Rethinking Attributes of a 'Global' City
The Case of the United States

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Notwithstanding the fact that many of the U.S. standard metropolitan areas (SMAs) seek 'global' status, most recent research on the world's system of 'global cities' refers to the upper level segment of that system, in which but a few large U.S. SMAs are mentioned. Four indices and four variables, compiled in order to determine which of the sixty largest U.S. SMAs will best meet the 'global' challenges in the 21st century, are analyzed in order to portray the nature of U.S. 'global' city systems. The International Presence index, denoting the existence of decision-making and control and of producer services functions in a metropolis, which correlated positively with the four 'global' environmental attributes, correlated poorly with the Manufacturing Competitiveness index of a metropolis. Both indices scored poor correlation coefficients with the subjective Pro-business Attitude rank of an SMA, listed among the leading attributes defining a 'global' city environment. With the increasing number of cities aspiring for a global scope of activities, more research is needed in order to define the best list of variables necessary to define which of the urban agglomerations involved will best meet the 'global' challenges in the 21st century.

Keywords: 'global' city, city system, international presence, producer services, decision making and control, manufacturing competitiveness, pro-business attitude.

In their article 'The future of Urban America in the Global Economy', Stegman and Turner (1996) assert that 'throughout the world, the integration of the global market place is causing a fundamental shift in the way nations think about urban economies', and that 'the U.S. economy is increasingly a system of metropolitan[1] centered regional economies... These metropolitan regions, though strongly interdependent, compete with one another and with urban centers throughout the world'. Stegman and Turner (1996) further argue that 'today, Detroit's real competition is not its suburbs, but the metropolitan regions of Baden-Wurtemburg in Germany and Kyushu in Japan'.

Survey data compiled by MS&B (Moran, Stahlb & Boyers) in 1992 for *Fortune* magazine (Saporito, 1992) is examined and analyzed with the objective of

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revealing which of the sixty largest U.S. metropolises (defined as SMAs, standard metropolitan areas) best meet the challenges of global competition in the 21st century. Among the many elements of the 'global' city phenomenon, at issue here is its functional organization in the U.S. Although this country covers a huge and diversified territory and many of its cities, by practicing a development strategy of 'thinking globally acting locally' (Gappert, 1989; Harvey, 1989), seek 'global' recognition (Fry et al., 1989; Barnes and Ledebur, 1991; 1994; Ledebur and Barnes 1993; Stegman and Turner, 1996), only a few large U.S. SMAs are mentioned among those that actively belong to the world's system of 'global' cities (Friedmann, 1986; 1995).

The objective of this paper, using the U.S. as a case study, is to challenge the notion that but a few 'global cities' act as the hard core of the world's system of cities dominating the command and control functions and their spatially linked producer and business services sectors. Instead, the conception of a 'global' city is advanced quantitatively, to include a few more cities in different locations and in size in this prestigious category of cities, and qualitatively, to explore the possibility to introduce other urban economic sectors, primarily advanced manufacturing, into the 'global' city's list of functions. An effort is made to assess the meaning and merit of the subjective 'pro-business attitude' of a metropolis, named among the leading attributes describing the 'global' city status.

THEORETICAL REASONING

Of the many properties of a 'global' (world) city entity pointed out by Friedmann (1986; 1995) and extended, among others, by King (1990), Sassen (1991), and Shachar (1990; 1994), of significance are its 'command and control' functions and its 'business-service' industries, referred to as 'advanced' or 'producer' services by Goldberg and Davis (1988) and by Sassen (1991), and as the 'informational sector' by Hall (1991). These sectors, known as 'quinary' and 'quaternary' respectively (Harper, 1982), lead today's 'post-industrial' economy. Thus, besides having large population size, a 'global' city hosts a set of high-level urban functions such as major financial institutions, large, multi-locational/national service firms, and command centers (headquarters) of transnational corporations (TNCs) and of international institutions. A 'global' city is also expected to exhibit rapid growth of its quinary and quaternary sectors, which are also expected to reveal a vivid innovative capacity (Sassen, 1991). In addition, a city claiming 'global' status ought to have a busy international airport, possess a sophisticated system of communications, offer high-quality infrastructure, and provide high-level privately and publicly supported services (Goldberg and Davis, 1988). Furthermore, a city that seeks 'global' standing ought to show strong local 'willingness' to take charge of its emerging developments (Goldberg and Davis,

