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THE URBAN LENDING PROGRAM OF THE IBRD: THE  
CASE FOR COMPARATIVE URBAN INFORMATION

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February 1975

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by

Roy W. Bahl and Elliott R. Morss

Final Report

Volume I : General Considerations

Urban and Regional Economics Division  
Development Economics Department  
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VOLUME I: General Considerations

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VOLUME I: GENERAL CONSIDERATIONS

INTRODUCTION

The goal of this research is to demonstrate that a comparative urban data system for developing countries is both feasible to construct and potentially useful as an analytical base to guide future development of the Bank's urban lending program. Feasibility is demonstrated in terms of an a priori formulation of an urban data checklist, and in terms of a presentation of the specified data for four cities -- Seoul, Korea; Ahmedabad, India; Kingston, Jamaica; and Lima, Peru. The case for the utility of the data system is argued below, and then demonstrated in terms of a sample comparative analysis of the data for these four cities. To accomplish these ends, the following activities were undertaken: 1/

- (a) Compiling a preliminary statement of urban data that would be useful for Bank work;
- (b) Determining which of these data are in fact available on a comparable basis and thus identifying major data gaps;
- (c) Identifying feasible proxies where important data items are unavailable;
- (d) Illustrating possibilities for utilizing such data for comparative analysis among urban areas.

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1/ For a statement of the original study plan, see Roy Bahl and Elliott Morss, "Urban and Regional Data: A Preliminary Appraisal of World Bank Needs and Available Information" (Draft Study Plan, November 19, 1971.)

There were three major stages to this research project.

First, a preliminary data list was developed on the basis of a priori reasoning and consultation with analysts within and outside of the Bank working on various aspects of urban problems. 1/ The second stage involved taking a revised data list into four cities: Ahmedabad, India; Kingston, Jamaica; Lima, Peru; and Seoul, Korea. In these cities, an attempt was made to collect these data and/or determine the kind of effort which would be required to obtain the missing data. The final stage of the work involved (1) assembling, studying, and presenting the available comparable data or proxy measures (see Volume III) and (2) illustrating some of the uses of such comparisons (see Volume II). Although Volume II is the more readable of the two, it is important that it be regarded for what it is: i.e., essentially illustrative. Volume III is, in fact, the heart of this work, depicting as it does -- for the judicious use of various practitioners -- the full range of urban data that are at present generally available.

Drawing upon the results of Volumes II and III, and on mission work experience of the Urban and Regional Economics Division in Peru, 2/ Zaire, 3/ Zambia, 4/ Mexico, 5/ and the Philippines, 6/ we have, in this

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1/ These interviews are reported in "A Review of the Status of Urban and Regional Studies at Major European Institutions," (Draft, December 1, 1971.)

2/ "Peru Economic Mission: Urban and Regional Aspects," October 1972 (in two volumes).

3/ "Urban Sector Survey: Republic of Zaire," Green Cover Report, July 1973.

4/ "Zambia Urban Sector Review," Green Cover Report, July 31, 1974.

5/ "Mexico Urban Sector Survey," Draft Report, August 1974.

6/ "Philippines - Urban Sector Survey," White Cover Report, January 1975.

volume, summarized our findings on urban data availability and on the feasibility of its collection. Finally, we offer a set of recommendations as to how the Bank may act to increase the availability of urban data.

This is intended to be a preliminary study, and as should be expected, it is subject to a number of limitations. While many of these shortcomings are covered in appropriate sections in the text below, two would seem worth mentioning in this introduction. The first is the absence of any consideration of the possibilities for Bank use of attitude survey data. There is clearly a place for information on citizen's views on problem severity in the process of Bank project selection. Originally, survey data had been included as part of the materials to be assembled for the four-city study, but they were dropped because of time and resource limitations. The other general limitation has to do with presentation -- there is little concern here for finding the most illuminating ways in which to present and compare data. Clearly, some visual/mapping techniques are, in some instances, vastly superior to the straight tabular presentation used in this study, but to develop these would have called for additional time and resources that simply were not available.

