THE HOUSING INDICATORS PROGRAM: A REPORT ON PROGRESS AND PLANS FOR THE FUTURE

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1. Introduction and overview

The *Global Strategy for Shelter to the Year 2000*, adopted by the UN General Assembly in 1988, calls for a fundamental shift in governments' role in housing. Rather than attempting to provide housing directly, a policy that has usually failed, governments should play an *enabling* role. They should facilitate, energize, and support the activities of the private sector, both formal and informal, in housing development. This shift necessarily requires governments to obtain a broader overview of the housing sector as a whole and to better understand the mechanisms governing housing-sector performance. There is widespread recognition among governments that this requires better data and better, policy-oriented analysis of such data.

There is thus a need for operational tools that measure sector performance and compare it across time and space. Such tools are necessary for seeing housing policy in a more global, comparative perspective, whereby the accomplishments and lessons learned in one country can become more relevant to another. This comparative perspective may be invaluable for countries in several ways: in charting their paths; in formulating realistic development objectives; and in measuring their attainment, both over time and by comparison to other countries in similar circumstances.

The **Housing Indicators Program**, formed with this shift in mind, was initiated jointly by the United Nations Centre for Human Settlements (Habitat) and the World Bank in October 1990.

The general objective of the Housing Indicators Program is to develop conceptual, analytical, and institutional frameworks for managing the housing sector as a whole. More specifically, the Program has four aims:

1. to provide a comprehensive conceptual and analytical *framework for monitoring* the performance of the housing sector;
2. to create a set of practical tools for measuring the performance of the housing sector using *quantitative, policy-sensitive indicators* and to test these tools in a broad range of countries;

3. to provide important *new empirical information* on the high stakes of policy-making in the housing sector for societies and economies through the results of its Extensive Survey; and
4. to initiate *new institutional frameworks* that will be more appropriate for managing the housing sector, and for formulating and implementing future housing policies in the light of new research findings.

To date, the Program has taken four main steps: the study and testing of a broad range of indicators for measuring the performance of the housing sector in 52 countries through the Extensive Survey; the study of two housing sectors in greater detail (Budapest, Hungary and Manila, the Philippines) to address specific policy issues; the analysis of the data obtained from the Extensive Survey; and the use of this information to narrow the focus to a set of key indicators that could be collected and disseminated globally on a regular basis.

This report explains the rationale of the Housing Indicators Program in greater detail. It gives an overview of progress made to date and introduces the ten indicators found most suitable for regular collection. It then proposes the means by which the Program should be expanded to monitor shelter-sector performance globally in the years to come.

2. The conceptual framework

In recent years, market relations have been found to exist in the housing sector at all levels, from the most meagre squatter settlements to highly regulated rent-controlled apartments. Even in centrally planned and formerly centrally planned economies, housing is viewed increasingly as a commodity with an exchange value rather than as a good to be produced and allocated outside the marketplace. The housing sector, in turn, is being viewed as one that is driven by a variety of market forces, by supply and demand. These forces exert powerful influences throughout the sector, despite the existence of apparently distinctive submarkets.

Responsible housing policy must be sufficiently differentiated to deal with particular submarkets, such those consisting of high-rise condominiums, public housing rentals, and squatter settlements. Nonetheless, recognition of the pervasiveness of market forces has led to the view that it is still useful to look at the housing sector as a single market. Trends in one part of a housing market will, over time, be closely linked to those in other parts of the market. Policies designed to affect only the low, middle, or high-income submarkets will almost inevitably affect the performance of other submarkets, often in unintended or undesirable ways.

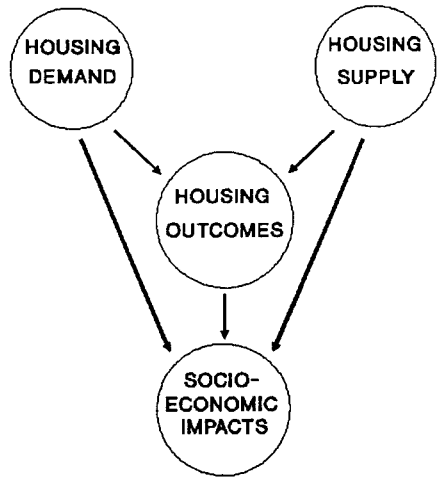
Prices, and thus housing affordability by different income groups, are determined in the market by demand and supply. Housing demand is determined by demographic conditions, such as the rate of urbanization and new household formation, as well as macro-economic conditions affecting household incomes. It is also influenced by the availability of housing finance and by government fiscal policies; e.g., taxation, subsidies, and particularly subsidies targeted to the poor.

Housing supply is affected by the availability of resource inputs, such as residential land, infrastructure, and construction materials. It is also affected by the organization of the construction industry, the availability of skilled and productive construction labor, and the dependence on imports. Both the demand and supply of housing are affected by the regulatory, institutional, and policy environment.

Housing policies and housing outcomes may, in turn, affect broader socio-economic conditions, such as the infant mortality rate, the rate of inflation, the household savings rate, manufacturing wage and productivity levels, capital formation, the balance of payments, and the government budget deficit. Figure A shows a simple model of the housing market.

While largely private housing markets produce most of the housing in most countries, this does not necessarily mean that these markets are either efficient or equitable. Nor does it mean that these markets completely satisfy all housing needs or help attain broader development goals. Housing-sector policies must be based on a positive view of how the sector actually works in a given context and, at the same time, convey specific notions of how it could work better.

Figure A



To develop a normative view of the housing sector, one must look at how the sector performs from several different perspectives. The five most important perspectives are those of housing consumers, housing producers, housing finance institutions, local governments, and central governments.[1]

Each of these perspectives focuses on different desired outcomes. While they are neither universally attainable nor entirely compatible, these outcomes may be expected to exert an influence both on behavior of the key actors and on the way that they perceive the efficacy and responsiveness of government policies and programs. These desired outcomes are:

1. **Housing consumers:** Everyone is housed, with a separate unit for every household. Housing does not take up an undue portion of household income. House prices are not subject to undue variability. Living space is adequate. Structures are safe and provide adequate protection from the elements, fire, and natural disasters. Services and amenities are available and reliable. Location provides good access to employment. Tenure is secure and protected by due process of law. Households may freely choose among different housing options and tenures (owning vs. renting). Finance is available to smooth expenses over time and allow households to save and invest. Adequate information is available to ensure efficient choice.

2. **Housing producers:** Adequate supply of residential land is available at reasonable prices. Infrastructure networks are adequate and do not hold back residential development. Building materials and equipment and sufficient skilled labor are available at reasonable prices. Entry of new firms into the residential construction sector is not impeded. The residential construction sector is not discriminated against by special tariffs or controls. Adequate financing is available. Housing production and investment can respond to changes in demand without undue delay. Contracts are enforceable. Regulations concerning land development, land use, building, land tenure, taxation, or special programs are well defined and predictable, and government application of these is efficient, timely, and uniform. Adequate information exists to enable producers to forecast housing demand with reasonable certainty. Rates of return on all types of housing investment, including rental housing, are sufficient to maintain incentives for investment.

3. **Housing finance institutions:** Housing finance institutions are permitted to compete for deposits on equal terms with other financial institutions; the role of directed credit is minimized. Housing finance institutions are not forced to compete unfairly with subsidized finance. Lending is at positive real interest rates with a sufficient margin to maintain institutional health. There are sufficient deposits of an appropriate term structure for long-term mortgage lending. Mortgage lending instruments are permitted which are in demand by households and provide adequate protection for the institution. Systems of property rights, tenure security, and foreclosure are such that the financial interests of lenders can be protected. Appropriate institutions exist that protect financial institutions against undue mortgage lending risk.

4. **Local governments:** Housing and associated infrastructures are of adequate quality to maintain public health, safety standards, and environmental quality. Infrastructure networks and services are extended quickly to all communities. The location of new communities is close to existing main networks. Land use is productive and efficient. Sufficient land can be obtained for laying infrastructure networks and providing local amenities and public services. Housing provides a major source of municipal revenues for building and maintaining infrastructure services and neighborhood amenities.

5. **Central governments**: Adequate, affordable housing is available to all. Targeted subsidies are available to help households that cannot afford minimum housing. Housing-sector policy is integrated into national social and economic planning. Housing-sector performance is monitored regularly. The housing sector contributes toward broad social and economic objectives: (1) alleviating poverty; (2) controlling inflation; (3) generating household savings and mobilizing household productive resources; (4) generating employment and income growth; (5) enabling social and spatial mobility; (6) increasing productivity; (7) generating investment growth; (8) accumulating national wealth; (9) reducing the balance of payments deficit; (10) reducing the government budget deficit; (11) developing the financial system; and (12) protecting the environment.

While the above list may be incomplete, it does provide a broad normative view of a well-functioning housing sector from the perspectives of its key actors. Needless to say, **these perspectives are not necessarily mutually consistent.** What may benefit one may damage another. Rent control, for example, may benefit families already housed but may prevent further investment in rental housing and discriminate against new residents. Reducing house prices may benefit housing seekers but reduce the asset value of those owning houses. Increasing land supply may be at the expense of environmental amenities. Stronger foreclosure laws may increase mortgage financing for all at the expense of evictions for some. Resolving these incompatible interests is one of the most fundamental tasks of an effective housing policy.