1988), to be capable of adapting to changing circumstances, and to demonstrate 'self -determination' in creating its own economic future (Harvey, 1989; Hall, 1991). Stegman and Turner (1996) add another dimension, the ability of an urban 'place' to narrow as much as possible the widening social disparities between its central-city and suburbs, as a factor in determining the ability of an urban 'place' to successfully compete for an active role in the 'global' economy. To this end, they assert, an effective urban policy aimed at rebuilding the long-term competitiveness of cities and metropolitan regions through strategic investments in both human and physical capital is a prerequisite for a 'place' to become a 'global' city. Finally, in bridging the widening gap between 'globalization strategies' on the one hand, and 'localization' needs on the other (Dicken, 1993), decision-makers of a 'globally'-oriented community ought to apply a sincere policy of 'thinking globally, acting locally' (Gappert, 1989).[2]

Attempts to define 'places' affiliated with the 'global' city system produced a very short list, including the upper tier of that system, either on a global scene (Friedmann, 1986; 1995; King, 1990; Sassen-Koob, 1986; Sassen, 1991) or at the level of major world regions (Johnson, 1991). While Sassen refers to the upper three 'global' cities only—New York, London and Tokyo, Friedmann (1986) proposes a two-tier system: primary and secondary[3] (Table 1), and Friedmann (1995) extends his list to include four types of spatially articulated 'world' cities (Table 2). Friedmann's list does not have a balanced regional distribution of 'global cities'. Western Europe, for example, despite its relatively small territorial space, possibly as a result of its political division into many nation states, had nine 'global' cities in the list of 1986, five of which were at the 'primary' level. In Friedmann's 1993 list, Europe accounted for eleven 'global' cities; eight were 'important 'national' and 'sub-national' centers. At the other extreme, North America, including the U.S. and Canada, had only seven cities of 'world' status (four at the 'secondary' tier level) in Friedmann's 1986 list; eleven were in the 1993 list (eight being sub-national centers).

Table 1: 'World' cities by region (Friedmann's 1986 list).

World Region	*Primary Tier*	*Secondary Tier*	*Total*
North America	3	4	7
Western Europe	5	4	9
Latin America	1	4	5
Southeast Asia	2	5	7
Other Regions	–	2	2
Total	11	19	30

Source: Friedmann, 1986.

Table 2: 'World' cities by region (Friedmann's 1993 list).

	Status of Spatial Articulation				
World Region	*Global Financial*	*Multi-National*	*Important National*	*Sub-National*	*Total*
North America	1	2	–	8	11
Western Europe	1	2	3	5	11
Latin America	–	–	2	–	2
Southeast Asia	1	1	1	2	5
Other Regions	–	–	1	–	1
Total	3	5	7	15	30

Source: Friedmann, 1995.

Many metropolitan cities all over the U.S., by employing a development strategy of 'thinking globally, acting locally', have actually engaged in 'international diplomacy' (Fry et al., 1989). In so doing, a handful of U.S. metropolises either seek 'global' city status, or have already won it. However, no up-to-date data are available to reveal the real performance of U.S. metropolitan regions in the era of the emerging 'global shift'. The best available classification is Noyelle's (1985), classifying 166 U.S. SMAs into four types reflecting their size and their economic base at the end of the 1970s. At the top of the list are the 36 Diversified Service Centers encompassing 34% of the nation's population and controlling most of the finance, decision-making and technology-oriented functions of the U.S. economy. Considering the magnitude of their economic base, these Diversified Service metropolitan 'places' best correspond to the perceived images of a today's 'global' city.

Implicit too in some of the 'global' city literature is that a globally -oriented urban 'place' might also hold supremacy in high-tech and R&D-oriented manufacturing industry activities. Yet thanks to informational technology, allowing spatial detachment between management and production, the productive segments of manufacturing have dispersed geographically to the 'urban fringe' of the metropolis while their management activities have moved to central-city's 'front office' buildings, favoring CBD (central business district) sites (Wood, 1974; Gottmann, 1983; Sassen, 1991; Hartshorn, 1992). The important role of manufacturing in the process of globalization is advanced by Dicken (1993), who implies that for virtually the whole of the post-World War II period the major driving force in the 'global shift' has been the manufacturing sector exhibiting rearticulation and reorganization of its 'production chain' known also as the 'value added chain'. Only recently has the growth of services taken off (Dicken,

1993 citing GATT, 1989), manifesting the augmenting linkage between manufacturing and services in the 'global' economy (Dicken, 1993).