#### I. BANK NEEDS FOR COMPARATIVE URBAN DATA

The World Bank's need for comparative urban data grows out of a number of problems related to IBRD lending practices with respect to urban-oriented projects. These problems are of three types, which are not mutually exclusive, and are of varying degrees of seriousness. First, as one of the inputs into decision-making, the Bank calculates sectoral

rates of return. Because of conceptual and empirical problems of benefit measurement, and because these problems vary in severity between sectors, inter-sectoral comparisons of net project benefits are usually not made. Accordingly, projects are justified in particular cities for a particular sector, in isolation from consideration of the net benefits which might be attained from investment in other sectors and/or in other cities. With specific reference to inter-sectoral analysis, the Bank has not yet developed a uniform way of viewing the city (or the region) as an integrated unit. One approach to solving this problem would be to attempt to develop a model which is useful for policy purposes. This attempt should enjoy a high priority in the IBRD research agenda. However, since it appears that the "state of the art" will not permit development of such a model which is policy useful, one might start less ambitiously by trying to develop a set of "problem severity" or "amenity level" indicators. From these, it might be possible to develop a set of objective measures of service levels which might be used to estimate, at least crudely, the real tradeoffs involved in selecting between alternative (equal cost) investments.

A second factor adding complexity to the problem of defining the Bank's urban lending program emerges because income distribution considerations are supposed to play a role in the allocation of funds, both among cities (within or between countries) and/or among sectors. The inclusion of income distribution considerations in appraising the effects of an investment is presently performed only in a subjective way, with little possibility for evaluating similar effects for an

alternative investment or for an alternative project location. Again, a comparison of "amenity levels" in urban areas (either within or between countries) could be used as an allocation guide, if the provision of a certain service to a low income segment of the population can be viewed as effectively raising their real incomes. In such cases, evidence on comparative amenity levels may provide some basis for judgment concerning the extent to which investment of a given amount would contribute to the reduction of real income disparities.

A third problem affecting the Bank's urban lending program is the extent to which "standards" (either loan conditions, policy reform suggestions, or initially appraised service level deficiencies) are determined in a haphazard manner governed primarily by the experiences of individual analysts in other urban areas. Development and application of a comparative urban data system, which would give the analyst broader bases of objective evidence on inter-country or inter-city differences, would improve the developing of such standards.

Certainly, the existence of a comparative urban data system will not solve completely any of the above problems. Still, a comparative urban data system should make a definite contribution towards improvement in some of these areas. The following section is devoted to a discussion of the potential usefulness of comparative urban data in improving the Bank's urban lending decisions.

## II. THE UTILITY OF A COMPARATIVE URBAN DATA SYSTEM

While this research is preliminary and directed more toward the question of determining the feasibility of developing an urban data system than toward the question of defining the uses of these data in solving specific problems, it is possible to suggest such application with a

set of examples.

Comparative inter-urban analysis based on an urban data system such as that proposed here would appear to be of particular relevance to the Bank in four general areas. These have been given primary attention in this study and have guided the design of the data system presented here. They are:

- (a) the use of data for the purpose of making benchmark comparisons;
- (b) the use of data to analyze urban systems;
- (c) the use of disaggregated city data for intra-urban analysis;
- (d) the use of data to improve Bank project selection techniques.

There are apparent overlaps between these uses and the needed data subsets; however, the specific uses are sufficiently different to warrant separate treatment. In doing so, we refer to illustrative subsets of data which are relevant and available for each purpose.

Data for Benchmark Comparisons. Benchmark or problem severity comparisons entail the use of a relatively small and accessible data subset to capture in as brief a way as possible a comprehensive picture of a city, the nature and scope of its problems and the steps that are being taken to deal with these problems. These data must be standardized so as to permit inter-city comparisons and eventually, one would hope, the comparisons of individual city data with a set of "norms." These data would appear to be useful for both intra-country and cross-national urban analysis, and would provide:

- (a) background descriptive information;
- (b) measures of problem severity;
- (c) measures of sectoral performance which could be used to guide policy advice.

With respect to the first of these, limited data subsets may be useful in helping the analyst gauge the general nature of the city and how it might be different from other cities. For example, in examining the four cities in this case study, the indication is that Kingston is "different" in that it has a housing deficiency which is large relative to the level of other amenities offered to local residents, and in that this "deficit" is due less to a lack of resources than to implicit if not explicit choice among policy and investment alternatives. Similarly, Lima is "different" in that transportation system relies on motor vehicles, and in particular the private automobile, to a much greater extent than would seem indicated by the level of its income.

