consistently topped the world's corporate lists since the 1980s. The revenue of the 10 largest Japanese corporations represents about 26% of Japan's GNP in 1995, while the comparable United States figure is only 12%.⁴ In other words, it is the dominance of large centralized corporations in Japan, rather than the global position of Tokyo, that makes the Japanese capital appear to be in a class of its own. Japan's bubble economy featured inflated real estate values until the mid-1990s, a situation that also contributed to the gigantic size of Japanese corporations. In fact, Reed (1989) suggested that Tokyo can be seen as a secondary financial center, despite its concentration of the world's largest banking headquarters, since Japanese banks tend to reflect national financial power rather than international stature. Yet, in most word-city studies, Tokyo is placed in the same class as New York and London, without consideration of the nature of economic organization. A similar argument can be made for Seoul, Korea, the only city of the developing world to make the upper tier of the *Fortune* (1996) ranks. The South Korean command economy is even top heavier than the Japanese. Of the national assets, 85% are controlled by five national conglomerates in South Korea (Bello and Rosenfeld, 1992). On the other hand, a dynamic economy with a large number of smaller firms, such as Hong Kong's, will not even appear in the *Fortune* (1996) Global 500.

AN ALTERNATIVE APPROACH TO MNC LOCATIONAL ANALYSIS

We propose to include the locations of first-level MNC subsidiaries, not just the headquarters, in identifying the global urban hierarchy. Some may question our strategy of grouping together corporate headquarters and first-level subsidiaries, since these organizational divisions represent different levels of decision making. Yet this issue depends on the appropriate use of data. If used only to identify the preeminent control centers of the global economy, headquarters data may provide a reasonable measure. If, however, we want to evaluate the broad contours of the global urban hierarchy, a large database with the inclusion of first-level subsidiaries generates a more nuanced analysis. Furthermore, if we understand decision making as a process involving information exchange between headquarters and regional subsidiaries, it is questionable whether headquarters should be treated as the only MNC power centers. Frequently, key decisions are relegated to the regional headquarters, which act as important information and marketing centers.

Theoretically, our method has several clear advantages. It better represents corporate strategic planning by taking into account the global spatial configuration of their most significant interaction networks. MNC headquarters handle, process, and transmit information internally among the various parts of the enterprise and externally with other firms, while regional headquarters take major responsibility for coordinating the activities of a firm's affiliates (e.g., manufacturing units and sales offices) within a particular world region (Dicken, 1992). Despite the differences of responsibility, the headquarters and regional headquarters have similar locational requirements: both need sophisticated business services, along with strategic locations in the global transportation and communica-

tions networks, to maintain close contact with geographically dispersed parts of the organization. The inclusion of regional headquarters locations, therefore, better reflects MNC understandings of global and regional locations and their spatial strategies.

In addition, our method takes indirect account of the contribution of smaller firms and the general level of regional development. Corporations, seeking large and growing markets, often select the key regional locations to situate their lower-level offices. An economy dominated by smaller firms, therefore, is at no disadvantage in attracting subsidiaries, although it may not host major headquarters. Finally, this method significantly corrects distortions of geographical scale. While companies can locate their headquarters only in a single city, they can have unlimited subsidiaries scattered among various regions. Large-sized countries, therefore, usually have more subsidiaries than smaller countries. In our approach, for example, New York will not be compared unfairly to London, simply by virtue of the former's competition with other United States cities for headquarters locations.

Admittedly, it can be difficult to identify the regional headquarters of corporations, given the diversity of MNC structures. First-level subsidiary location provides a convenient proxy, since most corporate regional headquarters are listed at this level. Although there are various functional divisions of the first-level subsidiaries, aggregated locations identify geographical concentrations. In our study, we refer to the *Directory of Corporate Affiliations* (1997) as the main data source on MNC subsidiaries. The *Directory* identifies headquarters and up to four subsidiary levels of United States and international corporations. To make our data representative and to emphasize the top levels of corporation locations, we use both headquarters and first-level subsidiaries. In cases where multiple corporate subdivisions at the same level locate in the same city, we count the MNC subsidiary only once. Table 3 tabulates the 50 top-ranked world cities, including those centers with totals of more than 10 headquarters and first-level MNC subsidiaries among the 100 largest corporations listed in the *Fortune* (1996) Global 500.⁵