Recent studies, however, indicate that the induced expansion of the 'quaternary' service sector from the mid-1970s to the mid-1980s (Hartshorn, 1992) is over, resulting in excessive vacant office space, thus demanding a real reduction in new office space construction (Brich, 1986). One may further argue that the era of manufacturing growth is not over yet, and that some of the expected growth in the 'quinary' and 'quaternary' service sectors is conditional on future increase in manufacturing. Since the overwhelming bulk of direct investment by the manufacturing community, primarily TNC, has taken place in the form of a 'balanced', complex 'cross-investment' within the developed market economies, including the U.S.A. (Dicken, 1993), the manufacturing competitiveness of any U.S. 'urban place' will become a crucial factor in determining its fate in meeting global challenges in the next century.

If our assumption is correct, then a nation's 'world' city network, a segment of a world system of 'global' cities of the 21st century, will possess a mixed role, the elements either complementing or overlapping each other. It will include a network of urban nodes engaged in advanced 'quinary' command and control, and of sophisticated 'quaternary' financial and producer service functions, and a system of advanced centers of modern production, presumably of high-technology and 'flexible manufacturing' systems, which will search for international competitiveness and aspire a 'global' city status (Dicken, 1993).

DATA BASE AND HYPOTHESES

Four indices and four variables, compiled and defined by MS&B for *Fortune* magazine in 1992 (Saporito, 1992), are examined. The indices were developed by MS&B using published statistics and on the basis of a survey questionnaire received from 900 business executives. The questionnaire was mailed to 6,000 executives, 100 in each one of the U.S. 60 largest SMAs, whose names were selected from *Fortune* subscribers. The 900 who responded constitute 15% of the sampled executives, representing a cross section of the business executive community. Inter alia, the interviewed executives were asked to select and rank five attributes from a predetermined list of factors, which are assumed to be 'the most significant in selecting a city that meets the challenges of competing in a global economy', and to name and rank three SMAs (metropolises) which, according to their [the executives'] best judgment, retain 'the best environment' leading to this end. Table 3 shows the rank order and grouping of the factors that are assumed to be essential for global competitiveness. Observe how the majority of the critical factors, notably those among the upper-level factors and the intermediate-level groups, correspond to previously prescribed qualities of a 'global' city.

Table 3: Factors indicated as important for global competitiveness by the responding business executives (n=900).

Factors	%
High-level Factors	
1. Quality of labor	57
2. Pro-business attitudes	39
3. Quality of public education	36
4. Good air transport service	34
Intermediate-level Factors	
5. Adequate transportation infrastructure	22
6. Low cost of living	21
7. Presence of international business firms	21
Low-level Factors	
8. Presence of a university or a college	15
9. Presence of international banks	15
10. Presence of high-tech manufacturing	14
11. Port access	14
12. Good labor-management relationships	12
13. Stable fiscal conditions	12

Source: Saporito, 1992.

Each one of the four indices compiled and defined by MS&B possesses a different research value and portrays a different perceived attribute of a 'global' urban entity. The first two are made up of a series of 'objective' properties of what seems to denote an operational 'global' environment, while the latter two are 'subjective' measures, disclosing the perceived attainments of an SMA (a metropolis), enabling it to evolve into a 'global' urban place. The indices are:

1. An *International Presence Index* (IPI), measuring the scope and intensity of the 'decision-making and control' and of the 'professional service' functions of an SMA. The index was defined on the basis of the following attributes: the number of foreign banks; the number of foreign consulting firms; the percent of labor employed in foreign-owned firms; and the percent employed in business services outlets.
2. A *Manufacturing Competitiveness index* (MCI), expressing the SMA's advanced, globally-oriented manufacturing capacity. It was created on the basis of five attributes: the percent of manufacturing goods exported; the percent of manufacturing labor employed in high-tech industries; the percent change in high-tech employment; the percent change in total manufacturing employment; and the total manufacturing value added per employee.

3. A *Pro-business Attitude rank* (PBR) is the rank order of SMAs named most among the top three SMAs by the business executives as possessing the 'best environment to meet the challenge of competing in a global economy'.
4. A *Pro-business Attitude rank 1*, (PBR1) indicates the number of times an SMA was named 'number one' in the above ranking process.