As another example, consider the use of comparative urban data in guiding Bank advice as to the formulation of public policy. The Bank, acting as an advisor in policy matters, may find such information particularly useful in examining the degree to which "local effort" is equal across cities. For example, suppose a local government were to be responsible for a portion of a proposed Bank project (e.g., maintenance of new roads or a water supply system within a development area), but forecasted local government revenues did not appear adequate for such purposes. The question of whether city residents can afford a tax increase to support these new maintenance expenditures becomes an important concern both to the Bank and to the borrower. Evidence which suggests city "tax effort" to be far above or below the average for LDC cities of similar size, per capita income levels, and the like would

provide some guidance in recommending fiscal actions. Numerous similar uses might be suggested, e.g., calculation of the fraction of income which is "normal" for water charges, and of the "average" relationship of public education expenditures to income or population. In addition, the investigation of "abnormal" situations could yield fruitful new knowledge.

For purposes such as these, it is important that statistical information be readily available for a broad cross-section of cities so that at least crude averages or norms may eventually be established. The alternative, i.e., to base such norms on the experience of a very few analysts in a limited number of cities, is clearly less desirable.

Before presenting the "benchmark data" collected for the four cities visited on the project, the method of arriving at this specific data set should be mentioned. The major criterion is to restrict the data set to the minimum needed to gain an overview of relevant characteristics of the city. The selection of specific variables for this list is further constrained by consideration of which information could be collected with a "reasonable" effort.

These benchmark data are presented in Table I.1. <sup>1/</sup> A more extended discussion of how they might be used is given in Volume II of this report. The detailed data sets are presented in Volume III.

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<sup>1/</sup> Unless otherwise indicated, the data presented in Table I.1 cover metropolitan areas as distinct from city areas. An extended discussion of alternative definitions of "Urban" or "Metropolitan" is given in Volume II.

Table I.1: BENCHMARK DATA <sup>1/</sup>

	<u>Ahmedabad</u>	<u>Kingston</u>	<u>Lima</u>	<u>Seoul</u>
<u>Demography</u>				
City population	1,588,378	506,200	3,048,683	5,536,377
City population as percent of national population	2.90	27.19	21.76	17.59
Average annual rate of city population growth	2.8	2.7	5.8	10.2
Ratio of city to national population growth rates	127.3	192.9	187.1	443.5
City population per square kilometer	12,822	1,121	4,380	9,031
Population density of "central" area of city	96,349	5,392	18,158	30,170
Average family size	5.1	3.8	N.A.	5.04
<u>Income and Employment</u>				
City per capita income (\$US)	76	774	898	340
Ratio of city per capita income to national per capita income	0.97	1.50	2.09	1.70
Average annual growth in city real per capita income	0.1	0.7	6.3	3.3
Ratio of city to national growth in per capita income	N.A.	1.55	1.00	0.82
Percent of income accruing to lowest 40 percent of income earners	N.A.	10	8	17
Manufacturing employment as a percent of total city employment	50.1	27.6	29.0	22.7
City unemployment rate	1.9	25.0	7.7	4.5
<u>Education</u>				
City literacy rate	48.7	94.5	95.0	92.7
Percent of school age population enrolled in elementary school for city	23.5	53.0	48.8	over 70.0
Ratio of students to teachers in elementary school for city	21	48	43	36
Elementary school current expenditures per capita (\$US)	3.00	N.C. <u>2/</u>	N.C. <u>2/</u>	3.07
<u>Health</u>				
Average life expectancy for city residents	N.A. <u>3/</u>	N.A. <u>3/</u>	N.A. <u>3/</u>	N.A. <u>3/</u>
Mortality rates for three most important non-old age related diseases	N.A. <u>4/</u>	N.A. <u>4/</u>	N.A. <u>4/</u>	N.A. <u>4/</u>
Morbidity rates for three most important non-old age related diseases	N.A. <u>4/</u>	N.A. <u>4/</u>	N.A. <u>4/</u>	N.A. <u>4/</u>
Doctors per 1000 population	0.2	1.1	0.5	1.0
Hospital beds per 1000 population	0.8	10.5	2.3	1.3

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Table I.1 (continued)

