URBAN COMPETITIVENESS ASSESSMENT IN DEVELOPING COUNTRY URBAN REGIONS: THE ROAD FORWARD

Paper prepared for Urban Group, INFUD*
The World Bank, Washington D.C.
July 17, 2000

By:

Douglas Webster
Consulting Professor
Asia / Pacific Research Center
Stanford University

and

Larissa Muller
PhD Student
Dept of City and Regional Planning
University of California, Berkeley

* Initially presented at the World Bank Course "Towards a Methodology for Conducting City Development Strategies" in Washington D.C. on March 29, 2000.

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Douglas Webster and Larissa Muller

1. INTRODUCTION

The paper will review approaches and techniques, those commonly employed, as well as newly emerging ones, to assess the competitiveness of urban regions. The relevance of these techniques to developing country regions will be assessed, taking into account the fact that assessment approaches deployed need to reflect the population size of urban regions, and a given urban region's position on the development trajectory. In particular, the importance of human resources and institutional/ cultural environments will be explored, as these factors underlie urban competitiveness. Given increasingly rapid socio-economic and technological change associated with globalization, the authors advocate that Strengths-Weaknesses-Opportunities-Threats (SWOT) and benchmarking / monitoring approaches be given center stage.

This paper is based on the assumption that the spatial area for which competitiveness assessment will be undertaken is at least the metropolitan area, and more desirably, the extended urban region that would include peri-urban areas.[1] Because sub-areas of large cities in the developing world are so spatially specialized, if peripheral areas are not included, manufacturing virtually drops out of the equation.

1.1 Defining Competitiveness

Urban competitiveness refers to the ability of an urban region to produce and market a set of products (goods and services) that represent good value (not necessarily lowest price) in relation to comparable products of other urban regions. Non-tradeables, e.g., local services, are part of the competitiveness equation. An urban economy that produces goods and services for local people of high value relative to price, supports the export economy of the city, making it more competitive, as well as directly raising the quality of life and standard of living for people living in the urban region.

The paper is designed to set off a dialogue. It is not exhaustive, nor a technical manual, although technical detail is footnoted. A key conclusion is that there is a need to learn from competitiveness assessment practice based on the experience of a sample of developing country cities, although competitiveness assessment, as a formal function of government, is still rare in developing country

[1] Extended Urban Regions would include the built up area, plus areas likely to be built up within 10-20 years. In addition, outlying developments, e.g., industrial estates, airports, or seaports , that are functionally part of the urban region would be included as well. The largest urban regions have extended urban regions that extend as far as 200 kilometers from the core.

cities. As well, it is recommended that a manual containing operational guidelines to implement an agreed-upon realistic, practical approach to urban competitiveness assessment be developed. The approach could then be tested and refined in a number of City Development Strategies (CDS) cities.[2] Because the City Development Strategy program of the World Bank utilizes a strategic planning approach, and this paper was prepared for that program, it is assumed that basic strategic assessment of cities is already being done, e.g., SWOT analysis, identification and analysis of drivers, scenarios, etc. This paper focuses on methodologies specific to competitiveness assessment.

1.2 The New Competitiveness

As has been well documented, urban regions are becoming more exposed to global forces, as the nation state becomes more open to capital and trade flows (Kaothien and Webster, 2000). This represents both a threat in that market and investment conditions change very rapidly subjecting urban regions to potential negative economic impacts, and an opportunity in that cities now have more scope to develop their own competitiveness strategies and access world markets, global labor and capital. Of course, urban regions control only some of the factors which determine their competitiveness. National policy frameworks and socio-economic conditions are also very important, e.g., national taxation, human resource development, tariff, macro economic, industrial incentives, policies, etc. In addition, national political stability very much influences the competitiveness of cities. However, in many countries, national factors are becoming relatively less important because of global forces, e.g., trade liberalization which makes tariff policies less important, or because of internal changes, e.g., decentralization which may result in devolution of responsibility for critical competitiveness factors, e.g., education of technical personnel, to the local level. The range of competitiveness factors that are directly or indirectly within the purview of local urban authorities is increasing rapidly in many, probably most, developing urban regions. Urban regions (through local government, public private partnerships, or the local private sector) typically have considerable influence over local infrastructure and amenity, industrial estates, office complex development, community networks / forums, etc. In many urban regions other important competitiveness functions, formerly under the purview of the national government such as technical education, management of airports, are coming under the control of stakeholders in the urban region. The above dynamics mean that sub-national capability, both institutionally and in terms of technical skills, to undertake competitiveness assessment and implement competitiveness policies is needed now more than ever. Unfortunately, most emerging urban regions do not have formal, or even informal, processes to assess competitiveness, let alone act in a coordinated and strategic manner on the basis of that information. Thus although all emerging urban regions enjoy some form of comparative advantage, such competitive advantage is not always well understood by local stakeholders, including local governments.

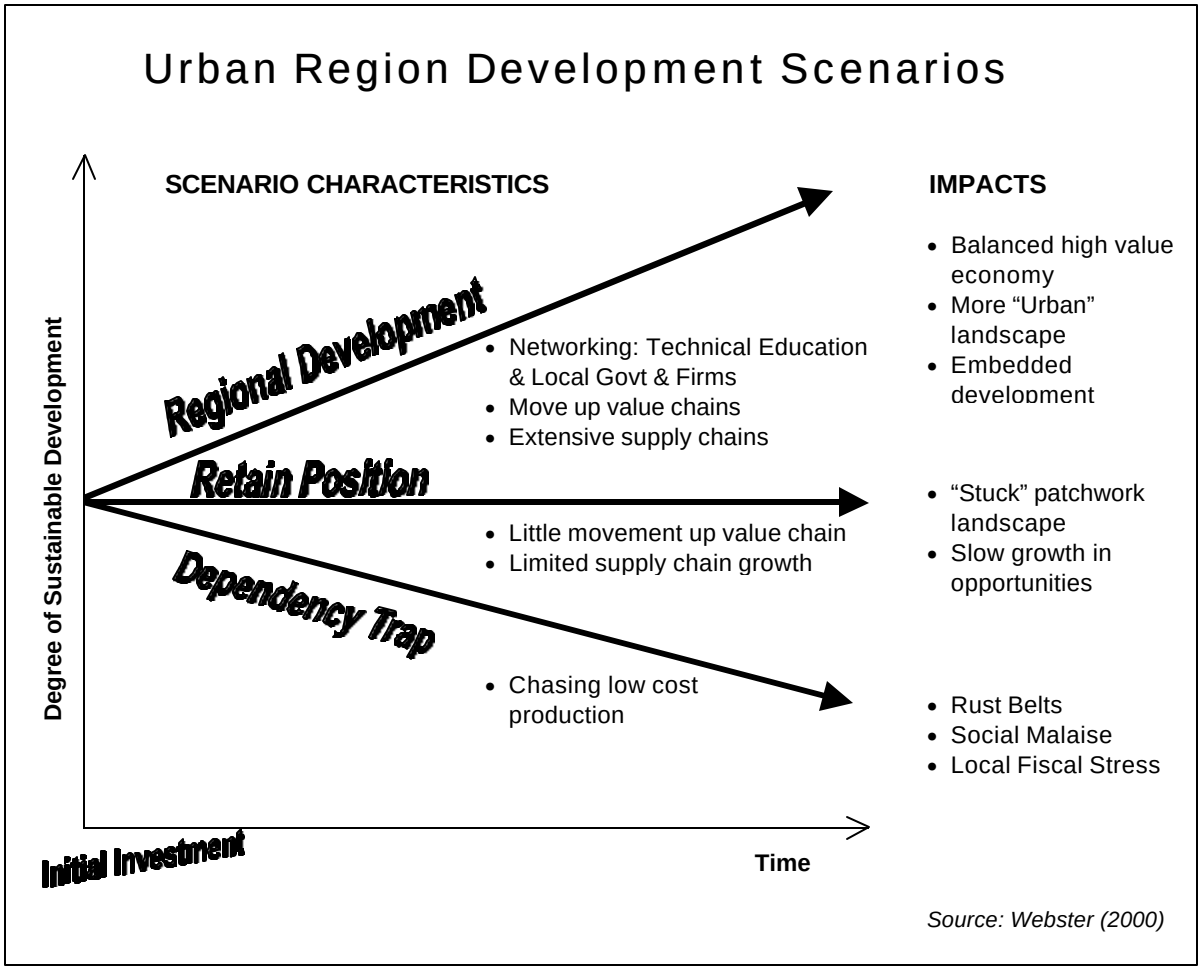
[2] The City Development Strategies Program of the World Bank involves a number of developing cities throughout the world. The World Bank provides catalytic technical assistance, but most work is done by the cities themselves. These strategies "…focus on the city as the unit of analysis with the understanding that cities contribute to national welfare, are an integral and often major part of the national economy, and with assistance in reforms, adjustments and investments, can be made to increase both local and national output".

Not only must the nexus of this capability shift to sub-national units, but the modes of assessment need to change. Firstly, core cities virtually everywhere in the developing world are deindustrializing. As they become more oriented to service activity (particularly financial, business and producer, tourism, and personal services), modes of competitiveness assessment need to change. Secondly, change, in both manufacturing and service economies, is becoming much more rapid, meaning that current economic and employment structures provide less guidance as to future competitive advantage than in the past. For example, a few years ago, Silicon Valley was known for manufacture of computers, then for semi-conductors. Now its economy has outgrown these roles and it is the center of Internet technology. Developing cities are changing equally rapidly. Bangkok, Thailand was known for textiles, footwear, and other apparel production; now the Extended Bangkok Region is home to the leading automobile manufacturing cluster in Southeast Asia. Penang, Malaysia was known for assembly of electronics, now it is moving up the value chain, becoming a logistics and design center for the electronic industry.

In undertaking competitiveness assessment, it is necessary to focus on both ***activities*** (e.g., finance, tourism, computer manufacturing, the role of the informal sector) and ***place***. Activities because that is how cities compete in the real world. For example, Phuket and Denpasar compete over tourism, Hong Kong and Singapore compete over the finance sector, Bangkok and Kuala Lumpur over automobile manufacture. Place because non-tradeables, such as human resources, territorial endowments, and institutional milieus, are very important in determining where activities will located, expand, or contract.

Above, it was argued that the present economic and employment structure of a city is becoming an increasingly poor guide to its future economic role. Further complicating competitiveness assessment is that it is very difficult to forecast how a given trajectory might play out in a city, even knowing what competitive advantage exists in the near term. For example, as indicated hypothetically by Figure 1, being able to attract Foreign Direct Investment, e.g., for automobile manufacturing, can play out in many different ways. It may result in a dependency trap with the industry not moving up the value chain, and eventually leaving to chase lower cost labor elsewhere, leaving behind social, environmental, economic, and local government fiscal problems. On the other hand, a synergistic process may develop whereby the firms, local governments, supporting institutions, e.g., technical schools and industry organizations, work together to create a high value economy, challenging jobs, vibrant communities, etc. Also complicating competitive assessment is the fact that there are many different routes to success (or failure), even given a relatively similar set of initial factors. For example, Singapore has relied heavily on foreign direct investment by multinationals (and continues to) while Seoul and Taipei (based on national policies and consensus) have largely shunned such investment – but all three of these urban regions have been very economically successful.

Figure 1: Development Scenarios



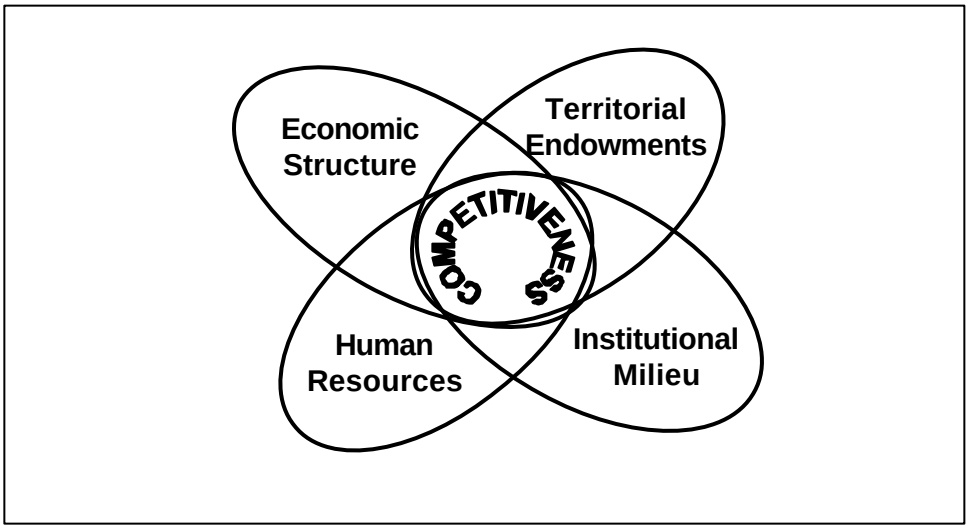
The paper focuses on what can be practically done in terms of competitiveness assessment given relatively limited human, financial, time, and institutional resources, plus data constraints. The perspective taken is one of, "why would you, as an investor, entrepreneur, or manager, want to undertake a given activity in this place, and what are the constraints to doing so, especially as identified by those already operating here". The competitiveness assessment would focus especially on those factors (positive and negative) which can be controlled or significantly influenced locally.