Four variables denote the attributes of a 'global' environment. They are: the 1992 population size of the SMA (PSZ); the number of daily international flights serving the SMA's (DIF); the percent of the SMA's skilled manufacturing labor (PSL); and the percent of foreign labor employed in the SMA (PFL).

Caution is needed when applying the subjective 'pro-business attitude' variables. Note that MS&B reported that in seven SMAs, Charlotte, Seattle, Atlanta, Chicago, Salt Lake City, Houston and Portland, more than 50% of the interviewed business executives revealed strong local patriotism by naming their own city as number one in terms of 'pro-business attitude'. This might have created some sampling problems with possible negative effects on the results.

Three hypotheses are examined:

1. The IPI and the MCI indices, prescribed to express the inherent multi-facet qualities of an SMA that expects to meet the emerging challenges of the next century's 'global' economy, tend to complement each other, thus revealing a strong and positive linear relationship between them.
2. The IPI and the MCI indices, reflecting the prevailing 'global' attributes of an SMA, are strongly and positively correlated with the four variables that are expected to reflect the 'global' environment of an SMA.
3. Since a 'Pro-business Attitude' in a 'place' (SMA) is a crucial factor in determining the intrinsic capacity of the 'place' to compete successfully in what seems to be the 'turbulent' global environment of the next century, the perceived PBR and PBR1 of the SMAs are strongly and positively correlated with the SMAs' IPI and MCI, as well as with the four variables reflecting the SMAs' 'global' environment.

ANALYSIS

It was hypothesized that the IPI and MCI, describing the intrinsic objective potentials of a metropolis to meet the 'global' challenges of the future, complement each other and exhibit a strong and positive linear relationship. In resolving this hypothesis, a regression analysis was carried out with MCI as dependent variable (Y) to IPI (X). The analysis, confined to 95% level of confidence, resulted in r = (–)0.072, and where

$$Y = 102.3 - 0.039X_1.$$

The small and negative value of r, therefore, implies that the two 'objective' indices, aimed at describing the latent potential of an SMA to sustain the challenges of the emerging 'global' shift, do not complement each other. By rejecting the first hypothesis we assume, at this point, that the IPI and the MCI each represents a different 'universe' of qualities of a national (in this case American) 'global' city system, and that each of the 'world' city universes (sub-systems) can endure alongside the other on its own merits. This assumption, namely that the IPI and the MCI each describes a different potential of a 'place' to maintain a 'global' city standing, is examined in the next hypothesis against the four variables that are assumed to denote a 'global' environment.

In the second hypothesis, the IPI and the MCI indices as dependent variables Y_1 and Y_2, respectively, reflecting the prevailing 'global' nature of an urban place, are assumed to be firmly and positively correlated with the four 'global' environment attributes (PSZ, DIF, PSL, PFL) as independent variables $X_1 - X_4$. Table 4 shows the values of the simple R^2 and the multiple R^2, revealing how IPI scores a multiple $R^2 = 0.760$, thus indicating that the four 'global' environment variables combined explain 76% of the variance in IPI among the 60 U.S. SMAs.

Table 4: Values of R^2 and of multiple R^2 with IPI and MCI as dependent variables to PSZ, DIF, PSL and PFL.

Independent Variables	*Dependent Variables* IPI Y = 1	MCI Y = 2
X_1 Population size of an SMA (PSZ)	0.621	0.028
X_2 No. of international daily flights (DIF)	0.541	0.048
X_3 % of skilled labor (PSL)	0.093	0.180
X_4 % of foreign employed (PFL)	0.170	0.090
Multiple R^2	0.760	0.333

(All R^2 values are significant at $\alpha = 0.05$)
Source: Compiled by the author.

Among the individual independent variables, large simple R^2 are registered for (PSZ) and for (DIF), $R^2 = 0.621$ and 0.541 respectively, to indicate that the size of a metropolis and the viability of its international airport are important factors in creating a 'global' scope of activities. Of some value too is the PFL, with simple $R^2 = 0.170$, divulging the role of foreign employed persons in creating a 'global' urban environment. Observe too how all of the independent variables ($X_1 - X_4$) disclosed a positive relationship with IPI, when

$$Y_1 = -4.00 + 7.98X_1 + 0.19X_2 + 1.18X_3 + 4.42X_4.$$

The MCI, by contrast, scored small multiple R^2, explaining only 33% of the variance of MCI among the 60 U.S. SMAs, and the multiple correlation equation of Y_2 is

$$Y_2 = 16.75 - 0.45X_1 - 0.13X_2 + 1.66X_3 - 2.97X_4.$$

Three variables, PSZ (X_1), DIF (X_2) and PFL (X_4), exhibit a negative relationship with MCI. Yet their negative impact is negligible, manifested by the small R^2 values of the three variables. Only PSL, showing a positive sign and explaining 18% of the variance in MCI ($R^2 = 0.180$), testifies to the relevance of skilled labor in creating a manufacturing-oriented urban environment.