	<u>Ahmedabad</u>	<u>Kingston</u>	<u>Lima</u>	<u>Seoul</u>
<u>Physical and Social Environment</u>				
<u>Temperature (in centigrade)</u>				
i) Average annual	24.0	N.C. 2/	N.C. 2/	11.3
ii) Maximum (average for one month)	34.2	31.1	N.C. 2/	16.1
iii) Minimum (average for one month)	20.5	22.8	N.C. 2/	7.5
<u>Precipitation (in mm)</u>				
i) Average annual	823.1	1594.7	N.C. 2/	1708.2
ii) Maximum (average for one month)	316.3	271.7	N.C. 2/	465.1
iii) Minimum (average for one month)	0.3	45.2	N.C. 2/	5.9
<u>Air Quality</u>				
i) SO <sub>2</sub> levels (mg/m <sup>3</sup> ) (at selected times)	8.78	0.012	18.9	27.6
ii) NO <sub>2</sub> levels (mg/m <sup>3</sup> ) (at selected times)	7.37	N.A.	16.5	90.0
iii) Suspended particles (mg/m <sup>3</sup> ) (at selected times)	528.0	60.0	117.0	3.1
<u>Water Quality</u>				
Highest BOD levels (mg/l)	67	44	N.A.	39.5
Homicides per 1000 population	N.C.	N.C.	N.C.	N.C.
Thefts per 1000 population	N.C.	N.C.	N.C.	N.C.
<u>Housing and Land Use</u>				
Percent of city population living in substandard housing units	33.7	30.0 5/	N.A.	46.5 5/
Percent of city population without clearly defined right to rental or ownership of living quarters 6/	23.6	1.14	33.2	21.9
Persons per housing unit	5.25	3.97	5.20	9.22
Residential floor space per city resident (in square meters)	2.83	2.06	N.A.	3.15
Public low-income housing "rents" as a percent of average city income	57	18	14	38
<u>Public Utilities</u>				
Per capita residential consumption of:				
i) Water (in liters per day after allowance for estimated loss)	194.7	142.8	N.C. 2/	44.1
ii) Electricity (in kilowatt hours)	64	212	202	72
Residential Percent of:				
i) Total water consumption	N.C. 2/	66.0	N.C. 2/	55.5
ii) Total electricity consumption	9.1	25.4	31.0	17.9
Average annual charge (\$US) for residential consumption of:				
i) Water	1.47	7.94	3.12	3.72
ii) Electricity	5.83	43.32	15.07	24.48
Telephone subscribers per 1000 population	0.96	5.32	3.55	3.68

Table I.1:(continued)

	Ahmedabad	Kingston	Lima	Seoul
<u>Transportation</u>				
Transport-related fatalities per 1000 population	.009	.239	.210	.096
Registered vehicles per 1000 population				
i) Private automobiles	5.81	N.C. <u>2/</u>	47.61	5.46
ii) Buses	0.57	0.81	0.79	0.88
iii) Taxis	0.15	3.79	2.00	2.08
Average daily passengers as percent of bus capacity	16.53	11.75	7.75	12.23
Average bus fares (\$US)	0.03	0.07	0.09	0.05
<u>Public Finance</u>				
Local government current revenues as percent of total government expenditures in city	83.1	N.C. <u>2/</u>	N.C. <u>2/</u>	47.2
Total average taxes paid per city resident (\$US)	11.14	9.02	N.C. <u>2/</u>	24.03
Inter-governmental transfers as a percent of city budget	6.24	37.51	N.C. <u>2/</u>	16.51
City property tax collection as a percent of total city tax collections	35.90	32.80	N.C. <u>2/</u>	16.70

Notes:

N.A. Not available.

N.C. Possibly available, but not collected.

1/ The primary sources for these data are presented in the appropriate tables and accompanying footnotes in Volume III. Where these data are subject to major measurement problems, mention is made in Volume III and not repeated here.

2/ These data could be assembled from available records.

3/ National level data do exist (see Annex Tables III 26-28), but city level data do not.

4/ Data are not available at either the city or national level (for what does exist, see Annex Table III-29).

5/ Estimated housing deficit times average family size divided by city population.

6/ Defined to include squatters only.

Data to Analyze Urban Systems. A city may be characterized in terms of a complex set of interrelationships, and it is clear that policymakers would benefit from a better understanding of these relationships than they now possess. The primary use of the comparative data discussed in this section is to provide a data base for detailed research on these interrelations. In short these data are intended to permit one to go beyond the limited measures of problem severity and sector performance (which are directly relevant to Bank operational work); they are more pointed to facilitating the research necessary to gain an understanding of the scope and nature of urban problems and their solutions.