The Housing Indicators Program has taken the conceptual framework and the norms for a well-functioning housing sector as the basic framework for generating a comprehensive set of indicators for measuring housing-sector performance. Indicators were designed to cover housing supply, including the cost and availability of key inputs such as land, infrastructure, building materials, industrial organization, and the regulatory environment. Indicators of housing demand cover demographic variables, finance, and subsidies. And indicators of housing outcomes include prices, quantities, and the qualitative features of the housing stock. All key norms for a well-functioning housing sector were translated, as far as possible, into quantitative indicators. These were then tested and collected in the Extensive Survey, which is briefly described below.

3. The Extensive Survey of 52 countries

The Housing Indicators Program is involved in the collection of data from four major sources:

1. The *Extensive Survey* of Housing Indicators;
2. The *Intensive Survey* of housing indicators in selected countries (Hungary and the Philippines);
3. *Household surveys* in ten countries conducted by the World Bank during the past decade; and

4. *Additional sources of housing data* available from UN sources and from selected research publications.

The main effort in data collection in the current phase of research has concentrated on the completion of the Extensive Survey.

The objectives of this Extensive Survey were:
1. to create a *basic set of indicators* for the housing sector;
2. to obtain *current estimates* for these indicators in 50 or more countries; and
3. to establish *key relationships* among these indicators, as well as between them and key indicators of social and economic development, using cross-sectional data from the Extensive Survey in these countries.

The more practical aims of the Extensive Survey are:
1. to provide an *analytical tool for governments* for measuring the performance of the housing sector in a comparative, consistent, and policy-oriented perspective;
2. to establish *baseline data* in participating countries for new national shelter strategies and new housing-sector loans;
3. to create a *framework for comparing housing-sector performance* between cities and countries, as well as between different periods;
4. to contribute toward establishing *a new institutional framework* within countries for formulating and implementing sector-wide housing policies; and
5. to work toward the creation of *an international network of experts and institutions* capable of overseeing the development of the housing sector.

Considerable effort was expended in identifying country-based consultants with the necessary skills and reputation to conduct the Extensive Survey. The Survey focused on one major city in each country, in many cases the capital. A comprehensive set of housing indicators was defined and tested in five cities, resulting in the creation of a data-collection tool entitled *Indicator Modules and Worksheets*. This tool was supplemented by a videotaped introduction to the program. Both were sent to participating consultants during May-August, 1991.

The Extensive Survey of housing indicators requested country-based consultants to calculate values for 25 key indicators, 10 alternate indicators, and 20 regulatory audit indicators. All calculations involved the use of published data and expert estimates but did not require new household surveys. Completed returns have now been received for the cities selected in all 52 countries participating in the Survey.[2] Housing indicators were chosen to provide an overview of the performance of the housing sector in each city, including information on housing affordability, quality, finance, production, subsidies, and the workings of the regulatory and institutional environment.

Initial results were received and reviewed by the Housing Indicators Program staff during the period October 1991 - January 1992. Each return was examined for internal consistency, as well as for results that appeared anomalous and required further justification. Reviews were then sent to the country-based consultants, in

preparation for regional meetings where these results were to be discussed in greater detail.

The first regional meeting on housing indicators was hosted by the Government Housing Bank in Bangkok, Thailand in November 1991 and was attended by Asian consultants and members of the Program Staff. The second was hosted by the UN Centre for Human Settlements in Nairobi, Kenya in January 1992 and was attended by consultants from Africa, Europe, the Middle East, and North America, as well as by representatives of the UNCHS and members of the Program Staff. The third was hosted by the Ecuador Housing Bank (BEV) in Quito in February 1992 and was attended by Latin American consultants, a representative of the UNCHS, and members of the Program Staff.

The purpose of these regional meetings was to improve the collation of the initial data, to revise the survey instrument, and to discuss how to institutionalize the process of collecting housing indicators. The meetings consisted of plenary discussions focusing on conceptual and methodological issues, of workshops focused on data-gathering problems and on definitions, and of one-to-one meetings with individual consultants to discuss their particular submissions. Based on these discussions in the regional meetings, the Extensive Survey instrument was revised, and some indicators were replaced or redefined. The consultants were asked to re-submit their results by October 1992. Initial data from the Extensive Survey have already been tabulated and checked, and the analysis of the data has commenced.

In addition to the Extensive Survey, Intensive Surveys of housing indicators were conducted, involving household surveys and specific surveys of local housing markets, housing delivery systems, and housing institutions. These were undertaken in Hungary and the Philippines; to a more limited extent, Intensive Surveys were also conducted in Chile, Colombia, Ecuador, Mexico, and Venezuela. These surveys were designed to collect data which could shed light on specific policy concerns.

To date, support for the Housing Indicators Program has come mainly from the UNCHS (Habitat), in the amount of US$210,000; from the World Bank, which contributed US$639,000; from the Finnish International Development Agency amounting to $30,000; and from the US Agency for International Development, which provided US$175,000. In total, these organizations contributed US$1,054,000.

The key remaining tasks of the Program, under its present budget, are to complete the manuscript detailing the results of the Extensive Survey, to document and distribute data to country-based consultants and other interested parties, to disseminate these results through publications, and to plan the expansion of the Program to monitor shelter-sector performance on a global basis in the years to come. Once the results of the Extensive Survey are disseminated to country-based consultants, they will organize in-country seminars. These seminars, for which funds are now being sought, will be aimed at a broad constituency, bringing together public agencies at the national and municipal level, as well as private-sector representatives, non-government organizations, and community-based organizations. The main objective of these seminars will be to work towards creating a new institutional framework which could focus on the management and development of

the entire housing sector.[3] A secondary objective is to expand the collection of data indicators to other cities.[4]

4. The plan for the globalization of the Program

Deficiencies in data and lack of serious quantitative analysis considerably hamper the ability of governments to make informed choices concerning desirable housing-sector policies and other policies which have major impacts on the housing sector. There is often no clear sense of the norms in a well-functioning housing sector, or of how to bring about or move toward those norms. As a result, costly policy failures occur, inhibiting the development of the housing sector and frustrating broader development objectives. At present, the housing sector in most developing countries cannot be monitored in a fashion which would enable decision-makers to determine whether housing conditions are improving or getting worse, or whether broad housing-policy goals are being attained. There is thus strong demand among governments for a set of quantitative indicators for measuring the performance of the housing sector on a regular basis.

Put in a global context, it is impossible at present to determine how a particular city is faring in comparison to other cities or whether its performance is above or below the expected norm, given its particular circumstances. Nor is it possible to determine which policies pursued by which countries should or should not be emulated to attain better performance. This is because a typology of cities with similar housing sector profiles does not at present exist. Without such a comparative framework, global policy recommendations are found to be inapplicable to particular cities, while city-specific recommendations remain idiosyncratic and arbitrary.

Whereas individual developing countries often ensure one or another housing indicator, usually during a census which takes place every ten years, global housing indicators are practically non-existent. The United Nations Development Programme (UNDP) assembles no housing indicators in its annual *Human Development Report*. The World Bank publishes no housing indicators in its annual *World Development Report*, and the United Nations Centre for Human Settlements (Habitat) publishes a report on human settlement conditions every ten years, relying mostly on sporadic and often outdated census data.

The Housing Indicators Program aims to collect a set of key housing indicators for all countries at the city level, developing as well as developed, on a regular basis. It proposes to do so in an evolutionary manner, starting, as it already has, in more than 50 countries and expanding its coverage to include all countries by 1994. The key development objective of the globalization of the Program is to build the capacity for monitoring housing-sector performance in the developing countries while improving the soundness of housing policies and strategies through regular monitoring.

In each country, it proposes to collect housing indicator data starting with one major city, expanding the data collection to other cities in later years, and

eventually expanding the data collection effort to the urban sector as a whole and then to the rural sector as well. Collecting housing indicator data on a national level, given the enormous variety of housing conditions, does not appear sensible or meaningful for most indicators. In the first phases of the globalization of the Program, one major city will be chosen in each country, preferably a major city requiring a serious policy focus.

It is proposed that ten key housing indicators will be collected for each selected major city. This number of indicators is sufficient to cover the main features of the housing sector, as will be explained in Section 5 below. Also, it is small enough to allow for regular and systematic collection at a reasonable cost and to capture the necessarily limited attention of policy-makers. It should therefore be agreed that the ten key indicators will be collected globally every two years, covering half the member countries of the United Nations in any given year.

When a city conducts the Extensive Survey for the first time, however, it is proposed that a more thorough diagnosis be conducted, following the lines established in the present Extensive Survey. These are detailed in the revised *Indicator Worksheets and Modules* referred to above. The Worksheets require a considerably larger number of indicators, approximately 60 in all. They include basic socio-economic data not always specific to the housing sector, as well as a survey questionnaire on the regulatory and institutional environment of the housing sector. It is proposed that most of the information required by the modules will be updated on a less frequent basis, mostly every ten years, although some indicators may require an update every five or six years.

Experience with the Extensive Survey suggests that to ensure the highest quality of data, it is essential that the country-based consultants employed for the collection of the indicator data be recruited in close collaboration with the Program; they must then be trained by the Program Staff and required to communicate directly with the Program. In this manner, it is possible to develop local capacity, to supervise work effectively, and to ensure that all data conform to agreed-upon definitions and collection methods.

The comparative database will be published annually and made available to the UNCHS (Habitat) for its bi-annual reports to the Human Settlements Commission and for its *Global Report on Human Settlements*, to UNDP for its annual *Human Development Report*, and to the World Bank for its annual *World Development Report*. In addition, the Program will publish a set of manuals and tools for monitoring housing-sector performance. These may include regulatory audits, land market assessments, housing delivery system spot surveys, and institutional audits. Finally, the Program aims to publish a series of high-quality policy research papers based on data from housing indicator surveys, supplemented by data from other sources. The Program will also coordinate training activities related to housing indicators, as well as in-country seminars, both national and sub-national, and regional seminars. To ensure that the Program maintains high standards, it is proposed that its data collection and research activity be guided by an Expert Advisory Board, recruited from among the top researchers in the field on the different continents, many of whom have been associated with the Extensive Survey.