At this point one may infer that a 'place' revealing strong MCI does not necessarily exhibit strong presence of 'global' environment attributes. To this end, Table 5, showing a set of coefficients of concentration, tells us more about the relationships between the IPI and the MCI indices, and between them and the population size of the SMAs (PSZ). The coefficients of concentration were calculated on the basis of a cross-tabulation made of pre-established sub-groups of each one of the above indices and of the PSZ variable.[4] Only the profound coefficients' values, those larger than 1.25, are shown in Table 5. Note how SMAs with very large IPI index tend to have small and very small index of MCI. A few of those having very large MCI tend also to have large IPI. In addition, SMAs with a very large and large IPI tend to be very large in their population size too. By contrast, SMAs with very large and large MCI are associated with medium-size SMAs.

The second hypothesis is accepted without reservation for IPI. This implies that a metropolis, by having a strong *international presence,* manifested by the scope and intensity of its 'decision-making and control' and of its 'professional service' functions, also displays the solid presence of environmental attributes of a 'global' urban entity. More research is needed in order to explain the failure of urban 'places' with strong MCI to score high in their correlation with the 'global' environment attributes. One possible explanation is that thanks to telecommunication a viable manufacturing community can evolve in spatial separation from its decision-making headquarters' function, usually located at the core of an international, national or regional center, in strong functional symbiosis with its supporting producer service community (Wood, 1974; Gottmann, 1983; Sassen, 1991; Hartshorn, 1992).

However, the fact that MCI scored an $R^2 = 0.333$ in its multiple correlation with the four 'global' environment attributes requires comment. A multiple $R^2 = 0.333$, explaining 33% of the variance in MCI, is small, but still a respected value in much social science research. It might suggests that some SMA with a high MCI index might disclose a potential of being a 'place' with 'global' status. Such a 'place' can be an urban agglomeration which, in addition to its strong

presence of global attributes, and thus high IPI, can also possess an advanced manufacturing base.

Table 5: Coefficients of concentration of IPI and MCIindices and for PSZ variable by size groups (coefficients > 1.25 only).

	Sub-Groups of the MCI Index			
Sub-groups of the IPI Index	*Very large*	*Large*	*Small*	*Very small*
Very large	–	–	1.49	2.45
Large	1.50	–	–	–
Small	–	–	–	–
Very small	–	–	–	–

'Global' Indices Sub-Groups of the IPI Index	*Size Sub-groups of SMAs (PSZ)*		
	Very large	*Large*	*Small*
Very large	4.90	–	–
Large	1.61	–	–
Small	–	–	1.27
Very small	–	–	1.46

Sub-groups of the MCI Index	*Very large*	*Large*	*Small*
Very large	–	2.00	–
Large	–	1.25	–
Small	1.86	–	–
Very small	–	–	–

Source: Compiled by the author.

The third hypothesis examines the meaning of the perceived 'pro-business attitude' rank defined by PBR and PBR1 indices. Note that the conception of 'pro-business attitude' or 'pro-business climate' (Harrison, 1984) scored second in importance among the business executives as a critical factor for global competitiveness (Table 3). Recall too that such attitudes, associated with the concept of 'thinking globally, acting locally' (Gappert, 1989), reflect the emphatic 'willingness' of local leaders to take charge of the emerging 'global' developments' (Goldberg and Davis, 1988; Harvey, 1989), and mirror the self-determination of the decision-makers in creating their own [place's] economic future (Hall, 1991). It was hypothesized, therefore, that the perceived PBR and PBR1 were strongly and positively correlated with their IPI and MCI, as well as with the four 'global' environment variables PSZ, DIF, PSL, and PFL.