2. ASSESSMENT CATEGORIES

Figure 2 indicates the four assessment categories around which techniques are discussed in this paper (Section 5). ***Economic structure*** has traditionally been the focus of competitiveness assessment, key elements usually considered include economic composition, productivity, output and value added, and

investment – foreign and domestic. ***Territorial endowment*** refers to the non-tradeables associated with a given place, such as location, infrastructure, natural resources, amenity, cost of living and doing business, and an urban region's image. Human resources refer to the skill levels, availability, and costs of labor in an urban region. However, it is increasingly becoming clear that the value of human resources is highly related to the environment in which they are deployed, just as the same plant will grow very differently in different soil regimes. Thus there are enormous differences in returns to human resources depending on the institutional milieu and place where they work. ***Human resources***, along with the ***Institutional milieu*** are probably the most important factors in explaining competitiveness. Human resources determine the extent to which activities in cities can move up value chains. Human resource development must "fit" emerging economies in cities if human resources are to be a competitive asset. The quality of education and training is at least as important as the number of students graduated. The institutional and cultural milieu refers to business culture, governance and policy frameworks (including incentive structures), and network behavior. It is increasingly clear that development and competitiveness is largely a product of networking, which is based on, and creates social capital (Granovetter 1985, Putnam 1993).

Figure 2: Four Assessment Categories



In undertaking competitiveness assessment, the irony is that those aspects of competitiveness, such as business culture and network depth (measured, for example, in terms of cross-membership in key organizations) which are the most important in defining competitiveness, are often the hardest to measure. These measures rely on "soft" data, such as key informant interviews, focus groups, surveys and polls. In certain respects, developing countries have an advantage in collecting this type of data, as it is labor intensive. On the other hand, the collection of unfamiliar data and use of unusual methods is often poor and inaccurate in developing countries (Flood 1997). Training in data collection methods can greatly improve the quality of urban competitive assessment.

3. ASSESSMENT MODALITIES

Three assessment modalities are discussed below, namely Regional Economics, Benchmarking, and SWOT analysis. Key features of all three of these modalities are incorporated into the proposed rapid urban competitiveness assessment approach introduced in the following section (Section 4).

3.1 Regional Economics

Regional economics is the modality that has traditionally dominated assessment of urban region competitiveness. Because this modality represents the historical core of the field, numerous books survey and explain the key techniques within its purview (c.f., Bendavid-Val 1991, Davis 1990, Hoover 1971, Richardson 1978, Richardson 1988).

Regional economics, or regional science, focuses on quantitative analysis of a city region's economy, and may include "snapshots" over time (time series). It has a normative aspect: "optimal" mixes of industry are specified on the basis of optimal location (location theory) or comparative advantage (factor endowment models). Key variables in regional economic analysis are economic structure, and costs of production in differing locations with particular emphasis on transportation and labor costs. Some of the techniques, such as location quotient, measure specialization, while others, such as location theory, essentially identify minimum cost locations for production. Regional economic analysis tends to place more emphasis on production and distribution costs than on factors central to competitiveness in globalizing and "new" urban economies such as innovation and flexibility.

What is the relevance of regional economic approaches to competitiveness analysis in developing country cities? Firstly, such techniques can be useful in assessing competitiveness in regard to traditional industries, e.g., steel in which the product is reasonably undifferentiated so that different cost structures make a big difference in influencing location decisions. As well, the regional economic set of techniques is useful in assessing competitiveness for/in labor intensive industries such as apparel production where labor costs play such an important role. The techniques identify areas in which an urban region has comparative advantage in economic (particularly cost) terms. Secondly, from such analysis, one can identify areas where there is need to alter factor prices. An example of rapid alteration of factor prices is Singapore during the recent East Asian economic crisis (1997-1999) – the state engineered rapid decreases in labor costs largely by drastically reducing payroll taxes, particularly provident fund contributions. Nonetheless, cost-based analysis of comparative advantage, even for labor intensive or standardized production, ignores other important factors, including political stability and economic policies and, most importantly, labor productivity. Another shortcoming of regional economic techniques is that the data frequently does not include activities or contributions of the informal sector which makes the techniques less useful in low income cities.

3.2 Benchmarking

Benchmarking is a modality that is becoming increasingly important in assessing the status and performance of urban systems, and has considerable relevance in assessing competitiveness (Flood 1997; Flood 2000; Heikkila 1999; Fairfax County 1999). Unlike the regional economic techniques, which identify ideal or optimal sets of activities, albeit for one point in time, benchmarking is based on identification of comparable "mentor" cities. The conceptual difficulty is deciding which cities are appropriate models – this requires a vision or other image of the desired future for the city region being assessed. It is important to identify mentor cities that provide challenge but not ones that are so far up the development trajectory that they do not provide a reasonable target nor do they motivate appropriate means.

The benchmarking process involves: (i) refocusing goals (vision), objectives, and indicators, on outcomes, (ii) developing indicators to measure progress towards the desired state, (iii) relating performance to benchmarks, (iv) identifying factors underlying performance,[3] and (v) guidance of programmatic and allocation decisions. Benchmarking in an urban context is being used extensively by the United Nations Centre for Human Settlements (UNCHS), the Asian Development Bank (ADB), and by several developed country urban areas, e.g., Fairfax county.

The advantages of this approach are that it is dynamic – mentor cities keep changing – and it encourages visioning and performance monitoring. This dynamism is particularly relevant in today's rapidly changing global economy. Its weakness is that it does little to identify means to achieve desired outcomes, other than observed apparent causal relationships (which may be difficult to identify) between policies, behavior, and outcomes in mentor cities. However, the approach is useful in terms of general resource allocation and monitoring effectiveness of initiatives, and as noted earlier, in helping define what it means to be competitive.

3.3 SWOT Analysis

SWOT analysis is usually undertaken within the context of strategic planning. In the authors' judgement, any current methodology to assess urban competitiveness should include strategic methodologies. If competitiveness assessment were undertaken as a free-standing activity, it should be part of a developed strategic planning process involving mission statements, scenarios, etc. However, since this paper assumes the existence of such a strategic framework as part of the City Development Strategy (CDS) process, only the SWOT component is discussed.

[3] Identifying factors underlying positive performance is difficult. Thus, indicators showing that the "mentor" city is performing well in a given area, do not take the analyst very far in understanding why the performance is good. Techniques such as program evaluation, factor analysis, case studies, etc., would need to be undertaken to gain some understanding of underlying determinants of good performance. Yet, because benchmarking implies taking action in a city region to improve performance, such information is needed to identify appropriate levers to effect desired change.

The advantage of SWOT analysis is that it assists the analyst(s) in identifying realistic thrusts or niches for a city to pursue in a competitive, conflict-ridden world under conditions of limited resources and rapid change. It plays this role by paying close attention to external change and capacities of institutions operating within the internal environment, in this case the urban region in question.

The SWOT process involves: (i) identifying and assessing strengths and weaknesses in the existing urban system, paying particular attention to institutions, (ii) identifying and assessing external opportunities, and threats – nationally, regionally (e.g., ASEAN), and globally, and (iii) monitoring change in the above conditions.

SWOT analysis is often undertaken as a "one off" activity, frequently by a management consulting company. Although such an approach may prove useful, SWOT analysis is generally most effective when deployed as an ongoing process.

The advantage of the SWOT approach to competitiveness assessment is that it does not start with fixed objectives, thus it encourages "thinking outside the box". Secondly, it utilizes many forms of information, such as media reports, outputs of focus groups (with stakeholders) and key informant interviews, as well as conventional secondary socio-economic data. The disadvantage of the approach is that it is as much a craft as a science, so that the quality of the outcome depends considerably on the personnel who oversee the process.

4. PROPOSED URBAN COMPETITIVENESS ASSESSMENT PROCESS

Figure 3 describes the recommended urban competitiveness assessment process, it is based on an amalgam of the foregoing approaches. The comments that follow are sequentially ordered consistent with Figure 3.

4.1 Step One: Issue Identification

The first step in undertaking the competitiveness assessment process proposed is to identify issues and concerns of the urban region in question relevant to competitiveness. For example, some cities will value equity more highly than others, some cities may be concerned about retaining or developing a manufacturing base. However, participants in the process should be willing to subject all issues and concerns to scrutiny in terms of feasibility and consequences / impacts. Some cities have developed mission statements that can prove useful in guiding the competitiveness assessment process.

4.2 Step Two: Competitiveness Focus Groups (Optional)

In some cities, a desirable early step would be to organize a competitiveness focus group. The focus group would involve key stakeholders, e.g., key representatives of anchor and fast-growing firms in

Figure 3: Proposed Urban Competitiveness Assessment Process

Step 1:	Determine issues & concerns relevant to competitiveness Does a Mission statement on competitiveness exist?
Step 2:	Conduct stakeholder focus groups on competitiveness of city (Optional) • Guides where to look (but be careful)
Step 3:	Undertake pattern analysis of economic structure, specialization, labor force, investment • Utilize secondary data • Time series • Review surveys of informal sector
Step 4:	Identify comparable cities for benchmarking purposes
Step 5:	Undertake analysis of local endowments, e.g., location, infrastructure, amenities • Compare with competitive cities
Step 6:	Identify pillars of economic strength (specialization, clusters: especially in share gaining activities)
Step 7:	Assess external drivers affecting city: opportunities and threats • Scenarios formulation (optional) • Domestic, regional (e.g., ASEAN), global

Step 8:	Assess internal strengths & weaknesses
	• Networks, institutions, champions
	• Identify levers that city controls and focus on these: often amenity & infrastructure
	• Undertake surveys, focusing on:
	  • Key firms (anchors, emerging) & institutions (especially key technical education)
	  • Individuals (key stakeholders & champions) who will exert high leverage

Step 9:	Identify realistic competitive strengths and weaknesses
Step 10:	Develop competitiveness strategy • E.g., learning region, clusters, low cost production, investment driven export base
Step 11:	Establish benchmarks, policy indicators, and monitoring mechanisms

the city, SMEs, the banking industry, city government, leading technical education institutions, and industry experts in activity areas in which the city currently specializes, or aspires to. The output could provide a roadmap to focus further analysis, however, extreme caution should be used. Stakeholders in a city may reinforce each other's opinions, and fashions in development style (electronic clusters, info park, etc.) notoriously come and go. See Enright (1998) for analysis of this tendency. Or, they may be locked into development strategies for the urban region that no longer fit current internal and/or external realities.

4.3 Step Three: Economic Structure Analysis

The next step is to undertake analysis of secondary data on the urban region's economy, labor force, and investment patterns utilizing conventional regional economic techniques that can be deployed rapidly, e.g., location quotients rather than input-output analysis. Economic structure analysis can be undertaken rapidly, and at low cost, if the data, e.g., Gross Regional Domestic Product data, is handled aggressively by skilled analysts. If not handled skillfully, reams of data will overwhelm insights.

It is important that time series analysis be undertaken to determine the historical trajectory of the urban economy in question. And, as noted earlier, analysts should be aware that much data omits the informal sector although its influence may be reflected in cost of living, wage, labor supply, industrial structure, and other indicators. Other sources of information, such as surveys of the informal sector undertaken by government, international development agencies, or NGOs are needed to complement official urban economic data that often ignores this sector.

Specific techniques to undertake competitiveness of urban regions using quantitative secondary data are discussed in more detail in Section 5.

4.4 Step Four: Identification of Benchmark Cities

At this point, comparable cities should be identified. This is because analysis of local endowments (the next step) is best undertaken on a comparable basis. In identifying comparable cities, it is best that they exhibit reasonably similar institutional and cultural characteristics, and comparable state-society relations (e.g., weak state, strong state). Thus they will often be cities from the supranational region in question (e.g., ASEAN, Mercosur). Choosing such cities increases the probability that the means that these comparable cities have used to achieve desired outcomes might prove effective and acceptable in the city undertaking the competitiveness assessment.

4.5 Step Five: Local Endowment Analysis

The next step involves analyzing local endowments, that is characteristics of the city that are essentially non-tradeable or place specific, e.g., infrastructure and amenity. The best way to evaluate a city's competitiveness endowment is to compare it with analogous cities. Specific techniques to undertake analysis of local competitiveness endowments are discussed in more detail below (Section 5.2).

4.6 Step Six: Economic Strengths Identification

Next, current pillars of economic strength should be identified and assessed – normally these will number about four to eight. These are activities in which the city specializes (as determined by location quotients – employed under step 4.3), is known for, or which are growing very fast (much faster than in other comparable cities, the nation as a whole, or globally) – as determined by shift-share analysis.

This is a scoping activity that focuses on key industries, firms (anchor firms exhibiting high centrality in the regional economy), and clusters. Appropriate techniques to be deployed include industrial surveys, discussed in section 5.1. The objective of this analysis is to understand the quality and extensiveness of market channels and supply chains, growth potential, technology deployed, etc. The overall goal of this analysis is to identify economic strengths to focus a competitiveness strategy.

4.7 Step Seven: External Threats and Opportunities Assessment

The next step is to assess the external dynamics affecting a city and to identify, from these drivers, opportunities and threats. The assessment should focus on at least two different spatial scales: international dynamics (e.g., trade agreements) and national dynamics (e.g., macroeconomic policies, political and ethnic stability). National competitiveness rankings agencies, such as the International Institute for Management Development (IMD) which prepares the World Competitiveness Yearbook, have collected data on several national variables that will have an impact at the local level, such as protectionism, fiscal policies, state involvement, and the justice and security situation.