The Program will rely on regular feedback from member countries, as well as from international agencies, regarding the usefulness and cost-effectiveness of the indicators in the policy reform and housing-sector management process.[5]

A proposal for supporting the globalization of the Program has been drafted by the UNCHS (Habitat), in collaboration with the World Bank, for discussion with multi-lateral and bi-lateral donors. It requires a total of US$3-4 million for a five-year period, to be supplemented by a UNCHS (Habitat) contribution of more than US$1 million.

5. Criteria for selecting the key indicators

Two key objectives of the Housing Indicators Program are (1) to institutionalize the global collection of housing indicators and (2) to collect housing-sector data on a regular basis. This requires a small, basic set of housing indicators that will be policy sensitive, transparent, relatively easy to collect and calculate on a regular basis, and easily understood by policy-makers.

In its initial phase, the Extensive Survey collected a more comprehensive set of indicators than could probably be collected on a regular basis. The emphasis in the Extensive Survey was on research, and the main aim was to identify all indicators that could be used in understanding and measuring the performance of the housing sector. This approach was seen as particularly important, given the paucity of data on the sector in most developing countries. It has made it possible to study several alternate indicators; to find out which indicator is more transparent and easier to collect; to assess the relative costs of collecting different indicators; to eliminate indicators for which data cannot be obtained; to postpone the inclusion of important indicators (such as Targeted Subsidies and Homelessness) until reliable and cost-effective methodologies can be developed; to study the policy sensitivity of different indicators; to measure the correlation among related indicators and to find out which is the best proxy for a given set of measures; and to refine definitions and methods to make them applicable to the entire spectrum of countries and conditions.

Given the preliminary results of the Extensive Survey, as well as the results of earlier household surveys in ten countries, it has been possible to determine the main criteria, according to which a set of ten basic indicators should be selected:

1. A minimum of ten indicators is required to ensure that the **five key groups** of housing indicators (prices, quantities, housing quality, demand, and supply) are adequately covered and to ensure that all the five key **perspectives** on the housing sector (those of households, producers, financial institutions, and local and central governments) are represented.
2. **Ratios** should be preferred to absolute numbers; they contain more information, and they normalize values among different countries.
3. Indicators should have clear-cut **policy implications** and should be **policy-sensitive**. They should change with the systematic application of policy instruments. Ill-defined housing 'needs assessments' should be avoided.

4. Indicators that are not **cost-effective**, e.g. targeted subsidies or homelessness, should not be included until better methods for their collection are devised.
5. Indicators for which definitions are **not transparent and/or which require subjective judgments**, e.g. adequacy measures or composite measures requiring weighting, should not be included.
6. The basic set of indicators should be **internationally comparable**, that is, applicable to both developing and developed countries.
9. There should be a **balance** between quantity indicators (e.g. housing production) and price indicators (e.g. the rent-to-income ratio).
10. There should be a **balance** between stock measures (e.g. permanent structures) and flow measures (e.g. housing production).
11. Good housing-related indicators that are presently **collected by other international agencies** (e.g. access to water and sanitation indicators collected by WHO and UNICEF) should not be included in the basic set of housing indicators.
12. Indicators that have not been **field-tested** in several different countries and found to be transparent and cost-effective should not be included.
13. The basic set of indicators, as well as the definitions and methods of collection, should be **open-ended and subject to revision** until the analysis of the Extensive Survey is complete; these items should later be subject to periodic revisions in consultation with the Expert Advisory Group.

6. Ten key housing indicators

Given these criteria, the Program has proposed and has commenced testing ten key housing indicators. The ten indicators are divided into five main groups:

Price indicators:	Indicator 1: **The House-Price-to-Income Ratio**; and
	Indicator 2: **The Rent-to-Income Ratio.**
Quantity indicators:	Indicator 3: **Housing Production**; and
	Indicator 4: **Housing Investment.**
Quality indicators:	Indicator 5: **Floor Area per Person**;
	Indicator 6: **Permanent Structures**; and
	Indicator 7: **Unauthorized Housing.**
Demand-side indicators:	Indicator 8: **The Housing Credit Portfolio.**
Supply-side indicators:	Indicator 9: **The Land Development Multiplier**; and
	Indicator 10: **Infrastructure Expenditures per Capita.**

These are described below in greater detail. Two other important indicators, Targeted Subsidies and Homelessness, could not be included in this list. While very important, it has been impossible, for the time being, to devise simple cost-effective

and unambiguous methodologies for collecting them. These indicators may be considered again at a later stage in the Program as new methodologies are developed. Similarly, it has not been possible yet to identify a single or composite indicator that will measure the restrictiveness of regulations affecting housing-sector performance. This will be the subject of future research.

These ten key indicators by themselves cannot capture all the dimensions of the housing sector. When the initial Extensive Survey is administered, it will also contain a regulatory audit and other baseline indicators in each of the five groups cited above. The resulting data will provide several key diagnostic measures of housing-sector performance. In-depth studies and sample surveys will be needed to monitor the effects of specific policies. Individual countries may need to supplement this basic set of indicators in line with their special concerns[6], particularly regarding housing outcomes for the poor and for other groups with special needs.[7]

The significance of each indicator, its distribution across different levels of GNP per capita and across geographical regions, and the preliminary analysis on the results of the Extensive Survey are given below. For each indicator, a graph is presented showing the median reported value for five different income groups of about ten countries each. It displays the highest and lowest reported value of the indicator within each income grouping. Regional groupings are shown in Annex 1.[8]

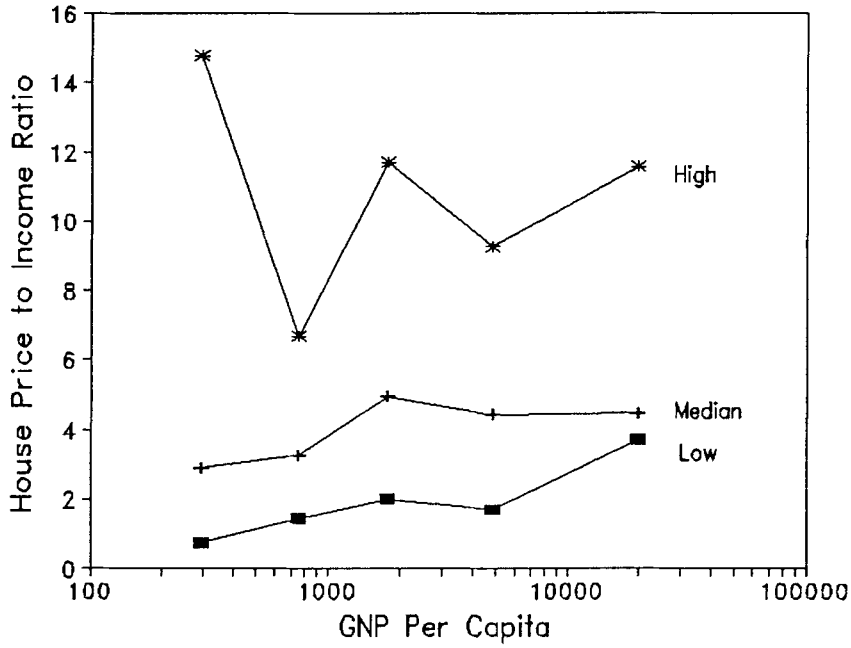
Indicator 1: The House-Price-to-Income Ratio
defined as the ratio of the median free-market price of a dwelling unit and the median annual household income.

Significance: If there is a single indicator that conveys the greatest amount of information on the overall performance of housing markets, it is the house-price-to-income ratio. It is obviously a key measure of housing affordability. When housing prices are high relative to incomes, other things being equal, a smaller fraction of the population will be able to purchase housing. As importantly, however, this indicator provides insights into several housing market dysfunctions, pointing out a variety of policy failures. When this indicator is abnormally high, for example, it is generally a sign that the housing supply system is restricted in its ability to satisfy effective demand for housing, a feature of many housing delivery systems in both market and centrally planned economies. In such cases, it is often found that housing quality and space are depressed below levels that are typical of countries with well-functioning and responsive housing delivery systems. When the indicator is abnormally low, it may suggest widespread insecurity of tenure. This situation leads to a reduced willingness of the population to invest in housing and to a lower housing quality than necessary.

Despite the broad insights that can be provided by this indicator, it has never been the subject of regular international data collection.

Findings: The mean reported house-price-to-income ratio is 5.0, ranging from a low of 0.9 to a high of 14.8. The reported median increases modestly with the level

Figure 1 **Median House-Price-to-Income Ratio for Five Income Groups of Countries**



Grouping of Countries: see Annex 1.