In contrast to Tables 1 and 2, Table 3 presents a far more accurate picture of the global urban hierarchy. Three distinguishing features of this table stand out. First, Table 3 unambiguously puts metropolitan New York (with 69 firms), Tokyo (66 firms), and London (50 firms) at the top of the global urban hierarchy. The largest MNCs tend to locate headquarters or first-level subsidiaries in these three preeminent world cities. The sheer dominance of New York, Tokyo, and London in the global economy is widely accepted, but it has not been supported unambiguously by previously generated empirical data. Our analysis verifies the dominance of these top three world cities. In particular, the position of Tokyo in headquarters data is moderated by the less pronounced presence of MNC subsidiaries, suggesting that Tokyo is indeed less internationally oriented than New York and London.⁶

Second, Hong Kong and Singapore, although widely recognized as important global centers, fail to register in Table 1 and do so only moderately in Table 2. These two Asian cities emerge quite prominently when first-level subsidiaries are included. Of the world's 100 largest companies, as represented by the 100 largest corporations listed in the *Fortune* (1996) Global 500, 40 have first-level subsidiaries in Hong Kong, and 35 have them in Singapore. These findings suggest that, although these two locales possess few MNC headquarters, they constitute important strategic locations for MNC global operations.

TABLE 3.—THE 50 TOP-RANKED CITIES, BY LOCATIONS OF HEADQUARTERS AND FIRST-LEVEL SUBSIDIARIES, AMONG THE WORLD'S 100 LARGEST CORPORATIONS^a

| Rank | Metropolitan area, country | Total number of headquarters and first-level subsidiaries |
|------|----------------------------|---|
| 1 | New York, USA | 69 |
| 2 | Tokyo, Japan | 66 |
| 3 | London, UK | 50 |
| 4 | Hong Kong, China | 40 |
| 5 | Singapore | 35 |
| 6 | Milan, Italy | 30 |
| 7 | Paris, France | 29 |
| 8 | Mexico City, Mexico | 28 |
| 8 | Madrid, Spain | 28 |
| 10 | Seoul, South Korea | 26 |
| 11 | São Paulo, Brazil | 25 |
| 11 | Zurich, Switzerland | 25 |
| 13 | Osaka, Japan | 24 |
| 14 | Beijing, China | 23 |
| 15 | Bangkok, Thailand | 22 |
| 15 | Brussels, Belgium | 22 |
| 15 | Chicago, USA | 22 |
| 15 | Frankfurt, Germany | 22 |
| 15 | Sydney, Australia | 22 |
| 20 | San Francisco, USA | 21 |
| 21 | Los Angeles, USA | 20 |
| 21 | Taipei, Taiwan | 20 |
| 23 | Buenos Aires, Argentina | 19 |
| 24 | Amsterdam, Netherlands | 18 |
| 24 | Caracas, Venezuela | 18 |
| 24 | Istanbul, Turkey | 18 |
| 24 | Toronto, Canada | 18 |
| 28 | Dusseldorf, Germany | 17 |
| 28 | Shanghai, China | 17 |
| 30 | Vienna, Austria | 16 |
| 31 | Bogota, Colombia | 15 |
| 31 | Jakarta, Indonesia | 15 |
| 31 | Manila, Philippines | 15 |
| 34 | Berlin, Germany | 14 |
| 34 | Houston, USA | 14 |
| 34 | Melbourne, Australia | 14 |
| 34 | Munich, Germany | 14 |
| 38 | Panama City, Panama | 13 |
| 38 | Santiago, Chile | 13 |
| 40 | Dublin, Ireland | 12 |
| 40 | Lisbon, Portugal | 12 |
| 42 | Athens, Greece | 11 |
| 42 | Dallas, USA | 11 |
| 42 | Rome, Italy | 11 |
| 45 | Barcelona, Spain | 10 |
| 45 | Budapest, Hungary | 10 |
| 45 | Guangzhou, China | 10 |
| 45 | Hamburg, Germany | 10 |
| 45 | Kuala Lumpur, Malaysia | 10 |
| 45 | Rio de Janeiro, Brazil | 10 |

^a Except for the United States, corporate headquarters locations are listed by metropolitan areas; for the United States, by Consolidated Metropolitan Statistical Areas (CMSAs) are used. When the MNC headquarters and the first-level subsidiaries locate in the same city, both are counted. When multiple first-level subsidiaries locate in the same city, however, only one is counted.

Sources: *Fortune* (1996); *Directory of Corporate Affiliations* (1997).

From this vantage point, worldwide concern over the plunge of the Hong Kong stock market becomes understandable.