As part of the larger City Development Strategy (CDS) process, scenarios may have been developed that can prove useful in identifying external threats and opportunities. Or, macro scenarios can be used as developed by groups such as OECD or regional development banks. For example, what would be the effect on the competitiveness of Accra if the future resembles Scenario x for West Africa. More specific scenarios can be obtained and utilized pertinent to different economic bases. For example, a city dominated by the petroleum industry will want to closely examine scenarios related to oil prices, alternative energy sources, forecast demand for petroleum products, etc. Such scenarios will assist such a city region in deciding whether, for example, large-scale diversification of the urban economy makes sense, or whether the city should add value by focusing on knowledge services related to the petroleum industry, as Calgary and Houston have done. Industry organizations, groups such as the Economist Intelligence Unit, and trade publications frequently develop industry scenarios. (For example, Lloyds Press, now part of the Informa group, publishes over 500 trade journals which frequently contain scenarios for specific industries, e.g., maritime trade.) For a description of the value of such scenarios, see Schwartz (1991). In undertaking this work, it is important to realize that the future can not be forecast, but that in assessing future competitiveness, it is important to think through what impacts different assumed futures would have on the city's economy.

Urban region competitiveness assessment to a considerable extent should focus on locally controllable factors, and of course, local data is usually most easily accessed. However, it is important to identify and take into account the best international assessment (drivers, scenarios, etc.) on external forces relevant to the region and economic activities important to its future.

4.8 Step Eight: Internal Strengths and Weaknesses Assessment

The urban region's internal strengths and weaknesses, particularly institutional, should be assessed next. Internal strengths and weaknesses assessment looks at the factors that are subject to local control. Thus it is important to determine just what is controllable, and what is not, at the local level. There is little use in devising interventions that involve bodies outside of local control unless there is significant probability that these jurisdictions will cooperate. Thus a competitiveness assessment may want to focus on factors such as local institutions (e.g., local taxation, business climate, local government capacity), infrastructure, amenity, public education, and marketing / promotion. If the city becomes very efficient and attractive, market forces may take care of the rest. On the other hand, with

cooperation from the private sector and senior governments, a broader range of intervention is possible, e.g., establishing incubators, altering investment incentive structures. In such cases, the perspective of the internal strengths and weaknesses assessment should be wider.

Internal analysis should rely significantly on surveys, polls, and key informant interviews. Although the extent of surveying will be limited by resources, developing country cities have an advantage in this regard in that labor is usually reasonably inexpensive and surveying is labor intensive. Surveying should focus on key firms, institutions, and individuals that will exert high leverage in terms of the city's competitive future. Considerable information exists on corporate surveying (Markusen 1994; Piore 1979; Schoenberger 1991). Surveying anchor firms in clusters, e.g., an auto manufacturer, rapidly growing firms, and representative firms in other activity areas, e.g., producer services, personal services, plus SMEs, is important. Secondly, surveying key technical education leaders is essential – it is human resources that ultimately determine an urban region's competitiveness. Thirdly, other key informants should be surveyed such as political leaders, key community business leaders, e.g., Chamber of Commerce heads, bankers, especially those with cross-memberships in influential groups.

4.9 Step Nine: Competitiveness Strengths and Weaknesses Assessment

Based on activity 4.8, key realistic strengths and weaknesses of the city in question can be identified. Producing the final list may require reconvening key stakeholders in focus groups. Also involved should be "tough" outsiders who will objectively question local assessment of competitive strengths and weaknesses to try to minimize distortions created by local "boosterism", rear view mirror thinking, vested interests, etc.

4.10 Step Ten: Competitiveness Strategy Formulation

Competitiveness is determined by relating local strengths and weaknesses to conjectured future driving forces, and the opportunities and threats associated with them. From competitiveness assessment, a competitiveness strategy should be developed. The competitiveness strategy would focus on a theme, e.g., learning region, specified production clusters, low cost production, investment driven export base. Cluster strategies have been successfully implemented in a number of developed country regions, and similar strategies are now being adopted to improve the competitiveness of several developing country regions, such as Northeast Brazil, Malaysia, and Bangalore, India. Box 1 describes the cluster strategy and discusses how the competitive assessment approach discussed in this paper can be used to identify potential clusters.

4.11 Step Eleven: Indicators and Establishment of Monitoring System

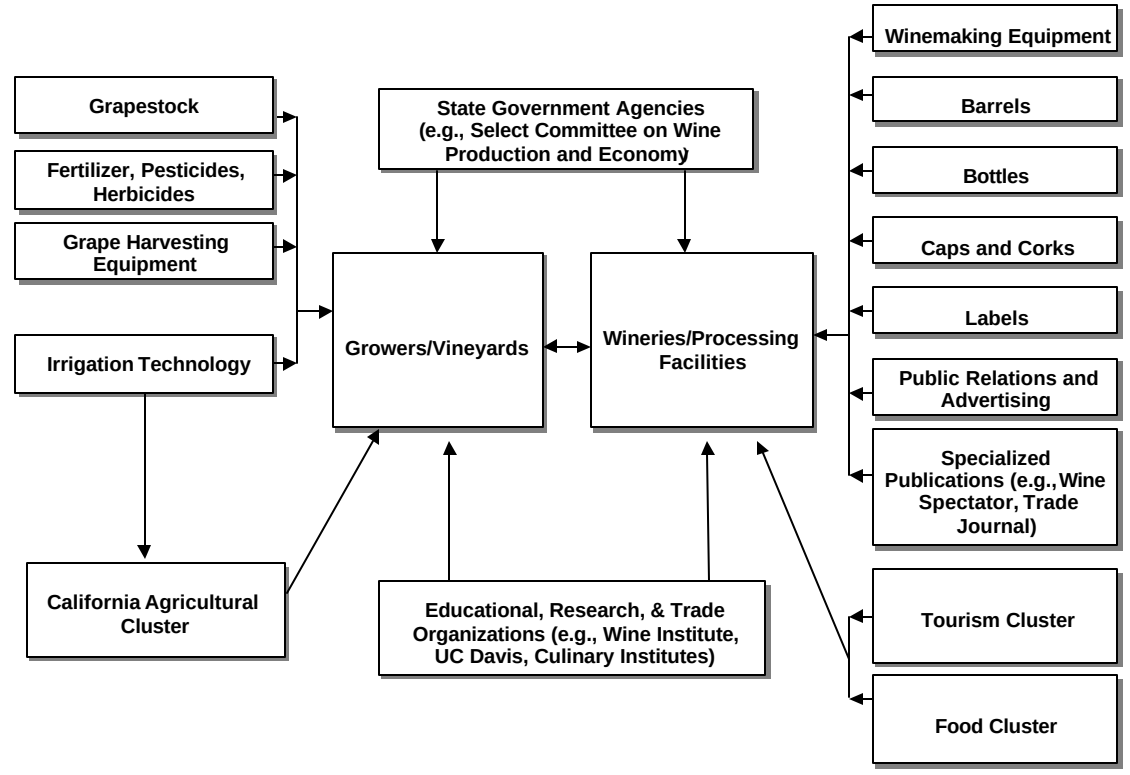
A competitiveness strategy only has value if progress is monitored. Every key element of the competitiveness strategy should be keyed to an indicator(s), and every indicator should relate back to a clearly stated action (policy, instrument, project) in the strategy. Milestones (interim objectives) should be developed, partially based on the performance of benchmarked urban regions. The monitoring system should be designed and kept lean so that it can be continuously upgraded and be maintained.

Box 1: Industrial Cluster Strategy

Industrial clusters are a unique form of industrial organization. A cluster consists of a group of firms, in related industrial activities, that are spatial concentrated and internally networked.* Geographic co-location of related industries generates external economies such as the sharing of infrastructure and the availability of specialized labor and producer services, which lowers production costs and increases productivity of firms. But the power of the cluster lies in combining agglomeration economies with horizontal and vertical linkages among firms within the cluster. These linkages enable individual firms to specialize in one segment of the industrial process without unduly exposing themselves to risks. And, more importantly, where these linkages involve purposeful collaborative action, firms tend to perform better benefiting from shared organizational learning, upgrading, research and information.

An extensive set of literature and studies exists on industrial clusters. One well-known example of an industry cluster is the California Wine Industry described in Porter's work (see figure below). As this example demonstrates, the cluster is not simply the agglomeration of core activities—wine growers and processing facilities—but also includes the presence of, and linkages to, related activities and institutions. Research institutes such as the Wine Institute and University of California at Davis, relevant government agencies and committees, and marketing agencies and wine publications are as much a part of the California Wine Industry Cluster as bottle and cork makers, and the producers and sellers of grape harvesting and wine making equipment. Linkages to related industries distinguish the cluster from the traditional growth center concept which only focused on supply chain linkages and indirect multipliers. But this characteristic also makes clusters difficult to identify using statistical data such as input-output tables, since significant linkages to small subsets of industries (e.g., wine publications) are lost within the standard industrial categories (e.g., printing and publications), used in these methods.

The California Wine Cluster

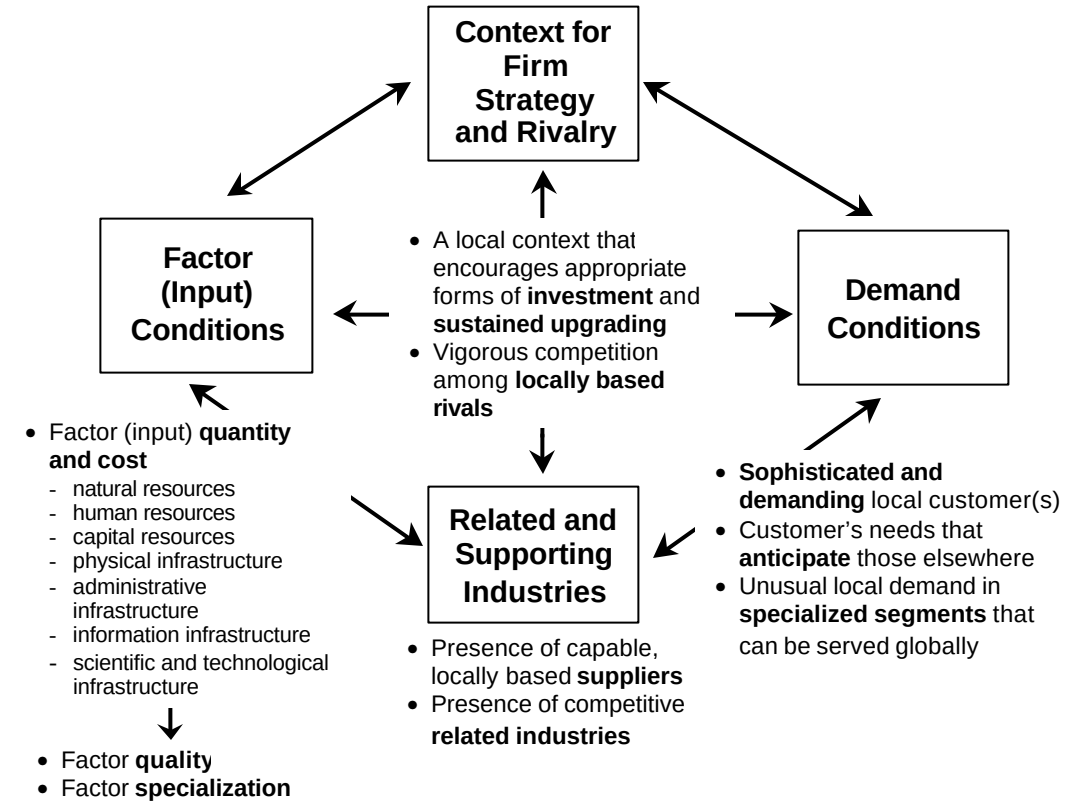


SOURCE: Porter (2000) based on research by Harvard MBA students P. Alexander, R. Arney, N. Black, E. Frost, and A. Shivananda

Although most of the cluster literature focuses on developed countries, a growing body of work is emerging on developing country clusters. (See, for example, the special issue of *World Development* on Clustering and Industrialization.) There is increasing evidence that clustering can help boost industrial growth in developing countries, (Shmitz and Nadvi 1999). Clusters have been found to be especially effective in infant industries. Clustering facilitates mobilization of latent resources in smaller, less risky increments that are more attractive to local entrepreneurs. Also, complementary investments result in higher returns on each individual investment and skill contribution. Clusters have also proven effective in assisting mature industries to effectively respond to the pressures of globalization and liberalization by increasing quality of products, speed of response, and flexibility to changing demands. The configuration and role that a cluster plays varies between infant industry and mature industries. Performance in a mature industry is more closely associated with the quality and quantity of *vertical* linkages, to market networks and supplier chains. On the other hand, *horizontal* ties, e.g., to local trade associations or universities, are especially important at earlier stages of industrial growth.