Table 1 Median House-Price-to-Income Ratio: Regional Distribution

Sub-Saharan Africa	2.21
South Asia	6.25
East Asia	4.15
Latin America and Caribbean	2.38
Europe, Middle East, and North Africa	6.59
Industrialized Countries	4.70

of economic development. Variation among regions is slightly more pronounced, with the highest reported ratios in Europe, the Middle East, and North Africa, and in South Asia; the lowest reported ratios are in sub-Saharan Africa, and Latin America and the Caribbean. Reported ratios of house-price-to-income are

particularly high in countries that have restricted private-property rights and which give a prominent role to the public sector in the ownership of land and housing. Other countries that have particularly high house-price-to-income ratios are those with high construction costs and high land prices. This situation is caused in part by tight regulatory environments affecting land use and housing construction, with policies such as agricultural green belts and complicated and time-consuming regulations. The house-price-to-income ratio is indicative of the general level of excess demand in housing markets. This indicator is, based on preliminary analyses, associated with reduced housing consumption (especially alternative measures of crowding and dwelling space) and reduced rates of home ownership.

Indicator 2: The Rent-to-Income Ratio
defined as the ratio of the median annual rent of a dwelling unit and the median annual household income of renters.

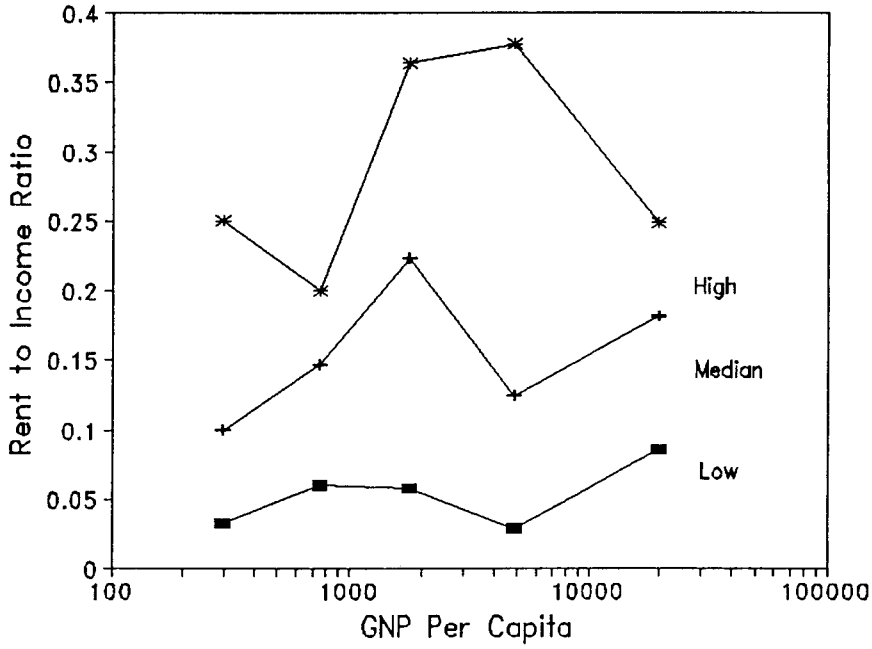
Significance: This indicator, like **Indicator 1: House-Price-to-Income Ratio**, is a key measure of housing affordability. In a well-functioning housing market, housing expenditures should not take up an undue portion of household income. As with the house-price-to-income ratio, this indicator conveys information on more than just affordability, however. A relatively high value for this indicator is often a sign that the supply of rental housing is failing to meet demand, and is sometimes associated with lower-than-necessary housing quality. A particularly low value for this indicator is a sign of the prevalence of rent-control measures that result in below-market rents but which may, in turn, depress rates of housing production and investment.

As in the case of the house-price-to-income ratio, the rent-to-income ratio is rarely reported in international compendia of housing statistics.

Findings: The mean reported rent-to-income ratio is 0.18, with a range of 0.03 to 0.38. In general, and consistent with previous evidence, the ratio of rent to income is low among low-income countries; it rises with economic development to reach a peak in middle-income developing countries, and then generally falls. Among regions, the lowest rent-to-income ratios are in sub-Saharan Africa and in Europe, Middle East, and North Africa; the latter category includes several countries with pervasive rent control. There is little reported variation among other regions in the median ratio of rent to income.

Rents are affected both by government intervention, in the form of rent controls, and by market factors. Countries with high demand pressure, as represented by high household-formation rates, have higher ratios of rent to income; those with rent control have significantly lower ratios. Ratios of rent to income appear, in turn, to be associated with residential mobility and tenure choice. When rents are low, particularly in countries with pervasive rent controls, residential mobility is considerably lower than in otherwise similar countries. When ratios of rent to income are high, owning becomes more attractive than renting, with the result that home-ownership rates increase.

Figure 2 Median Rent-to-Income Ratio for Five Income Groups of Countries



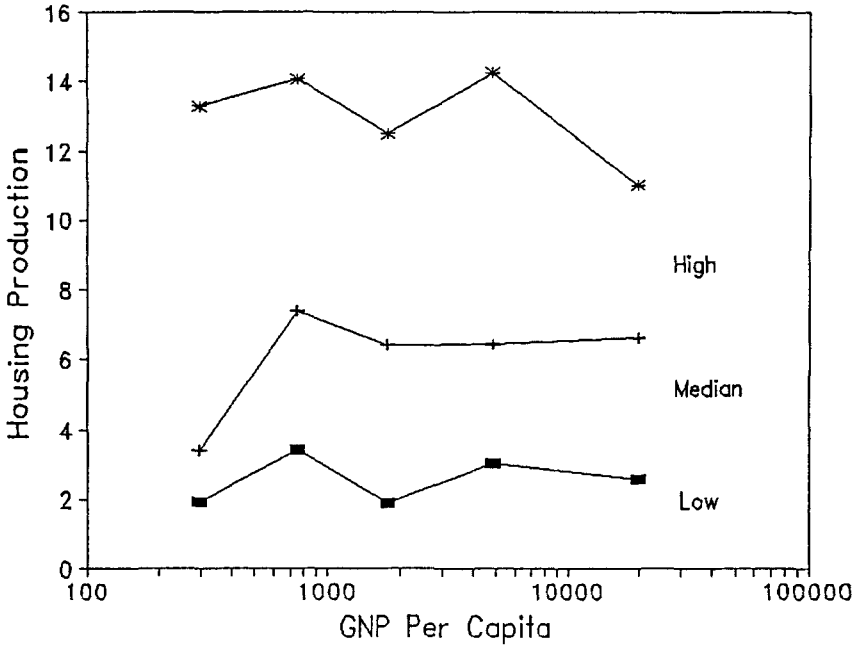
Grouping of Countries: see Annex 1.

Table 2 Median Rent-to-Income Ratio: Regional Distribution

Sub-Saharan Africa	0.10
South Asia	0.19
East Asia	0.20
Latin America and Caribbean	0.20
Europe, Middle East, and North Africa	0.06
Industrialized Countries	0.18

Indicator 3: Housing Production
defined as the total number of housing units (in both the formal and informal sectors) produced last year per 1000 population.

Figure 3 Median Housing Production for Five Income Groups of Countries



Grouping of Countries: see Annex 1.

Table 3 Median Housing Production: Regional Distribution

Sub-Saharan Africa	3.42
South Asia	6.05
East Asia	7.16
Latin America and Caribbean	6.01
Europe, Middle East, and North Africa	6.54
Industrialized Countries	6.12

Significance: This indicator is a measure of the overall level of housing construction activity. It has been the subject of relatively longstanding data collection in both developing and developed countries. Statistical coverage, however, is far from

universal and is poor for developing countries. For the 52 countries included in the Extensive Survey, production data were reported for only 29 in the *Global Report on Human Settlements*, published in 1986. In the same report, for the 35 developing countries covered by the Extensive Survey, production data was reported for only 12, and even then the data was often considerably out of date.

The indicator represents one measure of the importance of the housing sector to the broader economy. But, in combination with other data, it is also important as a measure of the ability of the housing delivery system to keep pace with increasing demand for housing. As a measure of the volume of construction, it is closely related to the level of employment in residential construction, use of intermediate inputs, and, through multiplier effects, to the overall level of economic activity.[9] Housing production can also be normalized by the size of the housing stock to give a rate of expansion of the housing stock. That, in turn, can can in turn be compared with the rate of household formation, thereby indicating whether or not housing production is keeping pace with demographic change.[10]

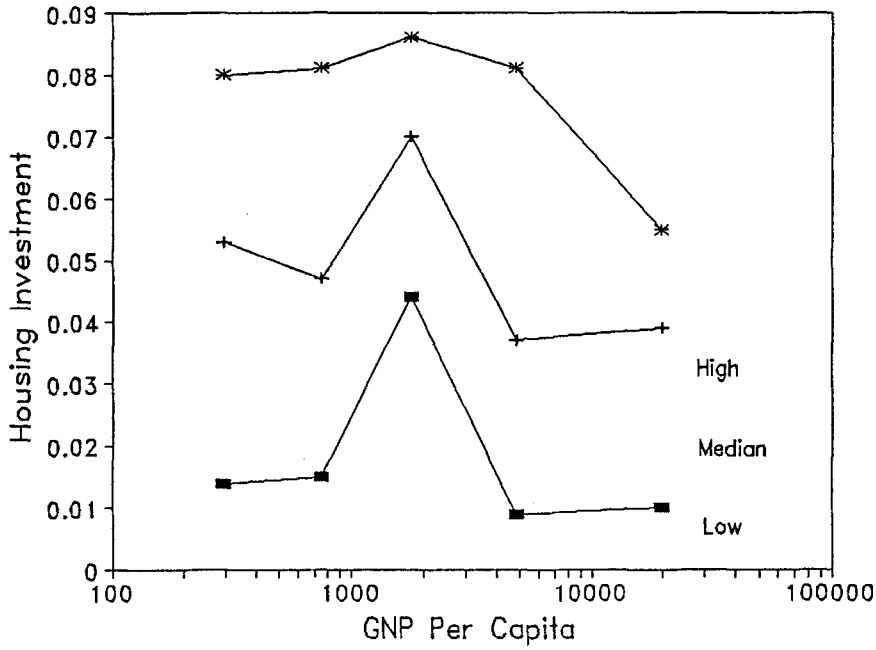
Housing production relative to the population depends on some basic demographic characteristics of the population, particularly on household size. For a given rate of household formation, a higher rate of production of housing units relative to population will be required to accommodate a population with small households than would be needed for a population with large households. Production, however, also depends on both supply and demand factors. Each of these factors depends on a number of housing policies, such as the availability of housing finance or the flexibility of land and building regulations.