Table 6 shows the simple and multiple R^2 scores for PBR and PBR1 as dependent variables (Y_3 and Y_4) to IPI and MCI (X_5 and X_6) and to the above four environment attributes (X_1 through X_4) as independent variables. Observe how the two 'global' indices IPI and MCI respectively explain only 6% and 32% of the variance of PBR and PBR1 among the 60 SMAs. Most of the value of R^2 of the PBR1 is attributed to IPI: 31.2%. The values of Y_3 and Y_4 are

$$Y_3 = 32.45 + 0.15X_5 + 0.56X_6$$

and

$$Y_4 = 38.24 + 0.56X_5 + 0.03X_6$$

A relatively small multiple R^2 was yielded by the 'global' environment attributes, explaining slightly over 30% of the variance of the PBR1 among the 60 SMAs, and only 14.4% of the PBR. In the PBR1, the size of the metropolis and its international airport registered the largest simple $R^2 = 0.239$ and 0.275, respectively. The values of Y_3 and Y_4 in the regression equation are

$$Y_3 = -38.24 + 2.82X_1 - 0.05X_2 + 1.46X_3 + 0.24X_4$$

and

$$Y_4 = -24\ 29 + 0.0001X_1 + 0.32X_2 + 0.61X_3 - 0.03X_4$$

Table 6: Values of R^2 and of multiple R^2 with PBR and PBR1 as dependent variables to IPI, MCI, PSZ, DIF, PSL and PFL.

Independent Variables	*Dependent Variables* PBR $Y=3$	PBR1 $Y=4$
X_5 International presence (IPI)	0.048	0.312
X_6 Manufacturing competitiveness (MCI)	0.018	0.005
Multiple R^2	0.060	0.320
X_1 Population size of an SMA (PSZ)	0.066	0.239
X_2 No. of international daily flights (DIF)	0.020	0.275
X_3 % of skilled labor (PSL)	0.101	0.023
X_4 % of foreign employed (PFL)	0.005	0.021
Multiple R^2	0.144	0.303

(all R^2 values are significant at $\alpha = 0.05$)
Source: Compiled by the author.

Note how X_2 (DIF) in Y_3 and X_4 (PFL) in Y_4 show a negative sign, indicating that PBR is negatively correlated with the number of daily international flights and that PBR1 is negatively correlated to the percent of foreign employed.

Cross-tabulation analysis, aimed at creating coefficients of concentration (Table 7), further discloses the esoteric nature of the perceived subjective PBR and PBR1 indices. The most striking fact is that the two indices do not maintain the same crosstab distribution of coefficients of concentration. Very large and large IPI are associated with very small PBR, but at the same time they are concurrent with very large and large PBR1. Similarly, very large and very small MCI are concurrent with very small PBR but also with large and very large PBR1.

Table 7: Coefficients of Ccncentration of PBR and PBR1 indices with IPI and MCI indices (coefficients > 1.25 only).

	Sub-groups of the PBR Index			
Sub-groups of the IPI Index	*Very large*	*Large*	*Small*	*Very small*
Very large	–	–	–	1.51
Large	–	–	–	1.76
Small	–	–	1.50	–
Very small	–	–	1.51	–
Sub-groups of the MCI Index	*Very large*	*Large*	*Small*	*Very small*
Very large	–	–	–	1.41
Large	–	–	–	–
Small	–	–	–	–
Very small	–	–	–	1.51
	Sub-groups of the PBR1 Index			
Sub-groups of the IPI Index	*Very large*	*Large*	*Small*	*Very small*
Very large	4.29	2.14	–	–
Large	1.88	1.25	–	–
Small	–	–	1.29	–
Very small	–	–	–	2.45
Sub-groups of the MCI Index	*Very large*	*Large*	*Small*	*Very small*
Very large	–	2.00	–	–
Large	–	–	–	–
Small	–	–	–	–
Very small	2.86	1.43	–	–

Source: Compiled by the author.

The third hypothesis, namely that the perceived PBR and PBR1 are strongly correlated with their IPI and MCI and with the four 'global' environment variables, is rejected. By rejecting this hypothesis, and this is particularly true with respect to PBR, the widely sought 'pro-business attitude' and 'good business climate' qualities of a metropolis turn out to be extremely questionable. However, before one 'throws out the baby with the bath water' one ought to assume the possibility that interviewing and sampling problems were involved (as indicated earlier). Nevertheless, the role of 'pro-business attitude' as a measure of 'global' environment attribute demands more research.