Comparative research on city systems may require either inter-country or intra-country urban comparisons. First, there is a set of questions for which country locations are of little relevance and so international comparisons are analytically valid. For example, a considerable amount can be learned about what constitutes an efficient transportation system from an international comparison of cities. In any case, such analysis is the only resort when comparable cities within national boundaries do not exist, as in the case of countries with only one or two large, densely populated cities. For another set of questions, an intra-country comparison of cities would be more appropriate, e.g., when the aim of the research is to aid in the creation of a regional development strategy. It is also probable that when the focus is on the urban problem of smaller cities in a particular country, intra-country city comparisons are more desirable both because of the country-specific nature of the problems and because there are usually

enough small cities within individual countries to make meaningful comparisons. The interviews with Bank analysts undertaken at the outset of this project suggest that many of the important research questions facing the Bank could be more effectively addressed by expanding the data set presented above.

Numerous research questions might be addressed with comparative urban data. A particularly timely one is the analysis of the dimensions of urban poverty. These dimensions include unequal income distributions, low public service levels, high unemployment and underemployment rates, poor housing, congestion, and high cost utilities and transportation services. With appropriate cross-section data, these characteristics might be measured and their intra-urban variations explained. Such an empirical analysis is not now possible because cross-national data are not readily available from a central source. Other examples of the usefulness of cross-section analysis based on urban data abound, e.g., research on the price elasticities of transportation choices, energy related questions such as whether cities can substitute lower cost fuels for petroleum, and at what costs in terms of air and water quality.

The additional data necessary for such analyses, and a note as to their likely availability, are presented in Table I.2. While this presentation indicates that much of the needed data are not readily available from regular government statistics, it should be noted that many of these data can be found in special urban studies carried out by government, university, or other researchers. A number of such longer term planning studies have been carried out (See Table I.3). Special

Table I.2: DATA AVAILABILITY FOR ADDITIONAL  
BENCHMARK MEASURES

Variable	Code for <sup>1/</sup> Availability
<u>Demography</u>	
City age-specific fertility rates	C
National age-specific fertility rates	C
Sex ratio for working age population	A
Average annual growth rate of city attributable to fertility rate	A
Average annual gross migration rates:	
i) to city	B
ii) from city	B
<u>Income and Employment</u>	
No additions to Benchmark Data List	
<u>Education</u>	
Ratio of percent of school age population enrolled in elementary school to percent of total population having completed elementary school	B
Percent of school age population enrolled in secondary school	A
Ratio of percent of school aged population enrolled in secondary school to percent of total population having completed secondary school	A
Ratio of students to teachers in secondary schools	A
Current secondary school expenditure per student	A
Floor area per student for:	
i) primary schools	B
ii) secondary schools	B
Percent distribution of teachers by highest degree for:	
i) elementary schools	B
ii) secondary schools	B
Secondary school graduates as percent of modern sector employment	C
Ratio of population having completed elementary school to population having completed secondary school	A
<u>Health</u>	
Nurses per 1000 population	A
Hospital occupancy rates	A
Percent of hospital patients from the poorest 40 percent population	C
Ratio of public hospital beds to private hospital beds	B
Percent of poorest 40 percent of population covered by comprehensive medical insurance plan	C
<u>Physical and Social Environment</u>	
No additions to Benchmark Data List	
<u>Housing and Land Use</u>	
Distribution of housing stock by degree of permanency of structure	C
Distribution of housing stock by age	C
Percent of public housing units occupied by poorest 40 percent of urban population	C
Average annual rate of increase in housing stock in recent years	B
Mortgage terms	A
Housing construction costs, per m <sup>2</sup> of floor space	C
Average city rent as a percent of average city income	C
Percent of city area zoned residential	A
Number of dwellings per hectare of residential land in city	C
Percent of housing units with:	
i) piped-in water	B
ii) sewer connections	B
iii) electricity	B