Findings: Housing production per 1000 population averages 6.8 for the sample. Except for the low-income countries, where production is lowest, production per 1000 population falls modestly, though systematically, with increasing income. Among regions, rates of production are highest in East Asia and lowest in the industrialized countries. When an alternate measure of housing production is examined, the percentage rate of change of the housing stock, the trends are qualitatively identical to those for production per 1000 but are more pronounced. Comparisons of the rate of production, as a percent of the housing stock, with the rate of household formation indicate a vast difference in the ability of housing markets to cope with emerging housing demand. In all nine countries reporting household-formation rates lower than one percent, the rate of change in the housing stock is above the household-formation rate. By contrast, in countries reporting household-formation rates above three percent, 15 of 21 (85 percent) report that the housing stock is expanding less rapidly than the household-formation rate.

Indicator 4: Housing Investment
defined as the total investment in housing (in both formal and informal sectors in the urban area), as a percentage of gross city product.

Significance: This indicator measures the proportion of overall economic activity which is accounted for by housing investment. As such, it measures directly one of

Figure 4 Median Housing Investment for Five Income Groups of Countries



Grouping of Countries: see Annex 1.

Table 4 edian Housing Investment: Regional Distribution

Sub-Saharan Africa	0.023
South Asia	0.065
East Asia	0.052
Latin America and Caribbean	0.070
Europe, Middle East, and North Africa	0.064
Industrialized Countries	0.037

the two major direct contributions the housing sector makes to the economy (the other being the production of housing services, which is reflected as 'rent' in the national income accounts). Data on housing investment are notably deficient in

national income accounts data, a deficiency which is reflected in international statistical compendia on housing. The *Global Report on Human Settlements,* for example, reports data on this indicator (at the national level) for only five of the 35 developing countries covered by the Extensive Survey.

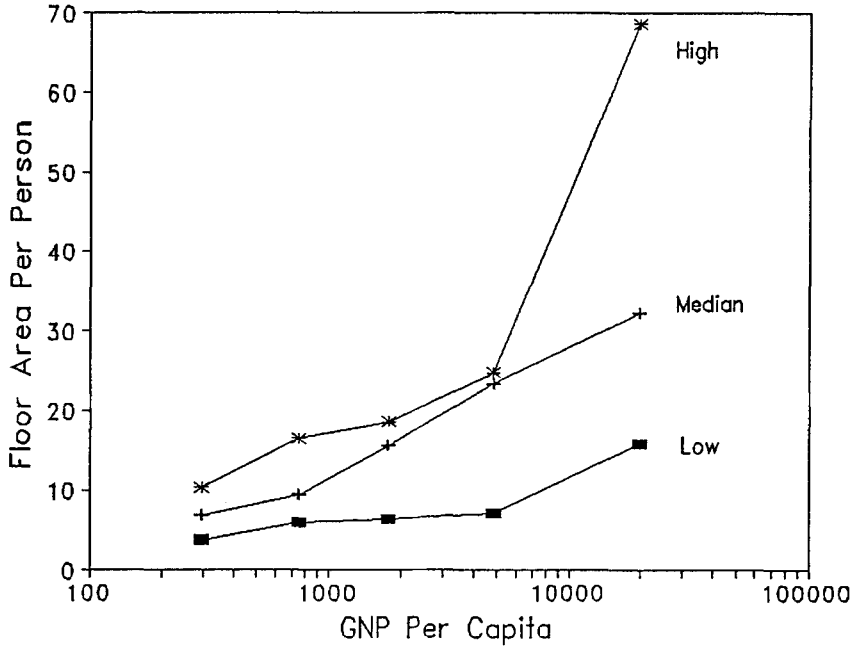
Housing investment reflects quantities produced and prices. Thus, a given value of this indicator may reflect either high unit housing costs and low volumes or low costs and high volumes of production. Investment levels are thus likely to be affected by policies influencing both demand levels and unit costs. It is also affected by the need to rebuild housing in the aftermath of war and natural disaster. Because the indicator amalgamates both prices and quantities, it is best interpreted in relation to other data, such as housing-production data and data on the physical characteristics of the housing that is being produced.

Findings: Previous studies of the determinants of housing investment have reported strong regularities in this indicator when it is analyzed at the national level. Generally speaking, housing investment as a proportion of GNP has been found to rise systematically over a broad range of economic development, to reach a peak among countries with incomes slightly below that of the lowest-income industrialized countries, and then to fall gradually with further development. Data from the *Extensive Survey* are generally consistent with previous findings, with values of the indicator lowest among countries with either very low or very high incomes and highest among countries with intermediate income levels. Examples are found of countries that have high production and low costs and low production and high costs, and of countries with unusually high levels of investment because of natural disasters. Reported investment rates are lowest in sub-Saharan Africa and industrialized countries, and highest in South Asia, Latin America and the Caribbean, and Europe, the Middle East, and North Africa.

Indicator 5: Floor Area per Person
defined as the median usable living space per person (in square meters) last year.

Significance: This indicator measures the adequacy of living space in dwellings. A low value for the indicator is a sign of overcrowding. Alternate measures of crowding have been the subject of data collection and reporting in international statistical compendia. The two most common of these are Persons per Room and Households per Dwelling Unit, each of which was included among the data collected during the first phase of the Housing Indicators Program. Of the three measures, Floor Area per Person and Persons per Room are highly variable among countries and are highly related to each other; either would be an acceptable measure of the adequacy of living space. However, based on analysis conducted in the Housing Indicators Program, the former has been shown to be the more precise and policy-sensitive of the two measures. Households per dwelling unit is only weakly related to the other two measures of crowding. The number of households per unit does not vary nearly as much as the other measures among countries.

Figure 5 Median Floor area per Person for Five Income Groups of Countries



Grouping of Countries: see Annex 1.

Table 5 Median Floor Area per Person: Regional Distribution

Sub-Saharan Africa	7.55
South Asia	7.10
East Asia	13.00
Latin America and Caribbean	15.30
Europe, Middle East, and North Africa	14.50
Industrialized Countries	31.93

Moreover, it is subject not only to variation according to cultural preferences but also according to varying definitions of 'household' among countries.

Floor area per person is the outcome, to a considerable degree, of market forces, which are, in turn, shaped by a variety of housing policies.

Findings: The mean reported floor area per person is about 18 square meters, with a range from four to 69. Floor area increases consistently with economic development, from about six square meters per person in low-income countries to 35 in high-income countries. Regional differences in this indicator are dominated by income differences; sub-Saharan Africa and South Asia have the smallest amounts of floor area per person, and industrialized countries have the highest amounts.

Notwithstanding these patterns, there is still considerable variation among countries with similar incomes, much of which appears to be attributable to policy differences that have the effect of influencing land prices and construction costs. Among mid-high and high-income countries, for example, the countries having the lowest amounts of floor area per person also have the highest land prices and construction costs. Preliminary multivariate analyses indicate that more than 80 percent of the variation in this indicator can be accounted for by three variables: GNP per capita, construction costs, and land costs. Both construction and land costs are, in turn, strongly influenced by a variety of policies.

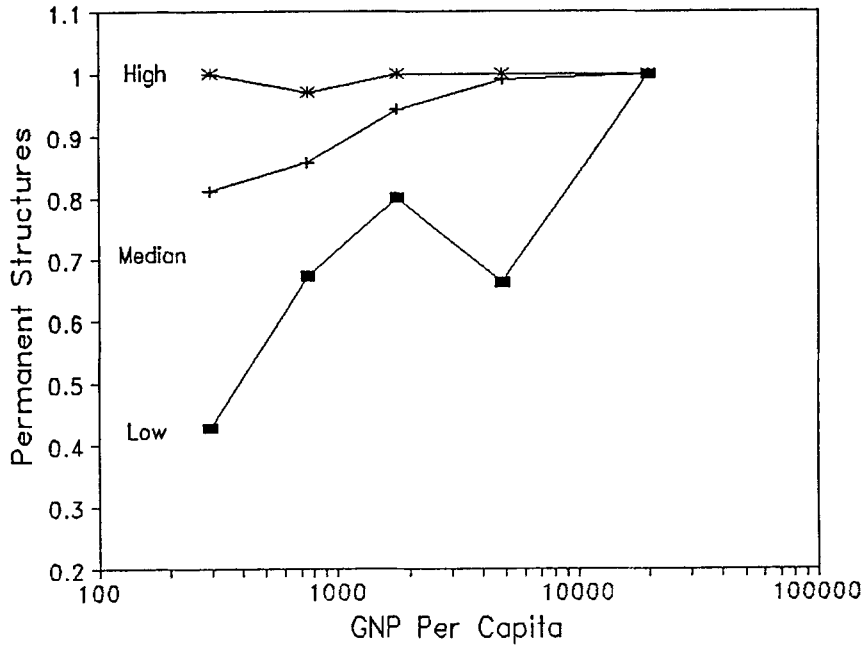
Indicator 6: Permanent Structures
defined as the percentage of housing units located in structures built of permanent materials.