Third, while 30 of the top 50 world cities identified in our data are located in North America, Europe (including southern and eastern Europe), Japan, or Australia, 20 centers are from developing areas. This distribution is a far cry from Table 1, in which only Seoul is included, or even from Table 2, in which only Hong Kong and Singapore make the top 20. Table 3 recognizes the role of Third-World primate cities—such as Mexico City, São Paulo, Bangkok, Beijing, and Taipei—in the articulation of the global economy. Table 3 also has a wider geographical scope, compared with the extremely narrow views of Tables 1 and 2. Among the top 50 world cities in Table 3, there are 7 in North America (United States and Canada), 20 in continental Europe, 15 in Asia and Australia, and 8 in Latin America. The presence of East Asian and Latin American cities provides evidence of these regions' rapid economic growth during the last two decades, along with their growing role in the global economy (Fig. 1).

We may divide the global urban hierarchy into three levels, the first two of which are indicated in Figure 1. The first level consists of what Knox (1994) called dominant world cities—New York, Tokyo, and London clearly stand out. While Hong Kong and Singapore may not sit in the first tier of dominant world cities, their status in MNC networks allows the two East Asian cities to lead the list of major world cities—a category of cities with between 20 and 40 important headquarters or first-level subsidiaries. Other major world cities include Milan, Paris, Mexico City, Madrid, Seoul, São Paulo, Zurich, Osaka, Beijing, Bangkok, Brussels, Chicago, Frankfurt, Sydney, San Francisco, Los Angeles, and Taipei.

Other cities in Table 3, not included in Figure 1, constitute national or subnational centers that, in our analysis, represent those with a high-level presence of between 10 and 19 MNC headquarters or first-level subsidiaries. Our list of secondary world cities thus includes such significant centers as Buenos Aires, Amsterdam, Caracas, Istanbul, Toronto, Dusseldorf, and Shanghai. We acknowledge the arbitrary division between the second and third levels, given that the data are continuous and do not possess any natural breaks. Still, Figure 1 presents a logical and systematic ranking of the most important world cities. It suggests a spatial organization of the global economy more consistent with widely perceived views and supported by solid empirical data. In our approach, the dominance of Tokyo, London, and New York is verified empirically, along with the significance of Hong Kong, Singapore, São Paulo, and major Third-World primate cities.

IMPLICATIONS OF THE STUDY

Despite recurring empirical divergences and conceptual ambiguities, the existence of a few key world cities has been largely accepted in urban and regional research as a standard feature of the contemporary global system. In reviewing the various methods of empirically identifying the global urban hierarchy, we find the use of MNC locations to be useful in depicting the global urban hierarchy, but the reliance on headquarters location alone to be problematic. A systematic bias toward top-heavy economies, dominated by large corporations, hinders a full and comprehensive conceptualization of the global sys-