But a cluster strategy is not a panacea. The industrial cluster is not necessarily the best organizational form for all industries or stages of industrial maturity. Some industries perform well although not proximate to other producers, suppliers, and supporting institutions, etc. (e.g., steel and cement production). And even among those industries that are liable to benefit from clustering, the benefits are by no means automatic. Certain conditions must be met for clustering to enhance competitiveness. Porter has identified four supporting conditions, which

Diamond Factors: Sources of Locational Competitive Advantage



SOURCE: Porter (2000)

he refers to as “the diamond factors”, (see figure below). These factors are: (i) related and supporting industries (suppliers), (ii) sophisticated demand conditions, (iii) quality factor inputs (e.g., labor, resources, infrastructure, science and technology), and (iv) conducive context for firm strategy and rivalry (competition, incentive structures for upgrading, etc.). Research on developing country clusters has highlighted other important conditions for clusters to lead to industrial growth. Growth of infant industrial clusters, for example, need (i) external linkages to trade networks to gain access to larger markets and (ii) institutions that enforce contracts and promote trust for collaborative action. And in developing countries, strategic responses to the challenges of globalization often require public agencies to act as catalysts or mediators, thus raising wider issues of local governance (Schmidt and Nadvi 1999,1505-1509).

Competitive assessments can be useful in developing a cluster strategy in two ways. First, the assessment technique can be used at the formulation. It can identify industries that are in need of a cluster strategy, namely: (i) the existence of small-medium enterprises and skills that can form the basis of a new cluster, (ii) mature industry clusters that need to respond to external challenges, or (iii) clusters of transnational corporations and their suppliers that can be instrumental in upgrading local suppliers. Second, once an industrial cluster has been selected for strengthening or upgrading, the assessment techniques can be used at the cluster-level to guide cluster policy decisions, by assessing the presence and quality of supporting cluster competitiveness conditions.

*The cluster form of industrial organization is distinguished from hierarchies, in which all aspects of the industrial process are contained within a single corporation, and markets, in which each firm operates independently and interacts on purely market (price) and contract basis.

5. TECHNIQUES

Techniques to be deployed in implementing the above competitiveness assessment process (Section 4) are organized according to the four assessment categories presented previously (in Section 2), namely, (i) economic structure, (ii) territorial endowment, (iii) human resources, and (iv) institutional and cultural milieu. Appendix 1 lists, according to the four categories, all techniques discussed below.

5.1 Economic Structure

The greatest returns in assessing economic structure can be obtained from common sense analysis of output (economic product, value added, etc), employment (by industry, occupation, age cohorts, etc.), and investment (domestic and foreign) data. The focus of analysis should be on: (i) trends, (ii) shares of different activities, and (iii) shares of different geographic areas (by activities) within the extended urban region. Although such data is often available for larger cities in that they are equivalent to provinces or groups of provinces (e.g., Buenos Aires, Bangkok, Manila, Jakarta), smaller cities frequently present more difficulty in that their economies are only part of a larger provincial (or state) economy. However, there are techniques that can help in this regard – to start with, they involve extracting the agricultural (primary) component from provincial scale data bases. Increasingly, spatially disaggregated data is available from computerized sources (e.g., for census tracts) even though it is not published for small spatial units. However, the more spatial refinement practiced, the more careful the analyst must be concerning sample size; and, in many countries if there are only a few producers (e.g., under 3 or 5) in a sector in a given spatial area, the data may not be released for reasons of confidentiality.

Another data problem, affecting cities throughout the world is that new, knowledge-based economic activities are poorly defined and categorized in statistical surveys. For example Standard Industrial Classification (SIC) codes provide much more disaggregated and accurate data for the old economy, e.g., steel or automobile production, than on new activities, e.g., information technology industries, many producer services, etc. This shortcoming is particularly serious in terms of flow data, particularly international trade. Cities increasingly export services of considerable value, and this trade is growing rapidly, but it is very difficult to gauge such flows although they are critical in assessing a city's competitiveness. And, as noted earlier, the informal sector is poorly reflected in both static and flow data; generally speaking, the poorer the city region, the poorer will be the fit between the picture painted by official urban economic data and the reality on the ground. Other techniques, such as surveys of the informal sector undertaken by government, international development agencies, or NGOs need to be identified and analyzed to complement official urban economic data that often ignores this sector.

Employment data (by occupation by geographic area) is usually produced through household surveys, labor force surveys (often conducted quarterly), and censuses (every 5 or 10 years). Economic output data (by sector by geographic area) is usually produced by the national planning agency, statistics

agencies, or the national bank. Investment data (by type, by sector, by geographic area) is usually produced by the national bank and investment incentive agencies. Cities themselves may conduct their own surveys, particularly related to population.

5.1.1 Location Quotient

Location quotients measure an urban region's current specialization in a given economic activity, compared with the nation or another comparable sample. "Snapshots" over time reveal changes in specialization. For details on using location quotients, see Bendavid-Val (1991). For their use in terms of exurban (peri-urban) industrialization, see Nelson (1995). One advantage of location quotients is that they are extremely easy to calculate from data that is usually readily available (usually employment data) in time series format.

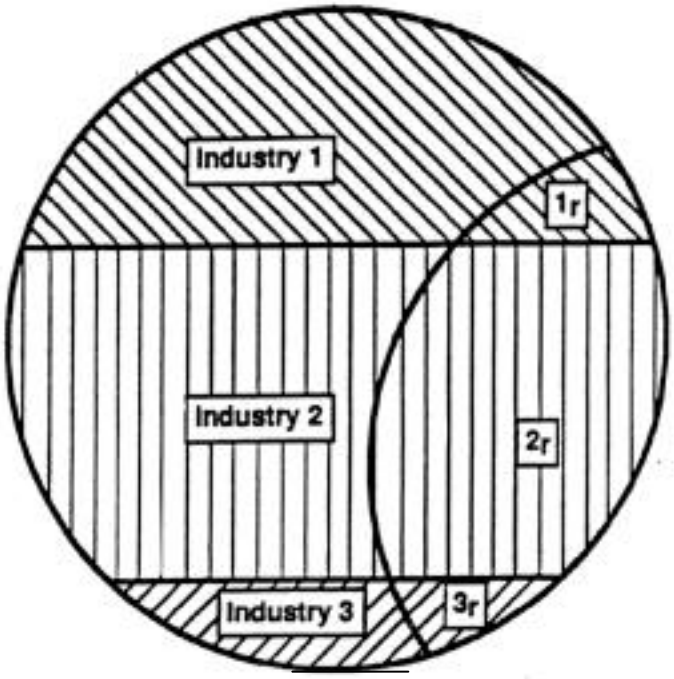
As policy is increasingly formulated at the urban region level and urban regions become more important in the global economy, the macro comparable spatial unit from which expected values are calculated in utilizing techniques such as location quotient will need to be changed. For example, expected values in calculating location quotients could be derived from more meaningful constructs such as comparable competing cities, the national or regional (e.g., ASEAN) aggregated urban economy, etc.

5.1.2 Share Analysis

Share analysis first measures employment growth in an urban region relative to the national economy, or preferably, the national urban economy. It then measures the city region's changing share of employment in major activities relative to national urban employment, or another comparable construct. It then measures changes in the region's mix of activities (usually measured in terms of employment) relative to changes in a comparable macro spatial construct, e.g., the national urban economy. Mix and share concepts are shown diagrammatically in Figure 4. The approach identifies activities in which the region is gaining share relative to expected gains (or losses) as determined by the performance of a comparable (usually macro) spatial unit. Last, but important, the dynamism of the activities in which the region is gaining share needs to be ascertained by reference to national, or even global urban growth rates in that category. For more detail on utilizing this technique, see Bendavid-Val (1991).

If an urban region's economy is growing rapidly (in terms of share) in an activity, e.g., steel making, which is declining in importance overall, this may not necessarily be a bad sign, provided your region is better at that activity than other regions. Your region could be "the last man standing". And, on the other hand, rapid growth in a dynamic activity, e.g., computer software should not induce complacency – dynamic sectors are more attractive to competitor urban regions and new entrants than mature sectors.

Figure 4: Diagrammatic Representation of Mix and Share Concepts



Industry Mix

$$\frac{1_r}{1_r+2_r+3_r}, \frac{2_r}{1_r+2_r+3_r}, \frac{3_r}{1_r+2_r+3_r}$$

relative to

$$\frac{1}{1+2+3}, \frac{2}{1+2+3}, \frac{3}{1+2+3}$$

Regional Shares

$$\frac{1_r}{1}, \frac{2_r}{2}, \frac{3_r}{3}$$

at the start of the period, relative to

$$\frac{1_r}{1}, \frac{2_r}{2}, \frac{3_r}{3}$$

at the end of the period

Source: Bendavid-Val (1991)

Share analysis is descriptive – it does not explain what is causing growth. Activities which are fast-growing in a city region now may not continue to be so; and globally dynamic activities lose their dynamism at some point, replaced by other emergent activities. Secondly, caution should be exercised in that a fast-growing activity may not be suitable for your urban region's economy – using the garden analogy again, only certain soils will support certain crops. However, share analysis is useful in that it provides an inexpensive means of generating an overview of a city region's economy in terms of

shares in fast or slow growing activities. Secondly, the output of the technique documents the extent to which the region's economy is moving towards a faster or slower growing mix, based on comparable (expected) norms.

5.1.3 Economic Base Analysis

In economic base analysis, export activity (export from the city region, not the nation state) is termed "basic" and is assumed to be the driver of the urban region's economy. "Non-basic" activity refers to city-serving activity or, as it is sometimes called, residentiary activity, i.e., serving the urban region's residents. There are several ways to calculate the ratio, most of them quite simple, see Richardson (1978). Sometimes the ratios are calculated using employment data based on minimum requirements (all activity in excess of the city with the lowest percentage of employment in that category is deemed basic – a logically flawed concept). Location quotients (production in excess of the expected norm [based on a larger comparable area] in a given urban region is assumed to be for export), or industrial surveys that identify output exported from the city region are preferable techniques for calculating basic activity in an urban region. (Obtaining data to utilize the latter technique obviously involves considerable expense unless such survey data is already available.) Once the basic: non-basic ratio is determined, a multiplier is directly derived indicating expected residentiary employment likely to be induced from incremental units of export employment. The technique is most useful when calculations are based on actual export data, however, flow data at the urban region scale is very much inferior to flow data over national boundaries, although may be partially obtainable from sources such as port, aviation, and trucking authorities. As service exports from urban regions have become more important, data problems have increased.

The technique implies that exports are inherently superior to city-serving enterprises. This assumption may not be warranted in the case of very large urban regions. For example, the Shanghai extended urban region or the Pearl River delta urban constellation contain approximately 60 million people – much new activity could be justified and prosper based on serving that population alone.

The value of the technique is that it provides a rough indicator of the value of exports to a city region's economy, identifies fast growing export sectors (if disaggregated to the industry level), and assists in the formulation of multipliers for economic impact assessment purposes.

5.1.4 Productivity Analysis

Nations routinely measure productivity as a key indicator of national economic performance. Over the long run, standards of living cannot be improved without productivity increases. The same is true of urban regions, they need to become more productive if they are to support higher standards of living. Productivity is usually measured in terms of value of output relative to unit cost of labor; returns to capital are also calculated (capital productivity). Labor and capital productivity can, and should, be calculated for an urban region. Generally speaking, increasing productivity will reflect increased investment in effective human resource development, learning by the labor force, effective allocation of

capital (avoiding "capital sinks"), and importantly, effective deployment of technology, e.g., computers, internet systems, state-of-the-art production processes. In many cases high returns to capital will be associated with limited employment creation. For example, the capital intensive industries of Thailand's Eastern Seaboard generate about 1/4 the number of jobs per unit of capital than is the case in the outer provinces of the country. Such relationships need to be considered in assessing competitiveness and developing competitiveness strategies.

Ultimately, productivity, not factor costs, is the prime determinant of production investment location decisions. That is, investors want to maximize output per unit cost of capital or labor. The vast supply of highly educated workers in East Asia (Japan in 1960s, South Korea and Taiwan in the 1970s and 1980s, and now China) kept wages low while supporting high productivity, giving these countries a large labor productivity advantage over both developed and other developing countries (Brenner 1998, Walker 1995). Likewise, high rates of high school completion in the northern regions of Mexico has created a highly productive inexpensive labor force capable of sophisticated assembly and machinery repair, giving them a competitive advantage in advanced auto and electronic assembly (Shaiken 1994). Thus, generally speaking, an urban region will enjoy competitive advantage in those activities in which it has high productivity compared to similar activities in other urban regions, and will want to build on this productivity advantage.

5.1.5 Regional Income Indicators

Regional income data is among the most widely used data in assessing urban region economies. Generally such data is referred to as Gross Regional Domestic Product (GRDP) data, although in some jurisdictions, e.g., the United States, it may be referred to as Gross Metropolitan Domestic Product (GMDP). GRDP data, of course, has the same limitations as national GDP data in terms of failure to include non-remunerated work and the informal sector. As is the case with GDP, it fails to reflect purchasing power parities when used to compare urban regions in different countries (reflecting exchange rate differentials) or even in different sub-national regions (because of difference in cost of living). It correlates only roughly with quality of life in that it does not reflect income distribution, it includes the value of resources used to address negative externalities (e.g., oil spill clean up), it does not reflect the mix and effectiveness of public sector social programming, etc. Nevertheless, it is the closest to a universally accepted indicator of economic performance that exists.

GRDP indicators are useful in assessing relative performance of urban regions over time. Sectorally disaggregated GRDP data (which is almost always available) is useful in undertaking shift-share analysis, as indicated earlier.