CONCLUSIONS

The prime objective of this paper was to challenge, using the U.S. as a case study, the notion that but a few urban 'places' qualify for 'global city status. These are expected to act as the hard core of the world's system of cities dominating the command and control functions and their spatially linked producer and business services. The paper thereby sought to advance the concep of a 'global' city both quantitatively and qualitatively. Quantitatively, to include in this prestigious category of cities many more cities of various locations and sizes, and qualitatively, to try to introduce other urban sectors, notably advanced manufacturing, to the 'global' city's list of functions.

The results of our analysis is that the second objective, namely to expand the notion of a 'global' city to include urban 'places' engaged in advanced manufacturing, failed to yield the expected results. Recall that the IPI index, denoting *International Presence* of 'quinary' and 'quaternary' urban functions, correlated poorly with MCI, marking the *Manufacturing Competitiveness* of a metropolis. This failure might be due either to the quality of data used (data compiled by MS&B for *Fortune* magazine) or to conceptual reasoning, namely that modern manufacturing production activities have recently been diffused to smaller urban agglomerations in non-metropolitan areas, while the headquarters functions are located, thanks to telecommunication technology, in major urban centers. Furthermore, of the four 'global' environmental attributes, two seem to have some value in describing the potential of a U.S. SMA in competing in today's turbulent 'global shift': population size (PSZ) and the vitality of its international airport (DIF). The two other attributes, skilled labor (PSL) and foreign employed (PFL), on the other hand, do have a certain, though negligible, impact on the *International Presence Index* IPI. Neither attribute, however, reveals a strong effect on the MCI, or on the subjectively defined 'pro-business attitude' indicators.

Table 8 reveals another view of the issues discussed. It displays the highest and the lowest groups of U.S. SMAs ranked according to the four indices. The seven

highest SMAs ranked by their IPI tend to be large in size (four out of seven belong to the top group), but smaller SMAs are also included among the leading seven SMAs. The lowest group defined by IPI, on the other hand, includes SMAs of the smallest size group only. Among the highest group ranked according to their MCI, only the second and the third size groups of SMAs are shown. None, however, corresponds to any SMAs of the top seven having high IPI. Interesting too is the fact that only one SMA, Houston, appears among the top nine SMAs determined by their PBR, and only two with high MCI—Raleigh-Durham and Forth Worth—are mentioned. The array is much improved with respect to the PBR1, where three and one of the top SMAs ranked by IPI and by MCI, respectively, are included among the top six. Once again, SMAs ranked by their perceived 'pro-business attitude' are found to be alien to the other two systems of SMAs ranked on the basis of their more objectively measured 'potential' of 'meeting the global challenges in the 21st century'. It is proposed that more research is required to obtain a more meaningful list of attributes necessary to characterize, in subjective or objective terms, the nature of the concepts of 'good business climate' and of 'pro-business attitude' of an urban 'place'.

In his article 'The Changing Organization of the Global Economy', Dicken (1993) suggests that we are often led to believe that the world 'is becoming increasingly homogenized economically, and perhaps culturally too'. There is no doubt, Dicken claims, 'that profound changes have been, and are occurring in the world. But the label 'globalization' is too often applied very loosely and indiscriminately to imply a totally pervasive set of forces and changes with all-embracing effects on countries, regions and localities'. Dicken concludes that 'we need to adopt a more discerning and less simplistic approach in articulating the nature and processes of globalization, and in assessing its implications'.

The attributes of a 'global' city, at least those employed in this paper to analyze the U.S. 'global' city system, are too vague to incorporate all possible conceptual elements. Crook et al. (1992), citing Lyotard (1984) suggest 'that society is moving into postindustrial age while culture into postmodern age, but the two operate in tandem'. Both post-industrial development and post-modern hyper-differentiated life-styles and cultures imply that current attributes demarcating 'global' competitiveness are not inclusive. They should include other elements such as social, cultural, leisure, and occupational, and work status and conditions, as well as other elements meaningful for our post-industrial and post-modern times. Add to this that the U.S., the case under consideration, is one of the most advanced among the *triad* of the world *mega markets* defined by Dicken (1993). Yet if the task of delimiting the notion of the U.S. 'global' city system is so complex, how should one outline the concept and attributes of a 'global' city system of smaller countries and of less advanced economies?