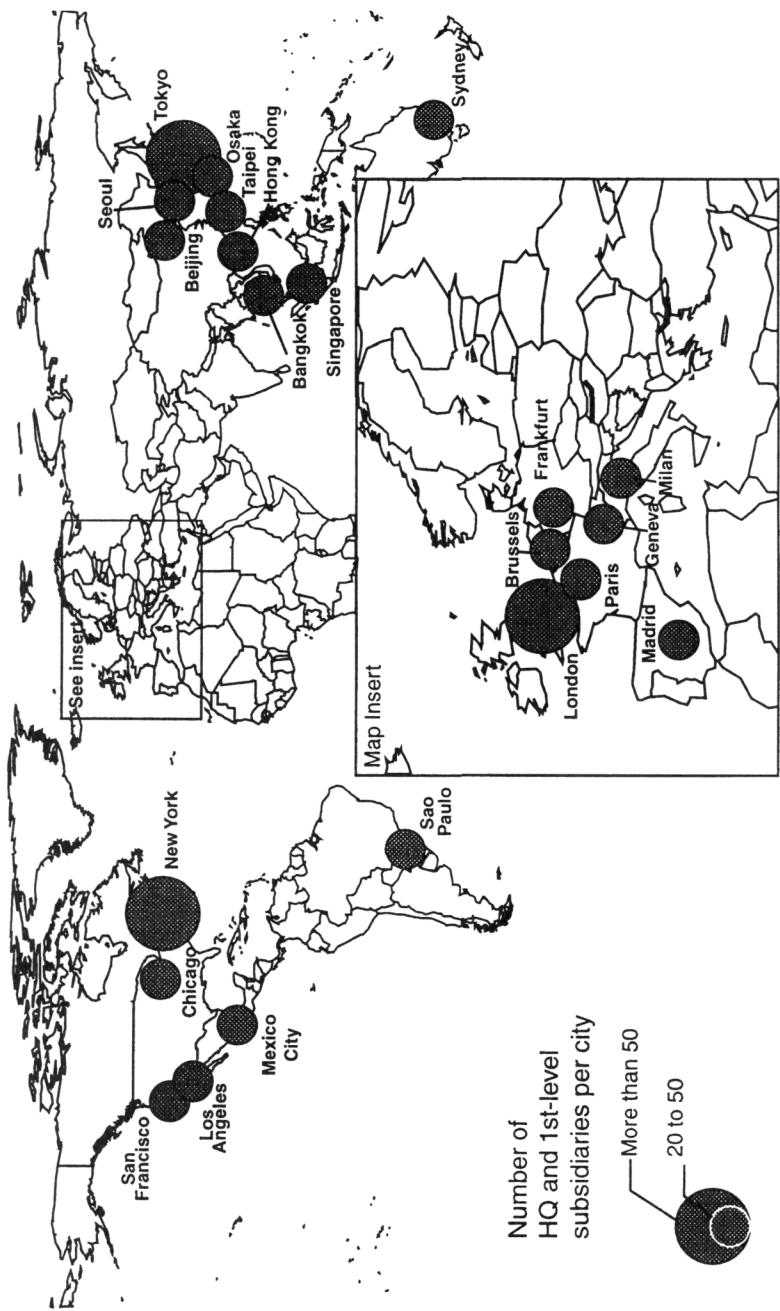


Fig. 1. World cities with more than 20 corporate headquarters and first-level subsidiaries of the 100 largest multinational firms. Sources: *Fortune* (1996); *Directory of Corporate Affiliations* (1997).

tem. The conventional world-city rankings thus overemphasize North American, European, and Japanese cities, marginalizing vast areas of the developing world. An alternative way of determining the importance of world cities, we argue, should include the locations of high-level subsidiaries of the largest corporations, which not only reflect the spatial strategies of the MNCs, but also take account of their most important interaction networks.

When we add MNC first-level subsidiaries to headquarters locations, we confirm the preeminent roles of Tokyo, New York, and London, as well as the prominence of cities in developing countries, including Hong Kong, Singapore, and other Third-World primate cities. Our refined analysis of high-level corporate locations identifies a range of world cities approximating the most widely perceived views of the spatial articulation of the global economy. By combining MNC headquarters and first-level subsidiary locations, our approach has several advantages: it accounts better for MNC global articulations, it is sensitive to the influence of national borders, and it adjusts for the variations in regional geography and political-economic organization.

We also realize that our approach remains partial in the sense that it relies exclusively on the economic framework of large MNCs, while taking little account of centers of political, cultural, and other influences. For example, Washington, DC, obviously figures as a preeminent center of political decision making, although the city is not an important MNC center. Our ranking, however, does not suggest that all world cities function in unidimensional fashion. In fact, each world city has particular types of global linkages and unique roles to play in the global economy. Case study analyses, based on economic sectoral data, may also further develop our method of identifying MNC locational patterns. Our approach to world cities contributes to a more nuanced understanding of the global urban hierarchy by emphasizing the most important MNC transaction networks as an index of regional economic interdependence.

NOTES

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²*Fortune* 500 is the oldest and most influential MNC survey. First established in 1955, *Fortune* magazine's annual survey long focused solely on the leading United States industrial corporations. By the 1990s, however, given the simultaneous rise of financial, communications, and other service-oriented businesses, along with the rising tide of economic globalization, the separation between industrial and service corporations became unrealistic. In 1995, *Fortune* began to include nonindustrial corporations in its annual survey of the world's largest corporations, now called the Global 500, based on gross annual revenues.

³MNC location was tallied first by city, and then by metropolitan area, in our analyses of the various surveys. In the case of the United States, in which corporate suburbanization is by far the most pronounced, the cities are listed by Consolidated Metropolitan Statistical Area (CMSA); in other countries, the problem of metropolitan decentralization is less severe, and metropolitan data simply include the central city and adjacent centers.

⁴Calculated by taking the sum of the revenues of the top 10 companies in the two countries, according to *Fortune* (1996), divided by their respective GNPs.

⁵Some world-city studies suggest assigning more weight to financial and producer-service corporations, relative to manufacturing corporations, based on the former's centrality in the global economy (Friedmann, 1995; Sassen, 1995). We do not make this distinction, however, because the

operation of MNC headquarters and regional headquarters is, in fact, similar regardless of their industrial sectors. Theoretically, these operations all belong to producer services, with key operations in finance, management, research and development, and marketing. For example, it is artificial to differentiate between the top-level functions of a manufacturing corporation as opposed to an insurance corporation. As a result, we simply use the 100 largest firms in the *Fortune* (1996) ranking.

⁶New York's role in the recent East Asian debt crisis provides further evidence of the city's centrality in global finances. As New York—not London, Tokyo, or Hong Kong—became the favorite site for international financial negotiation, it confirmed “a single, shared global insight: New York is where the money is” (Johnson, 1998, p. B-2).

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