5.1.6 Investment Indicators

Investment, both domestic and foreign, is an important indicator of competitiveness. It is virtually impossible for an urban region to grow without considerable investment. Thus it is important in undertaking competitiveness assessment to monitor the volumes of domestic and foreign investment to

urban regions by uses to which it is being deployed, e.g., capital facilities, mergers and acquisitions, recapitalization, and the activities in which it is being deployed, e.g., real estate, manufacturing. (Foreign investment is usually disaggregated according to: (1) official flows, (2) private debt flows, (3) portfolio equity flows, and (4) foreign direct investment.) It is also important to monitor public investment and the uses to which it is being put. Since investment (and de-investment), particularly foreign investment (and within that category, particularly portfolio investment) can fluctuate substantially from year to year, it is important to monitor cumulative investment as well as the pattern and magnitude of fluctuations. Other indices can prove useful, e.g., Foreign Direct Investment (FDI) as a percentage of fixed capital investment. In many cases, urban region scale investment data is difficult to obtain, despite its importance. If investment data is obtainable for sub-areas, e.g., core, suburbia, peri-urban in extensive urban regions, as it sometimes is ideal.

Investment indicators (and proposed investment, e.g., data on investment incentives approved) provide information in regard to likely changes in export growth, and emergence of anchor or high growth industries. To a significant extent, investment indicators, particularly foreign investment, track the attractiveness of an urban region to the business community. In very poor urban regions, and in most African cities, FDI is low; domestic formal investment, e.g., from commercial banks may also be low. In these situations, capital raised through family savings / pooling of funds, micro credit, etc., may play a much larger relative role than in more developed urban regions, e.g., the cities of emerging East Asia. In such situations, there is a need to compile through social surveys (particularly household expenditure surveys) and records of individual agencies, e.g., micro credit organizations, basic information to estimate the value of credit flowing through informal, e.g., family, middlemen, and micro credit channels.

Since most investment in manufacturing occurs in suburban or peri-urban areas, as does a high percentage (often the majority) of investment in real estate, investment indicators are especially important in assessing competitiveness, and future growth, in peri-urban and suburban areas.

Generally speaking foreign direct investment and domestic investment in real assets is more stable than portfolio investment, and thus a better gauge to future competitiveness of an urban region. However, portfolio investment flowing into an urban region needs to be carefully monitored because of its volatility.

5.1.7 Input-Output Analysis

Input-output analysis tracks linkages among different industries in an urban region. It reveals the extent to which each unit of final sales of regional goods and services leads to more or less regional income. In effect, the technique defines regional leakages. Input-output analysis assumes that demand is exogenous to the model. An input-output table is expensive to produce: not only is the technique data intensive, but to be useful, it requires regular updating. Moreover, significant lags in data publication—often exceeding two years in developing country regions—mean the table will not accurately represent the current situation. Thus, its feasibility for use in developing country urban regions is limited.

Generally, constructing input-output models at the urban scale in developing countries is not a good use of scarce resources. On the other hand, given the increasing importance of clusters (see Box 1), input-output analysis may provide valuable information on inter-industry linkages and regional multipliers. It essentially identifies activities with high regional economic leverage.[4]

5.1.8 Industrial Structure Surveys

Existing firms are very important – they can expand or contract within an urban region. Surveys of key firms, e.g., anchor firms in clusters and firms in high growth industries, can thus be very valuable. Based on data obtained from industrial surveys, relationships with other key regional and external actors can be mapped, e.g., competitors, suppliers (including producer services), customers, trade associations. In Figure 5, Markusen (1994) illustrates the mapping of a Seattle, Washington software firm's linkages both within the region (inner box) and outside the region (outer box).

A particularly valuable contribution of industrial surveys is that they can alert regional authorities to potential shocks, and can inform regional stakeholders of the extent to which a firm is regionally embedded, and thus less likely to leave or significantly downscale. Surveys should probe for: (i) exogenous factors affecting an industry, e.g., replacement of steel with aluminum for automobile frames, (ii) structural changes in industries, e.g., mergers which could result in loss of a regional headquarters function, and (iii) changes in firm strategy, e.g., moving manufacturing or design functions into or out of region. Taking a shorter perspective, industry surveys can reveal shorter term intentions of firms, e.g., their investment plans in the region, over the next one to three years.

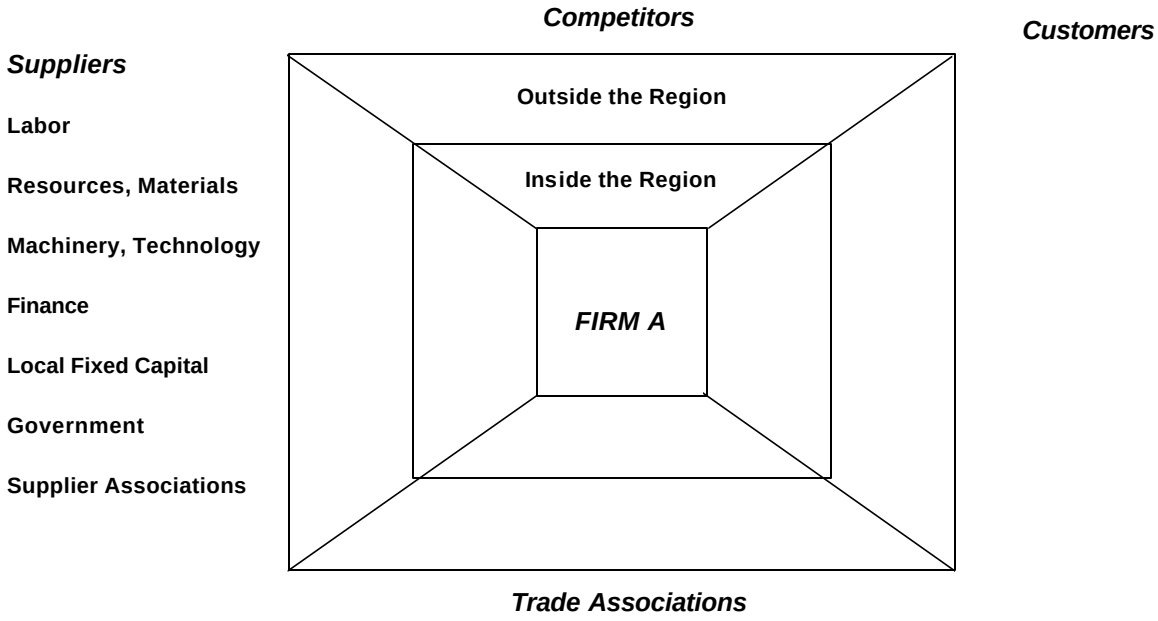
In undertaking industrial surveys it is important that the sample be defined carefully, on a stratified basis to include foreign and national firms, large and small ones, and long and short term actors in the urban region. Sample selection is critical, because resources limit sample size. Caution must be exercised in utilizing this technique. Firms may not be cooperative or mislead interviewers. Or, data from different firms may not be consistent, e.g., in terms of the future of an industry in the urban region.

One of the key policy relevant attributes of the technique is that it can warn a region of probably future shocks, enabling it to take protective measures. For example, in the Bangkok case, interviews with business leaders indicated that an economic recession was likely to occur prior to the onset of the July 1997 recession; unfortunately, the findings were ignored. Industrial surveys can be useful in complementing (or triangulating) more static forms of analysis, described above, which have little value in alerting key stakeholders to possible shocks or rapid change. The technique can be very valuable in cases where a few firms dominate an urban region's economy. However, in such cases, dominant firms are likely to be circumspect in responding to questions in that they are aware of the significant implications of any responses that they provide to questions.

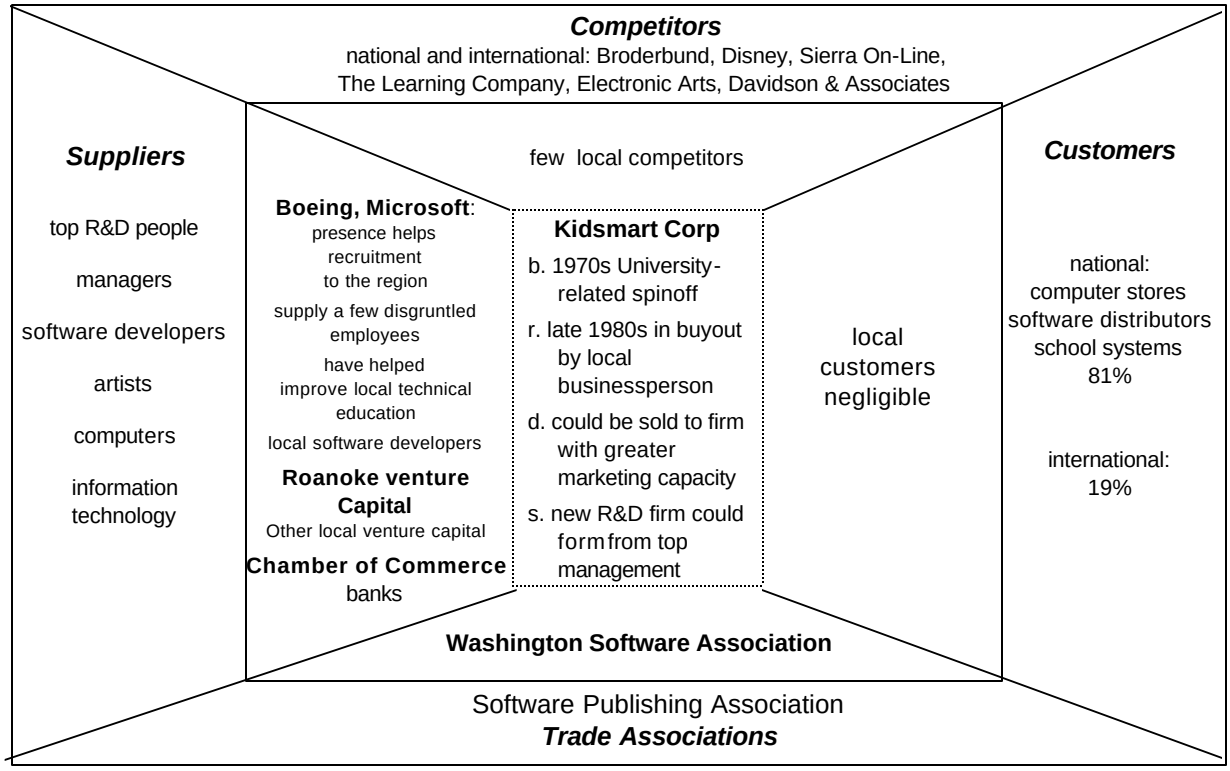
[4] Even so, the industry data is often not sufficiently detailed (the SIC codes are too broadly defined) to capture the true composition of the inter-firm linkages. This is even true for manufacturing which is more finely categorized than services. Thus, important linkages to an industry sub-sector might be overlooked unless linkage data is supplemented with surveys (see section 5.1.8).

Figure 5: Firm Mapping

Template for Firm Mapping onto Local and Nonlocal Space



Example of Software Firm Mapped onto Local and Nonlocal Space



b: born r: ownership restructuring d: divestiture s: spinoffs Source: Markusen (1994)

5.1.9 Degree of Concentration and Economic Diversity

It is often important to assess the degree of concentration within industries in an urban region, and the extent to which the overall industrial structure in the urban region is diversified (based on straight-forward industrial structure analysis noted earlier). In terms of intra-industry concentration, oligopoly may imply a lack of innovation that can make an industry vulnerable, e.g., the Detroit-based auto industry prior to the large scale importation of Japanese automobiles to North America in the late 1960s. In terms of the urban economy as a whole, an urban economy dominated by one or a few industries may dominate and shape supply of labor and other inputs. This may be detrimental in terms of other firms entering the urban area because of entrenched unions, banking culture (which may favor large loans), land costs, etc. If the industries mature or face competition from elsewhere, the urban region's economy can be at risk.

5.1.10 Centrality

Assessment of centrality is very important in competitiveness analysis. There are two measures of centrality. One measures how important a region's firms are in the global production process in key activities. In this case, centrality should not be confused with final assembly of a product, which is often a relatively low value activity. Enright (1998) has used centrality methodologies to analyze the economies of Hong Kong, Singapore, and Malaysia; Hill and Brennan (2000) have developed centrality methodologies, based on the use of regional economic data.

However, being central to the production process does not ensure that the firm will remain in the region. A second measure of centrality determines the embeddedness of local industries in the region. Firms can be categorized on a declining scale of centrality according to: (i) traditional firms (local firms produce for a local market), (ii) hub and spoke producers (supplier *or* customers are not local), and (iii) satellite producers (suppliers *and* customers are not local). Porter (2000) has emphasized the importance of centrality in regional competitiveness. Porter stresses the importance of a sophisticated local market to test and refine products, the value of local related industries, including competitors, and the value of capable local suppliers. A high degree of embeddedness is correlated with firm loyalty to the region and opportunities for spin-off activities and innovation.

5.2. Territorial Endowments

Territorial endowments refer to the assets of a ***place***. Territorial endowments are best understood in the context of comparison with competitor urban regions. Since all endowments can not be inventoried, endowment analysis requires selecting and scrutinizing those attributes of a city that are important to development at that urban region's level of development. Different endowments become more important at different points on the development trajectory. For example, amenity may be relatively unimportant in a city such as Dhaka or Phnom Penh whose competitiveness is dependent on low cost production of garments. However, amenity is very important to cities such as Kuala Lumpur, Penang, or Singapore that need to attract investment and industry higher up the value chain.