Table I.2: DATA AVAILABILITY FOR ADDITIONAL BENCHMARK MEASURES

Variable	Code for <sup>1/</sup> Availability
<u>Demography</u>	
City age-specific fertility rates	C
National age-specific fertility rates	C
Sex ratio for working age population	A
Average annual growth rate of city attributable to fertility rate	A
Average annual gross migration rates:	
i) to city	B
ii) from city	B
<u>Income and Employment</u>	
No additions to Benchmark Data List	
<u>Education</u>	
Ratio of percent of school age population enrolled in elementary school to percent of total population having completed elementary school	B
Percent of school age population enrolled in secondary school	A
Ratio of percent of school aged population enrolled in secondary school to percent of total population having completed secondary school	A
Ratio of students to teachers in secondary schools	A
Current secondary school expenditure per student	A
Floor area per student for:	
i) primary schools	B
ii) secondary schools	B
Percent distribution of teachers by highest degree for:	
i) elementary schools	B
ii) secondary schools	B
Secondary school graduates as percent of modern sector employment	C
Ratio of population having completed elementary school to population having completed secondary school	A
<u>Health</u>	
Nurses per 1000 population	A
Hospital occupancy rates	A
Percent of hospital patients from the poorest 40 percent population	C
Ratio of public hospital beds to private hospital beds	B
Percent of poorest 40 percent of population covered by comprehensive medical insurance plan	C
<u>Physical and Social Environment</u>	
No additions to Benchmark Data List	
<u>Housing and Land Use</u>	
Distribution of housing stock by degree of permanency of structure	C
Distribution of housing stock by age	C
Percent of public housing units occupied by poorest 40 percent of urban population	C
Average annual rate of increase in housing stock in recent years	B.
Mortgage terms	A
Housing construction costs, per m <sup>2</sup> of floor space	C
Average city rent as a percent of average city income	C
Percent of city area zoned residential	A
Number of dwellings per hectare of residential land in city	C
Percent of housing units with:	
i) piped-in water	B
ii) sewer connections	B
iii) electricity	B

Table I.2: (continued)

Variable	Code for Availability
<u>Public Utilities</u>	
Residential charges for:	
i) water	A
ii) electricity	A
iii) other important fuels	A
Industrial and commercial charges for:	
i) water	A
ii) electricity	A
iii) other important fuels	A
Residential consumption of:	
i) water	A
ii) electricity	A
iii) other important fuels	A
Industrial and commercial consumption of:	
i) water	A
ii) electricity	A
iii) other important fuels	A
Government charges for:	
i) water	A
ii) electricity	A
iii) other important fuels	A
Government consumption of:	
i) water	B
ii) electricity	B
iii) other important fuels	B
Volume and cost of energy for electricity generation, by source	A
Average daily number of hours of water service:	
i) for residential use	B
ii) for industrial use	B
Ratio of number of persons on waiting lists to number of telephone subscribers	A
<u>Transportation</u>	
Per capita average daily number of trips using vehicles, disaggregated by type of vehicle	C
Length of bus lines per km <sup>2</sup> of metropolitan area	B
Frequency of stops per kilometer within metropolitan area:	
i) for buses	B
ii) for passenger trains	B
Average speed within metropolitan area:	
i) for buses	B
ii) for trains	B
Percent distribution of age of public vehicles by type	B
Average percent of public and private vehicles inoperative due to mechanical problems	B
Per capita annual fuel consumption:	
i) for autos	B
ii) for buses	B
iii) for trains	B
Fuel Prices:	
i) gasoline by type	A
ii) diesel fuel by type	A
Carrying capacity of public transport as a percent of total city population	B

Table I.2: (continued)

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Variable	Code for Availability
<u>Public Finance</u>	
Breakdown of local government revenues from all sources	A
Breakdown of local government administered expenditures by function and by source of finance	A
Functional breakdown of expenditures made in city not administered by city government, by administering unit and source of finance	A
Total taxes paid by city residents as a percent of total city income	A
Definition of tax base and tax rates for major city taxes	A
Description of basis for other city revenue source collections	A

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A = Generally published information, readily available.

B = Generally data could be derived from available records.

C = Generally data available only if special study has been done.

studies have been completed in other areas, e.g., public finance, migration, land use, health, water systems; however, these are rapidly outdated, not regularly carried out, and the data included are not sufficiently standardized to permit inter-city comparisons. Hence their utility for the purposes at hand is questionable.

Table I.3: AVAILABILITY OF MAJOR URBAN PLANNING STUDIES

	<u>Seoul</u>	<u>Ahmedabad</u>	<u>Lima</u>	<u>Kingston</u>
Census with Data Disaggregated for Urban Areas	1960 1966 1970	(1961) (1971)	(1961) (1972)	(1960) (1970)
Development Plan <u>1/</u>	1970	1970	1972 <u>2/</u>	<u>3/</u>
Land Use Map	1970	1970	1967	1972
Transportation Survey	1970	..	1967	<u>4/</u>
Special Study of Low-Income Housing - Public Services	1970	1968	1972 <u>5/</u>	1971

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- 1/ Refers to the existence of a plan whether or not it has been approved.  
2/ A development plan was in the final stages of preparation at the time of our visit; this was presumably completed before the end of the year.  
3/ In preparation.  
4/ Partial.  
5/ Several in recent years.