Significance: This indicator is one measure of the quality of housing, particularly of its durability. Very low-quality housing is usually made of semi-permanent or temporary materials such as straw, cardboard, or cloth. These material fail to provide adequate shelter from the elements and deteriorate rapidly without frequent maintenance and repair. Permanent structures usually provide better protection from the elements, a higher standard of structural safety, and require a higher level of initial investment.

This is a primitive measure of 'housing adequacy', more precise definitions of which have been reflected in the statistical procedures of many (usually industrialized) countries. Such definitions are, however, highly idiosyncratic and require data that are often unique to particular countries. As such, indicators of housing adequacy that fully reflect the nuances in definition demanded in particular countries are unusually difficult to apply in international comparisons of housing quality. Moreover, they have never been regularly collected. The measure suggested here has the advantage that it is, in fact, highly variable from place to place, and therefore can distinguish easily among housing conditions in most developing countries. It is, in addition, relatively straightforward to measure. On the other hand, because the indicator attains its maximum value (100 percent), among countries at only a modest level of GNP per capita, further exploration needs to be conducted to develop housing-adequacy measures that permit distinctions to be made among countries at higher levels of economic development.

Findings: The mean reported proportion of dwellings in structures built of permanent building materials is 0.90, with a range of 0.43 to 1.0. The use of

Figure 6 **Median Share of Permanent Structures for Five Income Groups of Countries**



Grouping of Countries: see Annex 1.

Table 6 Median Share of Permanent Structures: Regional Distribution

Sub-Saharan Africa	0.793
South Asia	0.861
East Asia	0.943
Latin America and Caribbean	0.900
Europe, Middle East, and North Africa	0.967
Industrialized Countries	1.000

permanent building materials increases consistently with economic development, with only about two-thirds of the units in low-income cities built of permanent materials and nearly all units built of permanent materials in high-income cities. Regional variations reflect income differences, with sub-Saharan Africa and South

Asia having the least housing built of permanent materials and industrialized countries having the most.

Variation in this indicator among countries with similar incomes is considerable. Preliminary analysis suggests that both demand and supply factors are responsible for such variation. The role of rapid urban growth in creating demand pressures that cannot be instantly satisfied is apparent; cities with high growth rates have, other things being equal, lower housing quality as measured by this indicator. Cities with lower levels of residential infrastructure, as measured by either lower levels of infrastructure spending per capita or lower percentages of dwellings with plot access to water, also have comparatively fewer dwellings built of permanent materials. Cities in which the state has played a strong role in provision of housing generally have higher proportions of permanent housing than do otherwise similar cities.

Indicator 7: Unauthorized Housing

defined as the percentage of the total housing stock in the urban area that is not in compliance with current regulations.

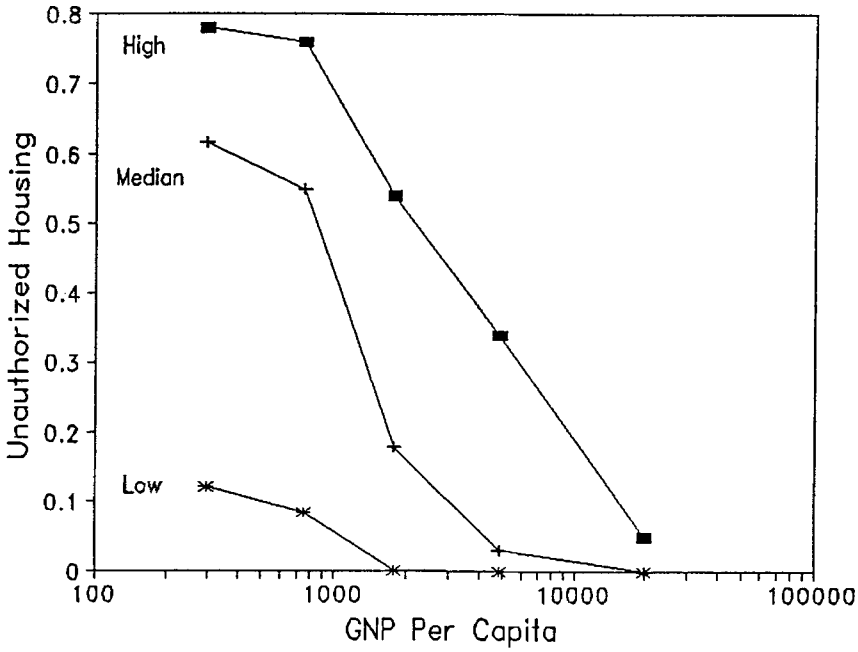
Significance: This indicator measures the extent to which the urban population is housed legally. It includes both squatter houses occupying land illegally and houses constructed without the required building, land use, or land subdivision permits. A high value for this indicator is a sign that housing development is going on without enforced government controls; it also reveals that government is either tolerant of housing which does not comply with its regulations or unable to prevent trespasses.

Considerable research has suggested that tenure security, associated with legal rights to own land and housing, strongly influences incentives to invest in upgrading of housing and community infrastructure. Tenure security apparently affects the willingness of governments to provide water, sanitation, and other services. And it seems to have great effects on property values.

No internationally comparable data have been regularly collected on the legal status of housing.

Findings: The mean reported incidence of unauthorized housing is 0.24, with a range of 0.00 to 0.78. The incidence of unauthorized housing decreases sharply with economic development, from 64 percent in low-income cities to nil in high-income cities. Regional variation reflects income differences, with sub-Saharan Africa and South Asia having the highest proportions of unauthorized housing and industrialized countries the lowest. Variation among countries with similar incomes, however, is considerable, reflecting a wide range of market conditions and policy differences. As with other housing-quality variables, cities with higher urban growth rates have proportionally more unauthorized housing than do those with lower growth rates; cities in which the state plays a greater role in the housing sector have less unauthorized housing. In Latin America, many countries have a well-developed tradition of squatter land invasion and subsequent consolidation, though not necessarily formal recognition of settlements. There, the incidence of unauthorized housing is significantly higher than would be expected.

Figure 7 **Median Share of Unauthorized Housing for Five Income Groups of Countries**



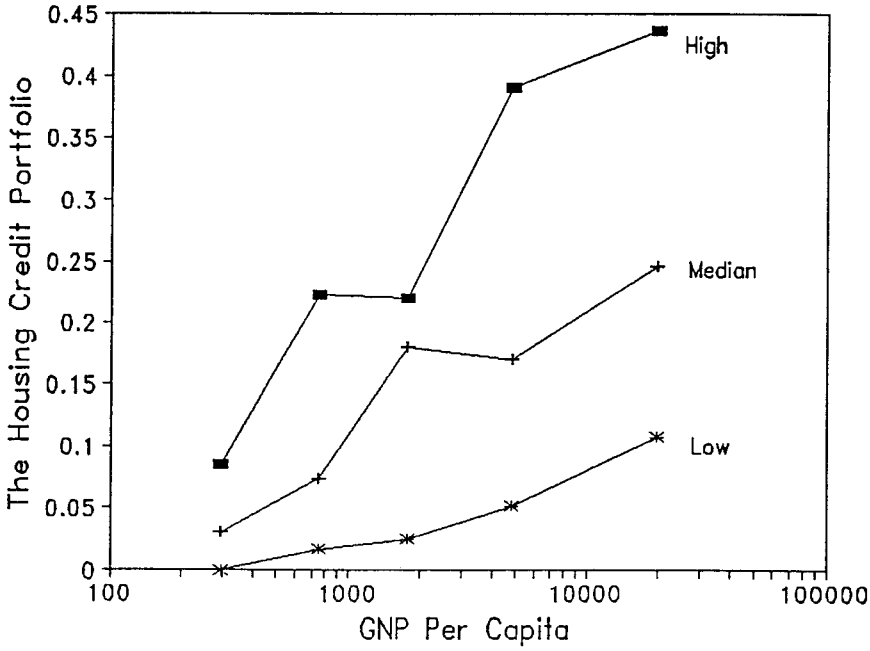
Grouping of Countries: see Annex 1.

Table 7 Median Share of Unauthorized Housing: Regional Distribution

Sub-Saharan Africa	0.667
South Asia	0.513
East Asia	0.148
Latin America and Caribbean	0.268
Europe, Middle East, and North Africa	0.149
Industrialized Countries	0.000

Indicator 8: The Housing Credit Portfolio
defined as the ratio of total mortgage loans to all outstanding loans in both commercial and government financial institutions.

Figure 8 Median Housing Credit Portfolio for Five Income Groups of Countries



Grouping of Countries: see Annex 1.

Table 8 Median Housing Credit Portfolio: Regional Disteribution

Sub-Saharan Africa	0.053
South Asia	0.030
East Asia	0.066
Latin America and Caribbean	0.204
Europe, Middle East, and North Africa	0.095
Industrialized Countries	0.239

Significance: The Housing Credit Portfolio is a measure of the relative size of the housing finance sector and its ability to provide households with the funds necessary to purchase housing. When housing credit forms only a small part of total credit,

it is quite likely that the finance institutions face legal or institutional constraints that make it difficult for them to meet the demand for housing finance. Financial depth and strength are key elements in a well-functioning housing sector. Adequate financing should be available to smooth housing consumption over time for consumers, and to enable efficient land development and construction for producers.