5.2.1 Markets

Local markets are important in that they are easily accessible. Perhaps more important, is the quality of the local market. More demanding markets push producers to develop and sell higher quality goods and services which, in turn, position them well in export markets. However, recent evidence indicates that market channels can, to a large extent, substitute for a sophisticated local market. That is, if external buyers are sophisticated and demanding, they can do much to improve the quality of local production.

Important characteristics of markets that need to be probed include the size of the market, its purchasing power, and income distribution. Human resource analysis, described below in Section 5.3, can provide valuable information in terms of identifying the characteristics of markets.

5.2.2 Location and Access

It is important to inventory facilities that provide transportation access to/from the region. This would include airports, seaports, rail terminals and networks, road networks (particularly controlled access highways). The capacities and capabilities of these facilities, e.g., container handling capabilities, should be inventoried and benchmarked. Cost of transportation from the urban region in question (both terminal and by kilometer costs) is a significant variable in undertaking competitiveness assessment. In assessing networks, whether an urban region is a hub (air, sea, road) is important, as is the frequency and reliability of scheduled services.

Notwithstanding the "death of distance" argument, transportation is still an important element of competitiveness. For example, the fact that Mexican electronics components producers are in the same (or nearby time zones) and only a few hours away from United States "centrality" producers gives them an advantage over cities in Asia. In particular, rapid response is becoming increasingly important in an era of just-in-time production processes. Rapid response (frequency of service, quality, reliability) may be more important than the actual cost of transportation to/from an urban region.

Another component of access is worker accessibility. This can be measured by the average time taken to commute to work.

5.2.3 Infrastructure

Competitiveness assessment requires that key urban region infrastructure be inventoried. This would include transportation systems (e.g., km of freeways, number of passengers carried by rapid transit), and obviously of increasing importance, telecommunications systems (number of mobile phone subscribers and main telephone lines per 1000 habitants, number of internet hosts per 1000 habitants), as well as electricity and water supply systems, and environmental infrastructure (e.g., percentage of

population served by waste water and solid waste collection, percentage of toxic waste treated). Many quality companies, such as Hewlett Packard, have indicated that they wish to be associated with communities that have high environmental standards. In inventorying infrastructure, indicators should be used to assist comprehension and ease comparison with other jurisdictions, e.g., kilometers of freeway per 1000 habitants. Reliability indicators are very important for service infrastructure such as electricity or water supply. Investors surveying an urban region are particularly interested in facts such as the average number of electrical failures per year in an area.

Industrial estates are key to competitiveness in most developing cities. Their location and services offered may be an important factor in attracting an industry to a given urban region. In some cases, industrial estates may have a higher profile and importance than the city itself. For example, industrial estates may be home to a significant industrial cluster, such as the Eastern Seaboard Industrial Estate in Thailand's Eastern Seaboard that is occupied by over a hundred firms, constituting a major automotive cluster.

Basic infrastructure is taken as a given by most investors, however, deficiencies in infrastructure make an urban region much less competitive.

5.2.4 Amenity

Amenity is extremely important in attracting investment, retaining firms, and inducing existing firms to expand, especially in middle and higher income urban regions. Since amenity is relative, it is best analyzed through benchmarking. Important elements of amenity include the urban environment and quality of life, including climate, pollution levels, public safety,[5] health and education facilities, recreational and cultural facilities such as golf courses and museums, living culture such as cuisine and performing arts, and aesthetics including preservation of heritage (which can be measured through heritage inventories). Tourist visits and average length of stay of tourists (measured by time series data) are important indicators of the amenity levels prevailing in an urban region. Tourism, in itself, is an important economic activity that can contribute significantly to an urban region's economic development. City rankings, published world-wide, often by magazines such as *Asiaweek*, can be an important gauge of the amenity level of an urban region, (see Box 2).

The relevance of amenity to competitiveness is very high. It is becoming more important as the cores of cities become increasingly service based and peripheral areas become more dependent on, or desirous of, higher value manufacturing. Typically, amenity and economic development co-evolve, thus amenity is as much the result of increasing regional development as a cause of local development. Once achieved, amenity can be a distinguishing attribute that makes an urban region more desirable to an investor when other factors are perceived to be relatively equal.

[5] Safety and protective services can be measured in terms of crime rates, number of police per capita, and perceived personal safety and property security. High use of private protection services could be used as a negative indicator of safety.

Box 2: Measuring Quality of Life

ASIAWEEK QUALITY OF LIFE RANKING

CITY	RANKING 1998	1999
FUKUOKA	2	1
OSAKA	3	2
TAIPEI	5	2
TOKYO	1	4
SINGAPORE	4	5
BANDAR SERI BEGAWAN	8	6
GEORGETOWN	6	7
KUALA LUMPUR	9	8
HONG KONG	7	9
SHIANGHAI	13	9
CHIANG MAI	20	11
KAOSIUNG	14	11
BANGKOK	26	13
SEOUL	14	13
KUCHING	11	15
PUSAN	14	15
BEIJING	10	17
DAVAO CITY	19	18
CEBU CITY	14	19
GUANZHOU	21	20
CHONGOING	29	21
COLUMBO	24	21
HANOI	22	21
MACAU	11	24
NETRI NABUKA	14	25
BANGALORE	27	26
ISLAMABAD	24	26
BANDUNG	38	28
JAKARTA	35	29
DELHI	31	30
HO CHI MINH	23	31
PHNOM PENH	35	31
SURABAYA	38	31
YANGON	29	34
KATHMANDU	27	35
VIENTIANE	40	36
CHITTAGONG	31	37
DHAKA	33	38
KARACHI	34	38
BOMBAY	37	40

Source: Asiaweek December 17, 1999

Each year, ASIAWEEK magazine publishes its ranking of the best Asian cities to live in. Asiaweek scores the forty regional cities based on 28 performance indicators. The scores are weighted by category to create the Quality of Life Index.

The 23 performance indicators are:

Economic Opportunity *(15 points)*
- Unemployment rate
- GDP growth
- Annual urban inflation rate
- Average income

Quality Of Education *(15 points)*
- Per-capita state expenditure for education
- Average class size in primary school
- University-educated people as percentage of total population

Environment & Sanitation *(15 points)*
- Sulfur dioxide in the air (ppm)
- Dust/suspended particles in the air—micrograms per cubic meter ($\mu g/m^3$)
- Percentage of population with sewerage
- Sq meter of parks and fields per capita

Health Care *(15 points)*
- Average life expectancy
- Hospital beds per 1000 people

Transport & Communication *(10 points)*
- Vehicles per km of city road
- Existence of a mass transit rail system
- Average time taken to commute to work
- Number of telephones per 1000 people

Personal Security *(10 points)*
- Criminal cases for every 10,000 persons

Housing Cost *(10 points)*
- Average monthly rental per sq meter
- Ratio of housing price to income

Leisure *(10 points)*
- Number of movie theaters per 100,000 people
- Vacation and public holidays per year
- Number of TV sets per 1,000 people

5.2.5 Capital and Finance

Although capital is becoming increasingly mobile, availability of affordable local capital is an important factor in competitiveness, particularly to small and medium-sized firms, especially domestic ones. Interest rates are obviously of concern to investors. In urban regions where innovation-oriented activities are encouraged, e.g., Bangalore, availability of venture capital can be a factor in competitiveness, although few developing cities have significant venture capital functions. The existence of well-functioning intermediate (on-lending) credit institutions such as industrial finance corporations and SME credit programs can be important in improving an urban region's competitiveness.[6] Local banking culture is an important aspect of urban competitiveness. For example, how are loan decisions made, on the basis of collateral, business plans, or cronyism? What is the incentive (or disincentive) structure within which loan officers operate – are they encouraged to take risks? All of the above need to be the object of inventory, and subsequent assessment based on benchmarking.

5.2.6 Cost Structures

Cost structure information is relatively easy to obtain from local sources, international ratings agencies, e.g., the Economist Intelligence group, property management companies, investment agencies, relocation consultants, etc. Important elements of a city's cost structure of interest to potential investors include land and property markets and construction costs, labor costs, and cost of living. Taxes (corporate, personal, property, VAT) are of concern, as are exchange rates (particularly volatility).

In assessing the cost structure of a city, it is important to note that the lowest cost city is often not the most competitive. Investors are searching for value, not lowest cost. In fact, if investors and residents are willing to pay high costs to operate businesses, work, and live in a city, it is an indication of its high value in terms of production and/or quality of life. For example, some very high cost cities such as Singapore, Hong Kong, the San Francisco Bay Area, are very attractive to investors while many low cost cities are not. However, if an urban region is high cost, it must be capable of supporting high value activities in terms of human resources, infrastructure, technology, etc. If a city is chasing low cost, labor intensive activities, a low cost structure is, of course, important.

5.2.7 Image

Increasingly, for better or worse, image, sometimes based on a less than 100% correlation with reality, is important in determining a city's competitiveness. Image refers to a city's profile, and may be particularly important to secondary and smaller cities that do not show up on investors' and migrants'

[6] The capital supply structure is an important component of a strategy to move up the value chain and keep industry in a region. According to Doner's work on Thailand's apparel industry (in Bonacich et al. 1994), investors are moving away from their original locales to lower-cost regions in neighboring countries rather than upgrading, largely because of a lack of available financing.

radar schemes. For example, China now has about 45 urban regions with over 1 million people, but how many of them are known to business leaders outside China? Postcards frequently reflect local perception of a city's image, at least its positive attributes, but projecting an image internationally requires marketing and promotion functions. In fact, city marketing is now considered to be an essential component of any urban economic strategy (Borja & Castells 1997, Ohmae 1995). Hong Kong and Dubai are examples of locales that aggressively market their advantages.[7] The profile that a city is projecting can be measured through content analysis of international publications, surveys, etc.

A city's image very much affects the behavior of investors. Investors usually only consider a very few places in making investment decisions, thus you must be on their radar screens. Similarly tourists (tourism is the world's largest industry and increasingly urban-centered), are attracted to a city that projects a strong and positive image.

5.3 Human Resources

Human resources are probably the most important ingredient in the mix of factors that determine an urban region's competitiveness. The ability of an urban region to move up value chains is closely linked to human resource capabilities. In undertaking competitiveness assessment, it is important to assess human resources not only in terms of education, training, skills, and work experience, but also in terms of other attributes, less easily measured, such as entrepreneurship, creativity, and risk tolerance. Secondly, it must be recognized that the productive value of individuals is largely determined by external factors. Latent potential of individuals in one institutional or cultural milieu may bloom when they move to another milieu that provides more conducive conditions and opportunities.

5.3.1 Labor Force Participation

Analysis of labor force participation is core to any assessment of local human resources. This would include assessment (based on time series data) of standard labor force measures such as the size of the labor force, the dependency ratio, unemployment, underemployment, average hours worked per week, etc. Data should be disaggregated by gender and age as appropriate.

5.3.2 Skills / Education Profiles

Skills and education profiles are very important in undertaking competitiveness assessment. Education and training levels (by key skill categories) should be profiled by age cohorts. Of particular importance, are inventories of engineers, scientists, computer experts, and other key technical personnel. At a more basic level, rates of literacy and numeracy need to be ascertained. In a globalizing world, knowledge of languages, particularly English, is very important – the percentage of

[7] Many cities are aggressively marketing themselves by buying advertisements in international journals and newspapers, inviting companies to locate in their city. In addition to guaranteeing quality labor and infrastructure, these cities market themselves on their reputation – as leaders in a certain industry, activity, and/or on their quality of life.

people able to work in English needs to be ascertained. Similarly, the percentage of people possessing core contemporary technical skills, for example, ability to use personal computers and the internet, needs to be profiled. Rough measures of the scale of use of contemporary technology might include the number of computers per capita, number of internet subscriptions per capita, and enrollment in computer courses. These measures, however, do not control for the *quality* of skills.

In terms of policy relevance, the English language is likely to become more important because of widespread usage of the internet, but even more importantly because the next wave of offshore investment from developed countries is likely to involve service activities, e.g., undertaking routine accounting in suburban areas (back office) of developing country urban regions for developed country based firms.

5.3.3 Educational Facilities / Curricula

This aspect of competitiveness assessment would include identifying, for benchmarking purposes, the number of students enrolled in key technical areas, and net changes in enrollment. More important, but much more difficult to assess, is the quality of technical education programs, again for benchmarking purposes. Do the programs meet the needs of a competitive economy? The existence of elite, or leading educational / research institutions should be determined – such institutions can contribute substantially to an urban region's competitiveness, as has been indicated by such institutions as the Bandung Institute of Technology (ITB) in Bandung, Indonesia. And job retraining and adult education programs should be inventoried and assessed, e.g., number of enrollees over time.

5.3.4 Industrial Structure and Labor Force Alignment

The fit between the labor force and emerging regional economic structures is becoming increasingly important. To the extent that labor force-to-economic structure fit is realized, competitiveness will be enhanced. As an urban region develops deep expertise in certain economic activities, the probability of greater firm embeddedness is significantly increased. Tightness of fit can be measured by indicators such as unemployment-to-job vacancies ratios and labor turnover rates by economic activity area.

5.3.5 Wage Earnings and Labor Institutions

Any meaningful competitiveness analysis should include information on the minimum wage prevailing in the urban region, and on prevailing wages for an array of key tasks. The latter information is frequently available from investment agencies, the labor ministry, or industrial associations. Also importantly, payroll taxes and deductions should be specified. Of interest to potential investors is the existence of unions, the percentage of the labor force unionized by sector, and the history of labor-union relationships in the urban region in question. (The existence of a high level of unionization can be a positive competitive characteristic if union – management mediation has been effective in avoiding production stoppages.) Also, major technical and professional associations should be identified, and

their membership numbers. Such organizations can be very important in contributing to network-based development, enhancing an urban region's competitiveness.