Disaggregated City Data. Measurement and understanding of some of the most important urban problems require the disaggregation of urban data. In some cases, data disaggregated by intra-city spatial units (e.g., inter-district or core city-suburb) are required; for other purposes, data broken down by intra-city economic or social units (e.g., households grouped by income bracket or forms grouped by industry or size) are needed.

There are also instances in which technological considerations will determine the most meaningful data disaggregation, e.g., when economies of scale in the delivery of certain city services call for certain geographic groupings of data.

While there is frequently a considerable amount of disaggregated data available, the breakdowns are often based upon political or legal boundaries rather than on criteria relevant for the analysis of city systems, e.g., administrative wards, election districts. The creation of the needed data disaggregates would require in many cases a massive effort that cannot be justified at this time. However, our experience suggests that there are a few priority areas in which a modest effort to collect such data should be launched, and where the returns might be considerable.

Spatially disaggregated data to analyze public service level disparities within metropolitan areas would be particularly useful in establishing intra-urban variations in the level of amenities available, and perhaps useful in the selection of possibilities for project location. Such data would enable analyses of how/whether certain public sector projects affect the distribution of real income.

Bank Project Selection. Some of the urban data described above could play a useful role in the selection of Bank projects. To illustrate how these data might be so used, it is appropriate to outline various approaches to project selection.

Conceptually, the decision to proceed with a project depends basically on the conclusion that the benefits resulting from a project

exceed its opportunity costs. It is well recognized within the Bank that this decision rule is subject to a great many conceptual and measurement problems. Benefit/cost analysis remains an imprecise technique, even though praiseworthy efforts have been made to attach monetary values to the time stream of economic and social costs and benefits. For example, there is no agreed-upon way to account for the distributional implications of projects. Moreover, benefit measurement is generally far from the ideal, and the dramatic changes in underlying cost conditions (such as changes in petroleum prices) suggest that complete reliance should not be placed on the benefit/cost approach in the selection of projects. Project selection procedures should include more considerations than are usually covered by benefit-cost studies.

With such an analysis, a comparative amenity or service level approach might be invoked as additional evidence in the choice among these alternatives. This approach is generally as subjective and imprecise as the normal Bank cost/benefit analysis, and is meant to be no more than supplementary evidence. An analysis such as this has as a prerequisite the existence of a set of well-conceived indicators available on a comparative basis. Such an inter-sector, inter-area analysis must begin with these comparative statistics.

Comparative data across cities in the same country may also provide an interesting first step in identifying the appropriate location for a project loan. Data on the seriousness of the housing problem in selected cities in Peru, for example, are given in Table I.4.

Table I.4: ALTERNATIVE MEASURES OF HOUSING PROBLEM SERIOUSNESS FOR SELECTED CITIES OF PERU, 1970

	Percent of Population Living in Pueblos <u>Jovenes</u>	Percent of Houses with in-house <u>Running Water</u>	Percent of Houses with non-dirt <u>floor</u>	Percent of Houses with <u>Electricity</u>
Arequipa	40	71	78	79
Cuzco	18	81	54	79
Chiclayo	38	60	65	60
Chimbote	95	n.a.	n.a.	n.a.
Piura	46	72	58	58
Trujillo	62	58	64	50
Lima-Callao	26	79	89	85

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Source: Urban and Regional Economics Division, Development Economics Department. "Peru Economic Mission: Urban and Regional Aspects" Volume I (October 1972).

While the figures in Table I.4 raise obvious questions about the best measure of housing quality, they uniformly suggest that the housing problem in Lima is not as serious as in other cities of the country. Hence, one could view the opportunity cost of a housing project in Lima in terms of what could be done with equivalent resources to reduce the housing gap in the other cities.

Another example of relevant information on sector performance and problem seriousness is offered by a comparison of student enrollment statistics for selected cities in Zaire (See Table I.5). These indicate that a substantially larger percent of the school-age population in Mbuji-Mayi, Lubumbashi and Matadi are attending school than is the case in Kinshasa and Bukavu. It would appear that these and other data could serve as a starting point for the identification of the appropriate location for an education loan.