This indicator is intended both to proxy access to housing finance by potential buyers of housing and to convey a sense of the importance of the housing finance system to the overall financial system. An alternate measure of access to finance was evaluated during the first phase of the Housing Indicators Program. The **Credit-to-Value Ratio**, which measures the share of annual investment in housing financed by long-term formal credit, was, however, found to be less well related to several qualitative and quantitative housing outcomes than was the Housing Credit Portfolio. The latter measure, which is recommended here, appears therefore to be a better indicator of both the importance of the housing finance system to the overall financial sector and access by households to credit.

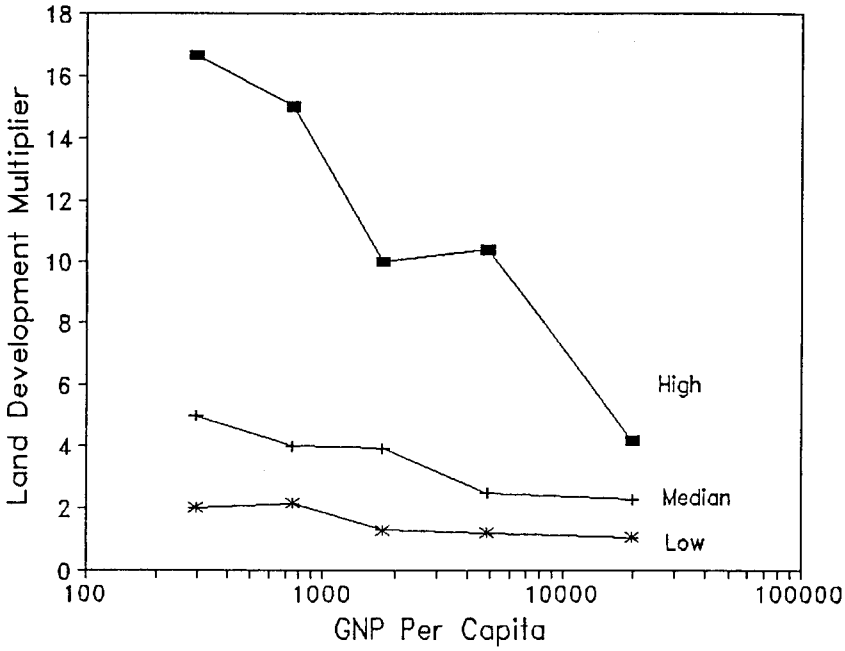
Despite the relevance of such data to an evaluation of either housing or financial policy, data on neither the Housing Credit Portfolio nor the Credit-to-Value Ratio has been regularly collected or published in statistical compendia of the housing sector.

Findings: The mean reported value of the housing credit portfolio is 0.18, with a range of 0.01 to 0.44. Housing credit, as a proportion of the financial assets of a country's banking system, generally increases with economic development. Only five percent of outstanding credit in the low-income countries is held in the form of housing loans, while the corresponding figure in high-income countries is 24 percent. Variations within and among regions in the housing credit portfolio are considerable, reflecting a variety of market, institutional, and policy influences. The prominence of housing loans in a country's banking system depends in part on institutional development in the sector; in preliminary analyses, the proportional allocation of assets toward housing loans is strongly influenced by an index that measures the depth of institutional development of housing finance, after taking account of the level of economic development and the urban growth rate. Latin America, which has a rich set of financial institutions to deal with housing finance, has an unusually high share of the assets of its banking systems allocated to housing loans, with the median reported to be 21 percent. In centrally planned economies, which have had neither market-based lending for housing nor market-oriented housing finance institutions, the portions of their financial assets invested in mortgage portfolios are smaller than expected.

Indicator 9: The Land Development Multiplier

defined as the average ratio between the median land price of a developed plot at the urban fringe in a typical subdivision and the median price of raw, undeveloped land in an area currently being developed.

Figure 9 **Median Land Development Multiplier for Five Income Groups of Countries**



Grouping of Countries: see Annex 1.

Table 9 Median Land Development Multiplier: Regional Distribution

Sub-Saharan Africa	6.18
South Asia	2.90
East Asia	2.59
Latin America and Caribbean	3.43
Europe, Middle East, and North Africa	5.50
Industrialized Countries	2.50

Significance: This indicator measures the premium for providing infrastructure and converting raw land to residential use on the urban fringe. It reflects in part the extent to which windfall profits exist in developing land for housing as the result of bottlenecks in infrastructure provision. It is thus an indirect measure of the

availability of infrastructure, as well as of the complexity of the development process. It also measures indirectly the existence of monopolistic practices in residential land development. A high value for this is often a sign of shortages of urbanized land for housing. An additional indicator for which data were also collected during the first phase of the Housing Indicators Program was the **Land Conversion Multiplier**, which measures the premium associated with converting land from rural to urban use by obtaining the necessary zoning and planning permits. This indicator measures the extent to which regulations restricting urban development increase land costs by restricting land supply.

During the first phase of the Housing Indicators Program this indicator was found, to require a great deal of care in its construction and interpretation. Yet it was also found to be a revealing and powerful measure of the overall performance of urban land markets.

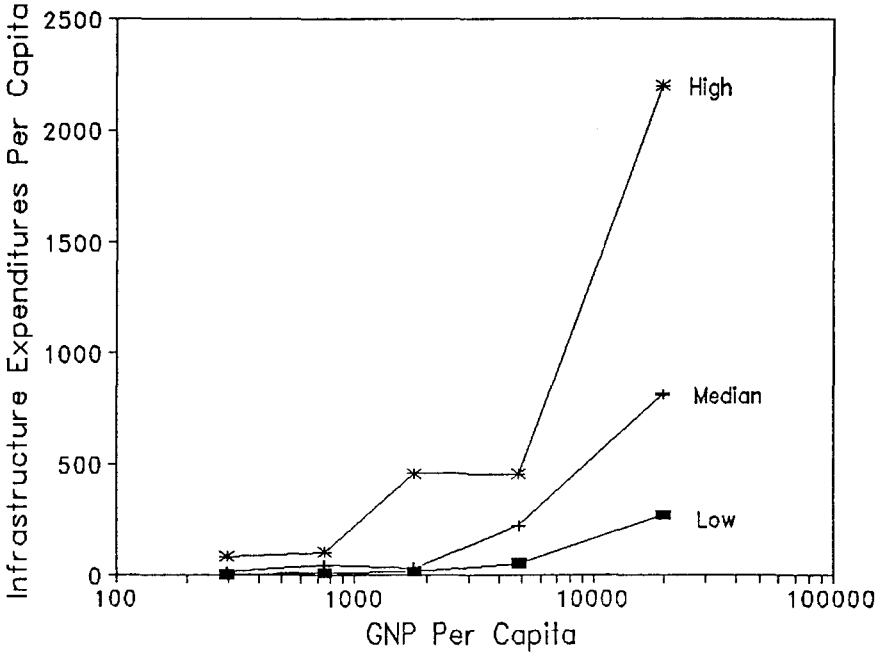
No comparable data have ever been collected and presented in statistical compendia related to the housing sector.

Findings: The mean reported value of the land development multiplier is 5.2, with a range of 1.1 to 16.6. The indicator generally declines with increasing economic development, suggesting that provision of serviced land is more responsive to demand in better-off countries. Even values of this indicator in its mid-range suggest that the premiums associated with the provision of serviced urban land are considerably higher than the actual cost of land servicing. The indicator reaches its highest values in sub-Saharan Africa, where demographic pressures of housing demand are great and infrastructure investment and housing production lag behind demand. This indicator shows its lowest values in industrialized countries where demand is relatively quiescent and infrastructure supply systems are responsive to market forces. Within regions, there is considerable variability in the land development multiplier, in several instances by a factor of 6 or 7. This appears to be the result of differences in demand pressures on land development, diverging infrastructure shortfalls, varying infrastructure standards, and distinct regulatory impediments to land development.

Indicator 10: Infrastructure Expenditures per Capita
defined as the ratio of the total expenditures (operations, maintenance, and capital) by all levels of government on infrastructure services (roads, sewerage, drainage, water supply, electricity and garbage collection) during the current year to the urban population.

Significance: This indicator is an indirect measure of the supply of infrastructure for residential development. When adequate budgets are available for extending urban infrastructure, the **Land Development Multiplier** should not be exceedingly large. Low levels of infrastructure expenditures result in land-supply bottlenecks and thus in higher prices for land and housing. They are also associated with inadequate provision of residential amenities, such as water, sewerage, drainage and

Figure 10 **Median Infrastructure Expenditures per Capita for Five Income Groups Countries**



Grouping of Countries: see Annex 1.

Table 10 Median Infrastructure Expenditures per Capita, Regional Distribution

Sub-Saharan Africa	16.56
South Asia	15.00
East Asia	81.46
Latin America and Caribbean	30.22
Europe, Middle East, and North Africa	38.33
Industrialized Countries	620.72

electricity, and in subsequent traffic congestion, all of which affect the quality of housing.

Findings: The mean reported level of infrastructure spending per capita is $318 per annum (with a median of $73), with a range from $0.98 to $2201.00. Spending on infrastructure not only rises consistently with economic development, but it shows the greatest degree of variation across income levels of practically any other housing indicator. The median reported value of the indicator for low-income countries is $15; for high-income countries, it is $814, 54 times as high, roughly equivalent to the factor by which per capita incomes differ across income groups. Levels of infrastructure spending mirror income differences across regions. They are lowest in sub-Saharan Africa and South Asia and highest in industrialized countries. Preliminary analysis suggests, as expected, that the level of infrastructure spending is negatively related to the land development multiplier. Among countries with similar income levels, infrastructure-spending levels are also relatively lower in centrally planned (or formerly planned) countries.