Low wages are most important when productivity is stagnant and low end production is prevalent. If a region and its workers are highly productive, it can competitively support high wage rates. In fact, high wages can attract high quality, productive, innovative, workers to an urban region, feeding a positive cycle of productivity growth.

5.4 Institutional Milieu

There is a growing consensus that the institutional milieu is one of, if not ***the***, key factor in explaining the competitiveness of successful regions, particularly in more developed economies (Porter 1990, Putnam 1993, Saxenian 1994, Storper 1997). In spite of the broad recognition of its importance, the dynamics behind this factor are not well understood. Various analysts credit different aspects of the institutional milieu for creating conditions that foster competitiveness. Thus there are few established techniques within this assessment category. Depending on which aspect is deemed most important, different measures and proxies are proposed.

For our purposes the institutional milieu lies at the nexus of what Putnam (1993) refers to as "social capital" and what Porter (2000) refers to as the "context for firm strategy and rivalry". Social capital is defined as the features of social organization such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions. Putnam credits the presence of social capital in explaining the success of Northern Italian regions and its absence to account for the comparatively poor performance of Italy's southern regions. Porter (2000), in his discussion of locational competitive advantage, stresses the rules, incentives and norms that encourage investment, vigorous competition, and sustained upgrading.

The focus of the analysis should be on qualitative assessments of local public sector capability, investment climate, business conventions, and networks and partnerships--private as well as public-private. In some instances, particularly for large cities, independent industrial surveys and rating services that calculate investment climate indices, may be available. Surveys of local industries, chambers of commerce and trade associations are another valuable source of information. Where secondary data of this nature is not available or needs to be supplemented, primary data collection, in the form of key informant interviews and/or surveys, is recommended. To the extent possible, consistency in questions and measures over time and established indices of investment climate is desirable to facilitate monitoring of improvements and benchmarking.

5.4.1 Governance

Governance ratings, generally speaking, assess the stability and attractiveness of the microeconomic business environment, which, according to Porter (2000), strongly influences "the sophistication of how companies compete in a location". In many international business surveys, governance ranks

higher than infrastructure in terms of major factors influencing investment decisions. Both national and local governments play a role in creating a positive investment climate. But in urban competitiveness assessment, national government policies and effectiveness should be treated as an external factor, (see Step Seven in Section 4), since they are beyond the control of the urban region and therefore form the context or environment in which economic activity in an urban region must operate. Several rating and risk assessment agencies, such as the Economist Intelligence Unit and the IMD, collect and publish data on the national investment climate and policies of countries which can be used to assess some of the external opportunities and threats. There are three important factors to evaluate. First, the macroeconomic policy and political stability: this is a critical factor when competing with cities in different countries for international investment. Second, corporate and personal tax structures. Third, the existence and enforcement of intellectual property, corporate, and anti-trust laws: this is critical in order to encourage a shift from low cost competition to competition on the basis of upgrading and innovation.

The local government plays an important role in determining the quality of the microeconomic environment, because it controls multiple factors ranging from traffic management to local tax structure. Thus, local governance can be measured by generating a weighted index or composite assessment of the performance ratings for each of the following factors. First is the local equivalent of the national fiscal policy, namely the local taxation and business fee structure. A second factor is the extent to which licensing, approval, permitting, and other local governmental processes related to commercial activity, is streamlined. This factor might also include an assessment of the availability and streamlining of programs that promote economic activities and upgrading, such as incubator and credit programs for small and medium enterprises (SMEs).

With a continuing trend toward decentralizing functions and services to the local level, a third and increasingly important indicator of competitiveness is local government capacity. Public sector capacity refers to "the ability of the permanent administrative machinery of the [local] government to implement policies, deliver services, and provide policy advice to decision makers", (Polidano 2000, 805). Recent work for the World Bank on public sector capacity indicators at the national level could be modified to assess local administrative capacity (see Box 3). The public sector capacity index comprises three subfactors: (i) policy capacity which assesses information gathering capacity, staff expertise, and institutional weight of the policy process; (ii) implementation authority which assesses internal compliance and social compliance in key policy sectors; and (iii) operational efficiency, which assesses cost-efficiency and service quality (including delays). Of particular importance in this regard is the existence of regional or local economic development agencies that have a mandate, and preferably experience, in fostering and implementing economic action programs.

Because these factors are subject to local control, local governance measures are an important component of the internal strengths and weaknesses assessment of an urban region. Also, generally speaking, scores on local public sector capacity will reflect the capacity of the local government to successfully implement a competitiveness strategy.

Box 3: Indicators of Public Sector Capacity

In a study prepared for the World Bank, Charles Polidano developed an index of public sector capacity. The index is constructed entirely from existing data sources – reports that publish information about individual countries on a world-wide basis. Thus, while the selection of indicators may not be necessarily the best or ideal measures, they are the most accessible and therefore more useful indicators for cross-country comparisons. Because of the lack of comparable data at the local level, the index assesses the capacity at the national public sector level only. A similar index could be developed for the local level using local data sources and surveys, but its usefulness as a benchmarking device will be limited unless similar data is available in the benchmarked city.

The following table summarizes the proposed indicators of public sector capacity. The index is based on three key factors: policy capacity, implementation authority, and operational efficiency. A total of 11 indicators are used to generate the index score.

PUBLIC SECTOR CAPACITY INDEX

Factor	Indicator	What It Measures	Data Source
POLICY CAPACITY	▪ Completeness of country data in international publications	▪ Ability to collect and process information	▪ IMF statistical yearbooks
	▪ Bureaucratic quality/technical competence	▪ Ability to provide policy advice	▪ BERI, ICRG
	▪ Political intrusiveness/policy continuity	▪ Institutional weight of the bureaucracy	▪ IMD, BERI
IMPLEMENTATION AUTHORITY	▪ Effectiveness of implementation of government decisions	▪ General indicator	▪ IMD
	▪ Corruption	▪ Ability to enforce rules uniformly	▪ Transparency International, IMD, BERI, ICRG
	▪ Net primary school enrollment	▪ Compliance with rules on mandatory schooling	▪ World Development Indicators
	▪ Tax revenue mobilization	▪ Ability to enforce tax laws, combat evasion	▪ IMD
	▪ Percentage of labor force working in the informal sector	▪ Ability to enforce labor laws	▪ Source not identified
OPERATIONAL EFFICIENCY	▪ Wages and salaries as percentage of government expenditure	▪ Indication of overstaffing	▪ Government Finance Statistics Yearbook
	▪ Net financial flows from government to public enterprises as percentage of GDP	▪ Efficiency of public enterprise/parastatal sector	▪ World Development Indicators
	▪ Spending on teaching materials as percentage of total public spending on education	▪ Indirect measure of quality of service	▪ World Development Indicators
	▪ Bureaucratic red tape/delays	▪ Service quality	▪ IMD, BERI, Economist Intelligence Unit

Note: BERI = Business Environment Risk Intelligence; ICRG = International Country Risk Guide; IMD = World Competitiveness Report; IMF = International Monetary Fund
Source: Polidano (2000)

The purpose of Polidano's study was simply to assess the feasibility of creating a public sector capacity index. The above index is a proposal only, thus rankings of national public sector capacity based on this index are not yet available.

5.4.2 Champion Institutions and Individuals

Strong champions in government and/or the private sector can enhance competitiveness in a number of ways. Champions are people or agencies that create energy, enthusiasm and motivation for action and positive change. They are adept at developing personal relationships that help to facilitate linkages and open communication, which, in turn, helps to build trust and bridge differences. A city champion might be a charismatic mayor, an effective development promotion agency, a savvy booster or popular, respected figure. It also might be a high profile firm, although being perceived as a neutral player is important in developing trust.

Champions can play a critical role in the successful implementation of a development strategy. They are useful in bringing name recognition to the city, and in rallying forces and resources around a course of action. They also can play a decisive role during the implementation phase of key programs by maintaining momentum, securing ongoing political support and resources, and preventing resource capture or diversion of program objectives by other players.[8]

5.4.3 Networks and Interconnectivity

The range and density of institutional relations and social networks are another measure of the quality of the institutional milieu. One important focus of this analysis is associations related to or supporting the main industry clusters. Participation in business support programs and partnerships, including SME incubator programs and joint R&D programs, measures the degree of public-private collaboration. A highly networked economic milieu suggests that industry knowledge, information, and initiative are decentralized and widely distributed (Ansell 2000).

Social networks, on the other hand, indicate the presence of social capital—an important basis for collaborative action and economic exchange (Granovetter 1985). Where interfirm relations and social networks overlap, trust is enhanced and relations improved. One indicator of social networks is associational vibrancy—membership levels in clubs and associations, such as trade and industry associations, informal professional networks, professional and technical associations, and private–public collaborative organizations.[9] High participation in civic groups signals the potential for greater interfirm collaborative and information flows, and for broad participation in local development strategies.

Mapping cross-membership in the above associations, and direct working relationships among firms, government, and education institutions indicates the strength and density of these networks. For more

[8] In implementation theory, this concept is known as the role of the "fixer"—usually a powerful and politically well-positioned and networked supporter of the program. See Bardach (1977) for a more detailed explanation of the fixer role in successful policy implementation.

[9] A distinction is generally made between membership in voluntary civic associations, such as chambers or commerce or sports clubs, and ascriptive groups, based on ethnic or caste criteria. This is because balancing arms-length and social relationships is important. When social demands override consideration of merit, they work against economic performance, (Granovetter 1995, Uzzi 1996).

sophisticated analysis, several computer programs are currently available to map network linkages, determine the overall density of linkages, and identify central or prominent groups in the network. In some cases, the data will be available from census data and government documents, but in most cases a survey, using a snowball technique, is required to identify organizations and linkages.

A final network indicator is the degree of inter-jurisdictional cooperation. This can relate to the national-local linkages, in the form of supportive national programs or policies for urban economic development, or local-local governmental cooperation. The latter is particularly important in urban regions that encompass more than one local government. Intra-urban region competition is not only costly for urban residents, but a detriment to the urban area's overall competitiveness (Orfield, 1997).

These measures of interconnections and ongoing relationships are a useful proxy for assessing the flow of information (market, technical and specialized) and learning between organizations and the capacity for collaborative action—key factors in improving efficiency and productivity in a city. Moreover, organizations with a high degree of centrality in social or institutional networks are generally well positioned to adopt a facilitative leadership role in an economic strategy.

5.4.4 Norms and Conventions

Norms and conventions refer to routines, practices, and behavior expectations that guide actions and relations among firms, government, and other institutions. They may be institutionalized as formal rules and laws, but typically are not.

Conventions that favor productivity and innovation are a culture of entrepreneurship, research and development (R&D) spending, and vibrant competition. The local attitude toward entrepreneurship can be measured by the number of new start-ups and business failure rates. Business cultures that are risk-adverse, promote long term company employment, or crowd out competition, reduce local rivalry and run the risk of retarding innovations and complementarities. Cultures that embrace the entrepreneurial spirit (e.g., Taiwan) generally perform better economically. R&D spending, or tax credits for R&D, indicates upgrading and innovation. Likewise vigorous local rivalry, measured by the number of firms in a given sector, creates pressures on firms to upgrade. Until the economy develops, local rivalry in low cost production primarily involves imitation and price competition so early stages of upgrading will not be reflected in R&D measures.

A convention that reduces local competitiveness is corruption, or rent seeking. Thus, an estimate of corruption modes and rates is another important indicator.

Other business conventions that influence innovation and learning are employee training practices and organizational structure. Competitive regions tend to have firms that engage in continual upgrading of worker skills and encourage decision making and initiative at the lower levels of the organizational hierarchy.

Two final measures of cultural norms and conventions are local-foreign relations and mediation. Local-foreign relations can either be measured negatively, through a ranking or media perceptions of xenophobia, or positively, by the number of international organizations and associations, or expatriate residents. It measures openness to foreign workers, investment, and cultural influences. Mediation refers to the array of styles and venues for deal-making and transacting, frequently involving local and external actors. One proxy of mediation is the number and range of trade exhibitions and conventions. Another is the number of joint ventures.

As the world moves toward freer trade, industrial policies, in which states "make winners" using subsidies and trade protection, are becoming a less viable strategy for gaining competitive advantage. Singapore may be the exception that proves the rule. Increasingly cities are going to have to cultivate the preconditions that encourage competitive industry to develop. Generally speaking, if the norms and conventions of a local economy are supportive of learning and experimentation, and open to new ideas and competition, the city is likely not only to maintain, but to gain competitive advantage in key economic sectors.

6. ASSESSMENT UNDER VARYING URBAN REGIONAL CHARACTERISTICS

The assessment approach recommended (see Section 4), and the techniques reviewed (Sections 5 to 8) need to be selected and modified according to the characteristics of specific cities. Below, indications of such modifications are presented, obviously each case is unique and competitiveness assessment approaches have to be customized accordingly.

6.1 Pre-industrial versus Industrial versus Knowledge Economies

Conventional measures of economic structural analysis are more applicable in traditional manufacturing oriented and slow changing cities. Service and knowledge based urban regions are more sensitive to institutional milieu and human resource parameters in terms of competitiveness.