Table I.5: STUDENT ENROLLMENT AS PERCENT OF SCHOOL-AGE POPULATION (5-18) FOR SELECTED CITIES IN ZAIRE

Kinshasa	60
Lubumbashi	76
Mbuji-Mayi	77
Bukavu	65
Matadi	74

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Source: Urban and Regional Economics Division, Development Economics Department, "Urban Sector Survey, Republic of Zaire," Volume II, Green Cover Report, July 1973.

### III. THE FEASIBILITY OF AN URBAN DATA SYSTEM

The feasibility of establishing an urban data system of the type described here depends on whether the appropriate data exist on a comparable basis and whether the cost of collecting these data is manageable. This pilot study documents the availability of the data, and though the cost issue is not explored here, the more relevant issue may well be whether the Bank can afford not to have these data.

While the availability of adequate data for the purposes enumerated above is the major finding of this study, there are still a number of areas where data are in short supply. This section is focused particularly on those areas where data inadequacy presents especially important problems.

Urban Boundary Problems. A basic problem faced throughout the study was how to define the boundaries of an "urban area." Each city has given considerable thought to this question, and each has developed at least one concept of what constitutes the metropolitan area. Particularly serious definitional problems arise because of the existence of

urban concentrations somewhat removed from the core city: Kingston has Spanish Town; Lima has Callao; and Seoul has Inchon. The inclusion of these areas changes the comparative statistics substantially.

Specific Data Problems. Perhaps the most serious data problem is the absence of reliable estimates of personal income. Available estimates were either little more than guesswork or the estimation procedures were not spelled out in enough detail to determine comparability. Surprisingly, it was possible to obtain consumption data from surveys of consumer expenditures.

Great difficulty was encountered in obtaining comprehensive data on the existing housing stock and on plans for new construction. Within government, housing responsibilities were often distributed among a number of agencies; acquiring data on private construction plans was even more difficult. The absence of such comprehensive data on housing creates obvious difficulties to one interested in developing a housing plan strategy for the future.

It was not possible to obtain breakdowns of central government expenditures in urban areas. Such a breakdown, both in terms of the economic impact of government expenditures and in terms of the local benefits to be derived from government expenditures, is needed to study the effect of existing government policy on the distribution of the population and on the distribution of economic activity.

To obtain a clearer understanding of the determinants of population movements, it would be useful to have data on gross migratory flows broken down by various sorts of social and economic classes.

Census data provided only information on net migratory flows, and the little data available on gross flows came from studies that were dated and very limited in coverage.

City growth depends on migration, fertility, and death rates, and meaningful analysis requires cross-classifications by age. However, age specific data was not available in any city.

For each urban area, an effort was made to obtain data that would give a comprehensive picture of commuter flows by type of transport and, perhaps more importantly, by commuter time costs. For each city, a transport study had been done in the last ten years that gave some origin-destination information, but in no case was it sufficient to provide a comprehensive picture.

#### IV. RECOMMENDATIONS CONCERNING THE COLLECTION, STORAGE, AND USES OF COMPARATIVE URBAN DATA

As was noted above a considerable amount of benchmark data has been published or is available from other readily accessible country sources. It is recommended that Bank project and country missions be briefed on the nature and availability of these data, and should obtain specified measures, depending on data availability and on the cities visited. The Urban and Regional Economics Division should head a committee, with membership from other departments, which would be responsible for defining a specific set of benchmark statistics to be gathered by these missions. These data should be integrated into the Bank's Economic and Social Data Base. In addition, the U.N. and other agencies should be encouraged to intensify their efforts to fill in important data gaps such as those described above.

As regards uses, it is recommended that any Bank document focusing on an urban area or an urban sector should at least include the available benchmark data in the first few pages, as is now done with economic and social data in Bank Economic Reports.

A coordinated effort by the Urban and Regional Economics Division and the Transportation and Urban Projects Department should be made to assemble the additional data that might be used in basic research on systems of cities. The data would be assembled gradually as part of each group's on-going research and project identification/implementation responsibilities. Efforts to update these data would not be made in the initial stage. Rather, the emphasis would be placed on collecting the most recent data for as large a number of cities as possible.

For the most part, disaggregated data by sub-areas within cities do not exist. It is recommended that the Bank provide the seed money to a limited number of urban research units in LDCs to collect some of these data for specific study purposes. Such a program should be closely watched by the Bank and integrated into the research program.