7. The uses of the key indicators

The *Global Strategy for Shelter to the Year 2000* recognizes the important contribution of the private formal and informal sectors to housing. It focuses specifically on enabling the private sector to meet housing needs more effectively in the future. Making the idea of an enabling strategy concrete requires a better understanding of how the housing sector functions and how policies influence housing-sector performance. The ten key indicators treat the housing sector as a whole, view it as a market, and focus on its key aspects. Thus, they will help governments focus their housing strategies on enabling the housing sector to work.

Furthermore, the collection and dissemination of a set of key indicators that present a broad view of the housing sector will help broaden the institutional base for managing the housing sector. A broader base will move the task further away from housing agencies with agendas limited to the provision and management of public housing. It will instead help build and strengthen institutions that can oversee and manage the housing sector as a whole. Those institutions will bring together all the major public agencies that affect housing-sector performance, as well as private-sector and NGO representatives. A wider purview can ensure that policies, programs, and regulations benefit the poor as much as possible.

The introduction of housing indicators into global reports, specifically the *Global Report on Human Settlements*, the *Human Development Report*, and the *World Development Report*, on a regular basis will focus needed attention on the role of the housing sector in national economies. It will also lend impetus to new housing research aimed at exploring the reasons for differences in housing outcomes between and within countries. It will enable countries to compare their housing-sector performance with that of other countries, particularly with countries having similar characteristics. A preliminary evaluation of differences among countries in regard to key housing indicators suggests that even when the level of economic development is the same, housing quality and quantity varies considerably. This suggests that **resources are being translated into better-quality housing at very**

different rates, and that poor-quality housing is likely to be as much the result of housing policy as of poverty *per se*. A comparison of several specific housing attributes -- floor space, permanent structures, tenure security, and affordability -- in Bangkok, Thailand and Kuala Lumpur, Malaysia, for example, reveals that, despite lower incomes, households in Bangkok enjoy better housing on average than do those in Kuala Lumpur. Some countries, generally those with effective housing policies and efficient delivery systems, realize many of the same quality and quantity outcomes as countries with levels of per capita income up to five times higher.

Comparing values of key indicators will enable governments to learn more from the policies and strategies employed in other countries. Many differences in quality and quantity outcomes appear to be the result of wide variations in the relative cost of housing, as measured by either rents or housing prices. These variations, in turn, appear to be heavily influenced by housing policies. Urban households in Hong Kong and Athens, Greece, for example, have similar incomes but very different housing conditions and prices. In 1990, median dwellings in Hong Kong and Athens had 26 and 70 square meters of floor area and were valued at US$112,000 and US$54,000 respectively. Differences in costs are attributable to differences in land and construction costs, both of which are higher in Hong Kong than in Athens. These differences, in turn, are the result of demand and supply factors, but particularly the latter, where a combination of policies regarding land use, zoning, tax, and competition in the building industry have caused a relatively unresponsive system of land and housing supply in Hong Kong as compared to Athens. Focusing attention on such differences in outcomes should encourage governments to explore new policies and strategies found successful in other countries.

By examining the supply and demand factors that are likely to influence housing-sector outcomes, productive areas for policy reform can be identified. A simple example is provided in Table 11 below, comparing floor area per person in Tokyo, Paris, and Washington, D.C., where incomes are roughly comparable. The table strongly suggests that the much lower value for Tokyo is the result of high prices of land and construction rather than of income differences. These, in turn, may be influenced by constraints on land supply, coupled with lower property tax rates that facilitate holding vacant land for extended periods. They may also be influenced by the higher demand for housing, which is affected by higher rates of income growth. Supply-side policies that heavily regulate land development, while encouraging land purchases but not land development, have affected land prices and thus the amount of floor space per person. Opposite patterns can be seen in Washington, D.C., while the results for Paris fall between those for Tokyo and Washington.

Table 11 A comparison of selected indicators in three cities, 1990

Indicator	Tokyo, Japan	Paris, France	Washington, D.C., USA
Floor Area per Person (m^2)	15.8	32.4	68.7
Construction Cost (per m^2)	$2604	$990	$500
Developed Land Price (per m^2)	$2977	$108	$72
GDP Growth Rate (80-89)	4.1%	2.4%	1.7%
Effective Property Tax Rate	.04%	4.00%	1.30%

In conclusion, regular collection of these key indicators will allow governments to begin to monitor the shelter sector on a regular basis, to detect whether progress is being made in attaining housing objectives, and to examine the effects of changes in shelter strategies on housing outcomes. These key indicators will form the core of a **global monitoring strategy for the shelter sector**, which can then be expanded and refined by individual governments to meet their own specific needs and aspirations.

Notes

1 Other actors may be important in different institutional settings. Among the most important of those are non-government and community-based organizations, state-owned enterprises, and firms involved in real estate brokerage. A more detailed breakdown will also need to take into account the different perspectives of specific government agencies, such as the land department or the fire department, and various agents in the formal and informal housing delivery system.

2 Annex 1 lists the cities and countries included in the Extensive Survey.

3 Such fora already exist in a number of countries, notably Thailand and Jamaica.

4 This effort is now under way in Australia, Brazil, Hungary, India, and the Philippines.

5 The use of indicators as diagnostic measures in sector reviews and in loan negotiations is already under way in the World Bank, e.g. in Algeria.

[6] Two of the key indicators are not very useful for developed countries: Permanent Structures and Unauthorized Housing. Both reach their limits, 100 percent and 0 percent respectively, for moderate levels of GNP per capita.

[7] Preliminary analysis from the Housing Indicators Program, however, indicates that measures of **overall** housing-sector performance, e.g. median values of housing prices and physical outcomes, are consistently very highly correlated with outcomes throughout the income distribution.

[8] The graphs are based on data processed as of October 1, 1992 and are subject to change.

[9] In several developed countries, where nearly all housing is formally built, data on **housing starts**, an alternative 'activity indicator', is easily collected. It is used extensively in both popular discussions of the state of the housing sector and in sophisticated macro-economic modeling efforts. In countries with an important informal housing sector, where much of the housing construction activity is officially unrecorded, housing starts data is difficult to collect. However, housing completions can be ascertained using either sample surveys or aerial photography.

[10] Data on the size of the housing stock and household formation is commonly available from censuses of population and housing. It may be combined with housing production data to produce measures of the adequacy of current production to accommodate growing populations.

Annex 1: Countries in the Extensive Survey

City	Country	GNP per Capita	Income Group	Region
Dar es Salaam	Tanzania	130.00	1	Africa
Lilongwe	Malawi	180.00	1	Africa
Dhaka	Bangladesh	180.00	1	South Asia
Antananarivo	Madagascar	230.00	1	Africa
Ibadan	Nigeria	250.00	1	Africa
New Delhi	India	340.00	1	South Asia
Beijing	China	350.00	1	East Asia
Nairobi	Kenya	360.00	1	Africa
Karachi	Pakistan	370.00	1	South Asia
Kumasi	Ghana	390.00	1	Africa
Jakarta	Indonesia	500.00	2	East Asia
Cairo	Egypt	640.00	2	EMENA
Dakar	Senegal	650.00	2	Africa
Harare	Zimbabwe	650.00	2	Africa
Manila	Philippines	710.00	2	East Asia
Abidjan	Cote d'Ivoire	790.00	2	Africa
Rabat	Morocco	880.00	2	EMENA
Quito	Ecuador	1020.00	2	LAC
Bogota	Colombia	1200.00	2	LAC
Bangkok	Thailand	1220.00	2	East Asia
Kingston	Jamaica	1260.00	3	LAC
Tunis	Tunisia	1260.00	3	EMENA
Istanbul	Turkey	1370.00	3	EMENA
Amman	Jordan	1640.00	3	EMENA
Santiago	Chile	1770.00	3	LAC
Warsaw	Poland	1790.00	3	EMENA
Monterrey	Mexico	2010.00	3	LAC
Kuala Lumpur	Malaysia	2160.00	3	East Asia
Algiers	Algeria	2230.00	3	EMENA
Caracas	Venezuela	2450.00	3	LAC
Johannesburg	South Africa	2470.00	4	Africa
Rio de Janeiro	Brazil	2540.00	4	LAC
Budapest	Hungary	2590.00	4	EMENA
Bratislava	Czechoslovakia	3450.00	4	EMENA
Seoul	Korea	4400.00	4	East Asia
Athens	Greece	5350.00	4	EMENA
Madrid	Spain	9330.00	4	Industrialized
Tel Aviv	Israel	9790.00	4	Industrialized
Hong Kong	Hong Kong	10350.00	4	Industrialized
Singapore	Singapore	10450.00	4	East Asia
Melbourne	Australia	14360.00	5	Industrialized
London	UK	14610.00	5	Industrialized
Amsterdam	Netherlands	15920.00	5	Industrialized
Vienna	Austria	17300.00	5	Industrialized
Paris	France	17820.00	5	Industrialized
Toronto	Canada	19030.00	5	Industrialized
Munich	Germany	20440.00	5	Industrialized

City	Country	GNP per Capita	Income Group	Region
Washington, D.C.	US	20910.00	5	Industrialized
Stockholm	Sweden	21570.00	5	Industrialized
Helsinki	Finland	22120.00	5	Industrialized
Oslo	Norway	22290.00	5	Industrialized
Tokyo	Japan	23810.00	5	Industrialized

EMENA = Europe, Middle East, and North Africa
LAC = Latin America and Caribbean