In manufacturing oriented cities, a key concern is whether the economy is moving up the value chain, thus concepts such as centrality play a key role. In terms of territorial endowment, in industrial economies, transportation infrastructure, particularly in peripheral areas is very important, whereas in service oriented economies, telecommunications infrastructure and amenity endowments are relatively more important, especially in core areas or central business districts (CBD).

Very poor cities, may have very limited manufacturing and knowledge (including business / producer services) economies. In these cities, personal services, agri-related services, and if the capital, governance (including international political, economic, and development mediation) are important functions. Because lower value services, especially personal services, are relatively so important in these cities, and such services are delivered to a very significant extent by the informal sector, analysis of the informal sector is important. The availability of very low cost labor, can be an advantage when

combined with capital and more highly trained labor creating opportunities born of high-low synergy. For example, over time, a few talented designers in a poor urban region may be able to work with the low cost labor to develop a fashion-based footwear industry. (The talented artistic community in Hanoi is beginning to lever this type of dynamic.) Or a large informal economy could be the basis of a successful tourism industry, provided other factors such as amenity, e.g., a good climate, interesting regional scenery, are in place.

6.2 Intermediate versus Large Urban Regions

Large urban regions (e.g., urban regions with populations in excess of 4 million) are generally more spatially differentiated, i.e., between core and suburbia and peri-urban. Thus competitiveness conditions are likely to vary among sub-areas within the urban region; this needs to be taken into account in undertaking analysis. Large urban regions also have more functionally complex economies, offering a wide array of sophisticated and highly specialized services and goods.

Intermediate sized cities are more functionally specialized, and thus often more economically vulnerable. Frequently, natural resources endowments in their hinterlands are key to development, especially if their economies are based on agri-business or tourism.

Because smaller cities are frequently more economically vulnerable, surveys of key economic actors can be very important so that they avoid being blind-sided. (In smaller cities it is often easier to identify key stakeholders and interview them – they are often relatively limited in number.) Smaller cities frequently have less political, administrative, and fiscal autonomy, therefore, they have fewer levers at their disposal to implement competitiveness strategies. Thus assessment of internal strengths and weaknesses should, in many cases, be more focused in the case of smaller cities.

As noted earlier, smaller cities are usually less well known, therefore, it is often more important for them to promote an image and profile. In many cases, smaller cities possess considerable amenity, e.g., Chiang Mai, Thailand or Valparaiso in Chile. This amenity can represent a compensating asset both in terms of competitiveness and in image relative to large urban regions. These cities often capture large shares of tourism, which can trigger the development of a health and service economy. In some cases, e.g., Phuket Thailand, these developments have created a platform to attract high value, footloose activities, such as consulting firms. Thus analysis of amenity should be a key component of urban economic competitiveness in such cities.

In smaller cities, telecommunications can be a bottleneck to competitiveness, for example, internet servers frequently offer a narrower range of services than in large city regions. Yet telecommunication access is more important in remote centers to overcome the lack of specialized services and suppliers, and small local markets. Thus in assessing competitiveness of smaller cities, it is important to assess their telecommunications services, including any shortcomings.

Because smaller cities often have more specialized economies, e.g., tourism, agri-business, or port functions, meeting specialized labor requirements in these economies can be very important – more important than in larger urban regions. And, related to the foregoing, national or sub-national competitiveness, rather than global competitiveness, may be a more appropriate frame of reference in assessing the urban economies of some smaller developing cities.

6.3 Transitional Cities

In transitional economy cities, the existence of (or progress towards developing) effective land and property markets is often a key component of competitiveness. Business and banking culture, and the existence of enforceable contract law, are also important variables related to competitiveness in transitional cities. And, international-national-local mediation skills are often a source of concern in such cities, and as such, an important element of competitiveness assessment. Often transitional cities, such as many Eastern European and Vietnamese cities, offer good value in terms of the skill levels relative to wages. It is important to probe for this type of competitive advantage in undertaking competitiveness assessment in transitional cities.

6.4 Crisis Cities

Urban crises in developing country urban regions have many causes, the discussion below focuses on economic crises.

When cities are experiencing economic crisis, they are often more open to change. Thus their potential competitiveness often changes rapidly, depending on the degree and speed of adaptation within the urban region. Also, given the concern with monitoring of change to forge policy instruments, e.g., employment creation, resources are often more available for surveying of socio-economic conditions. Of course, change during crises is not always positive. Economic stress can precipitate other types of crisis, e.g., political instability or ethnic clashes that exacerbate economic crises, sometimes making the urban region totally unattractive to business for security reasons. Cities in crisis frequently reposition themselves (up or down) in urban systems, capital flows fluctuate considerably, and external images of these cities may change quickly, as in the case of Jakarta, Indonesia during the 1997-1999 Asian Crisis. Competitiveness assessment needs to reflect these rapidly changing elements of competitiveness in cities experiencing economic, political or civic crisis.

7. RAPID ASSESSMENT

Section 5 listed a wide array of techniques available to assess urban competitiveness. The data and amount of time and resources available to conduct the assessment will determine how extensive or thorough the assessment should be. In addition, the focus of an urban competitiveness assessment should vary according to the issues and concerns of the urban region. For example, if the mission were

to create a core urban economic base focusing on a petroleum servicing cluster, the competitiveness assessment should be customized accordingly.

In Section 4 (Figure 3), a recommended assessment approach was presented. However, some regions will not have access to sufficient resources or information to fully implement such an approach. In situations in which resources are constrained, some steps could be omitted and techniques employed could be simplified. For example, steps 2, 4, and parts of steps 7 and 8, e.g., scenarios and network mapping, could be eliminated from the recommended approach presented in Figure 3. Labor intensive or time consuming techniques, such as industrial surveys, also could be eliminated.

8. CURRENT GAPS

What are the current gaps in competitiveness assessment in developing country urban regions?

Firstly, worldwide, there is a need to refocus competitiveness analysis on sub-national units. Approaches and techniques are still being worked out. Over the last several decades, competitiveness analysis has focused on nation states.[10] Some of the key variables include governance, taxes, corruption, political interference, economic openness. Can these same sets of variables be transposed to the sub-national level where concerns and policy levers are different? Probably not, because sub-national governments control different factors, and utilize different levers, related to competitiveness. More work needs to be done in identifying and operationalizing internationally comparable, and accepted, indicators for sub-national competitiveness. Ironically, journalists and periodical research staff appear to be leading the way in many ways, at least in terms of profile.

There is a need for guidelines, manuals, and best practice summaries on urban economic assessment / competitiveness profiling for developing cities.

Another problem is scepticism in some quarters regarding the usefulness of competitiveness strategies. This springs from the fact that the roots and dynamics of competitiveness in urban regions are still not fully understood and subject to much debate. For example, virtually every country wants to create its own Silicon Valley, but no consensus exists as to whether such regions can be created through purposeful joint action.

Another challenge is the existence of large informal sectors in many developing country urban regions. Most conventional approaches and techniques, including most of those outlined in this paper, fail to

[10] The Competitiveness Yearbook prepared by IMD has eight Competitiveness Input Factors: Domestic Economy, Internationalization, Government, Finance, Infrastructure, Management, Science and Technology and People. Each input factor is broken down into several subfactors, and each subfactor comprises several indicators. For example, the Government input factor is broken down into national debt, government expenditure, fiscal policies, state efficiency, state involvement, and justice and security. Although the competitiveness factor rankings are based on all of the weighted criteria, the competitiveness balance sheet analysis and the evaluation of performance (strengths and weaknesses) are determined based on the value of the criteria that the *country can control*.

adequately assess the competitive value of the informal sector. The informal sector often substantially contributes to the competitiveness of a developing urban region by providing valuable services (e.g., inexpensive taxis), by providing low cost labor for production process, by exerting downward pressures on prevailing wage rates, and by leveraging the value of more skilled labor (high-low synergy, e.g., low skilled workers in the health sector leveraging scarce nurses and doctors), etc. Yet, these contributions are often ignored or significantly undervalued in contemporary competitiveness approaches / methodologies.

Another major issue in competitiveness assessment is the lack of operational techniques to assess institutional / cultural milieus. Most regional development experts now agree that social capital / networks / economic embeddedness and other characteristics are among the most important in assessing and explaining competitiveness, but these regional characteristics are very difficult to measure. Section 5.4 of this paper refers to some of these difficulties. In effect, what is most important to competitiveness and urban economic health, is the most difficult to measure.

Another gap in current practice is the lack of comparability among competitiveness studies and processes. Different cities, consulting companies, international development agencies, and academics, use different methodologies that make comparison, and learning, difficult.

Data is often not appropriate to assess competitiveness in rapidly changing urban economies. Urban economies are changing just as rapidly in developing country urban regions as in developed countries. Often, statistical agencies are completely outside "policy loops" so that the data that they collect is not particularly relevant to contemporary urban economies. Another data problem, noted earlier, is the fact that data is often not available at the urban region scale, particularly for smaller cities. Moreover, where rating agencies or journals/periodicals have taken the lead in competitiveness assessments at the sub-national level, they rarely publish disaggregated data.

Lastly, but very important, because urban competitiveness profiling and development of urban competitiveness strategies is not an established function in the vast majority of developing cities, practice is not developing quickly. Because this function has not been institutionalized in most urban regions, practise is limited which slows development of methodologies and insight

9. FUTURE DIRECTIONS

More work is needed in two areas, one would be to survey current competitiveness profiling in developing cities, e.g., Bogota (Colombia), Durban (South Africa), Penang (Malaysia), Shanghai (China). The work of major consulting companies in the urban competitiveness assessment field should be surveyed and assessed. Secondly, further methodological work on rapid competitiveness assessment should be pursued to refine an approach applicable to developing cities and to develop guidelines for its use. Such an approach could be applied, on a pilot basis, in the City Development Strategy (CDS) program's participating cities.

10. CONCLUSION

Cities will account for all net population growth in the world over the next 25 years and the vast majority (80-90%) of economic growth. Over 90% of global urban demographic growth will occur in developing cities. Thus the productivity of developing cities will substantially determine the pace and nature of global development. Productive cities will succeed in offering quality of life to the majority of their residents, economically unsuccessful cities will prove ineffective in preventing and alleviating poverty. Ironically, despite the importance of urban economies, and their competitiveness, in developing cities, very little has been done to develop approaches and techniques to assess the urban competitiveness of developing country urban regions, a prerequisite to formulation of competitiveness strategies.

APPENDIX 1: SUMMARY OF URBAN COMPETITIVE ASSESSMENT TECHNIQUES BY CATEGORY

ECONOMIC STRUCTURE	TERRITORIAL ENDOWMENTS	HUMAN RESOURCES	INSTITUTIONAL MILIEU
Economic Composition ▪ Structural changes in industry ▪ Changes in firm strategy Degree of Concentration & Diversity ▪ Intra-industry concentration ▪ Economic diversity Centrality of Industry (presence & quality of) ▪ Local customers ▪ Local capable suppliers ▪ Local competitive, related industries	Market Demographics ▪ Population by age cohort ▪ Income Distribution Location/Access Analysis ▪ Facilities inventory ▪ Network assessment ▪ Cost to key cities Infrastructure Inventory: (cost, coverage, capacity, reliability) ▪ Transportation ▪ Telecommunications ▪ Electricity and Water ▪ Industrial Estates and Zones Natural Resources Amenity ▪ Climate & natural amenities ▪ Urban environmental quality ▪ Cultural & recreation facilities ▪ Aesthetics Capital Availability ▪ Interest rates ▪ Venture capital ▪ Intermediate credit orgs ▪ Banking culture & modes Cost Structures ▪ Land & property markets ▪ Relative labor costs ▪ Cost of living ▪ Taxes ▪ Exchange rates Image ▪ International city rankings ▪ Reputation locally, nationally	Labor Force Participation ▪ Labor Force Size & Growth ▪ Average hours worked per week ▪ Un-/Under-Employment ▪ Informal Sector trends ▪ Dependency Ratios Skills & Education Profile ▪ Education and Training level ▪ Technical prowess ▪ Literacy & Language skills ▪ Computer & Internet skills Education Facilities & Curricula ▪ Enrollment trends by field ▪ Quality of programs ▪ Leading Ed / R&D institutions ▪ Job retraining Industrial Structure & Labor Force Fit ▪ Job vacancies by area vs. unemployment ▪ Turnover rates ▪ Employment growth by sector vs. Training Wage Earnings & Labor Institution ▪ Minimum Wage ▪ Prevailing wages ▪ Change in earnings by profession ▪ Payroll taxes/deductions ▪ Unionization by sector ▪ Technical & Professional Assoc.	National Governance ▪ Macroeconomic policy & political stability ▪ Corporate & personal tax structures ▪ Antitrust Laws Local Governance ▪ Local tax & business fee structure ▪ Streamlining of licensing, approvals, permitting ▪ Economic development programs and experience ▪ Local public sector capacity Champion Institutions & Individuals ▪ Charismatic mayor ▪ Effective Devt/Promo Agency ▪ City boosters ▪ High profile firm Networks & Interconnectivity ▪ Linkages between business, government and education ▪ Associational vibrancy ▪ Cross-membership rates ▪ Business support programs ▪ Inter-jurisdictional cooperation Norms & Conventions ▪ Entrepreneurship (start-ups, failures) ▪ R&D spending ▪ Local competition ▪ Corruption modes, rates ▪ Local-foreign relationships ▪ Mediation styles and venues

Source: Webster and Muller

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