Table 8: Rank order of U.S. SMAs by 'global' indices: The highest and the lowest ra

The International Presence Index IPI (The Upper S.D.*)	The Manufacturing Competitiveness Index MCI (The Upper S.D.*)	The Pro-Business Attitude Rank PBR (The first 9 SMAs)	The Pro-Business Attitude Rank 1 PBR1 (The Upper S.D.
The Highest Groups of SMAs			
New York (1)	Raleigh-Durham (3)	Raleigh-Durham @	Atlanta
Los Angeles (1)	Phoenix (2)	Houston **	Seattle
Chicago (1)	Orlando (3)	Indianapolis	New York @
Houston (2)	Austin (3)	Atlanta	Dallas
San Francisco (3)	San Jose (3)	Columbus	Chicago **
Washington D.C. (1)	San Diego (2)	Salt Lake City	San Francisco **
Miami (3)	Oakland (2)	Forth Worth @	
	Forth Worth (3)	Nashville	
		Charlotte	
The Lowest Groups of SMAs			
The International Presence Index IPI (The Lowest S.D.*)	The Manufacturing Competitiveness Index MCI (The Lowest S.D.*)	The Pro-Business Attitude Rank PBR (The Last 10 SMAs)	The Pro-Business Attitude Rank 1 PBR1 (SMAs Scored Zero)
Sacramento (3)	New York ** (1)	Honolulu	Sacramento
Charlotte (3)	San Francisco ** (3)	Sacramento	Oakland @
Rochester, NY (3)	Albany (3)	Oakland @	Hartford
Dayton (3)	Charlotte (3)	San Diego @	Albany
Birmingham (3)	Birmingham (3)	Hartford	New Orleans
Las Vegas (3)	Pittsburgh (3)	Albany	Dayton
Grand Rapids (3)	Las Vegas (3)	New Orleans	Sacramento
		Detroit	Greensboro
		San Francisco **	
		Minneapolis St. Paul	

* S.D. = Standard deviation. ** Also found in the IPI top group.
@ Also found in the MCI top group. In parentheses (1) The population sub-size group.
Source: Saporito, 1992.

The 'world system of global cities' will not continue to remain an exclusive club of a few very large, centrally located cities. Instead, it will evolve into a complex, in many cases overlapping, system of 'places' (metropolises). This complex of overlapping systems will include cities in different 'worlds', of different sizes, and of different, specialized or diversified, economic base. 'Places' fortunate enough to bridge their internal gap between those that have and those that

have not, and 'places' that are motivated enough to mobilize their inherent resources and to adopt a strategy of 'thinking globally, acting locally', will most likely join the club.

Although the last two decades have signaled a dynamic increase in the 'quinary' and 'quaternary' sectors of services at the expense of declining manufacturing, it is believed that the era of the leading role of manufacturing in the world's economy is not over yet. Likewise, it is expected that most future growth in the 'quinary' and 'quaternary' service sectors will be the outcome of multiplier effects generated by a modern, post-industrial flexibly organized manufacturing system, busy in the production of highly customized goods, produced by high technology, and deeply involved in 'global' networks of innovative systems engaged in sophisticated R&D. The manufacturing competitiveness of an 'urban place', therefore, will become a crucial factor in determining its fate in meeting global challenges in the next century. Yet the indices analyzed in this study, notably the MCI, do not tell the whole story of what a 'globally' competitive urban place is, and what other functions it should have in order to meet, as a post-industrial manufacturing center, the challenges of the next century.

We should admit that the nature of the evolving 'world system of world (global) cities' is much more diversified and complex than initially conceived. It seems that this system springs out of a multi-dimensional interplay between 'globalization' strategies on the one hand, and 'place'-oriented strategies on the other. Cities and regions, by 'thinking globally acting locally' (Gappert, 1989), by adopting a locally-oriented development strategy (Harvey, 1989), and by initiating an investment program in both human and physical capital (Stegman and Turner, 1996), might negotiate our 'turbulent' era of 'global shift' successfully.

NOTES

1. In this paper, the terms 'global' and 'world' cities mean basically the same. The notion of a 'city' however, connotes what Herbert and Thomas (1990) refer to as a 'place', namely the metropolis, which is the 'true' urban 'place'.
2. The concept of 'thinking globally, acting locally' was the theme of a conference held by the *Future Society* in Toronto in 1980 Gappert, 1989); also refer to Harvey (1989).
3. The list includes 'global' cities of the 'core' and 'semi-peripheral' countries, and of three size groups of population ranging from 1 million to 20 million.

4. The sub-groups, four for the IPI and the MCI indices and three for the PSZ, were determined on the basis of their standard deviation(s) distance above and below their mean.

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