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**Bangkok: A Profile of
An Efficiently Performing Housing Market**

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* The author is Associate Director of the Institute of Urban and Regional Development, University of California at Berkeley. This paper was written based on the author's participation as land economist on the Asian Development Bank-funded Bangkok Land Management Study, conducted by PADCO for the National Housing Authority of Thailand. Funds for the project were provided by the Government of Switzerland. The study was directed and managed by Dr. Shlomo Angel. The author is indebted to Dr. Angel for ably managing the project and insuring that the field surveys were carried out. The author also wishes to thank Mr. Alfred Van Huyck of PADCO and Mr. William Fraser of the ADB for their support. Most of all, the author thanks Ms. Chantana Chanond of the National Housing Authority for her contribution to the study, particularly on aerial photographic interpretation. Lastly, the author wishes to thank the anonymous reviewers of an earlier draft of this paper for their valuable comments. This paper does not reflect the views of the Asian Development Bank or the National Housing Authority of Thailand.

BANGKOK: A PROFILE OF AN EFFICIENTLY PERFORMING HOUSING MARKET

ABSTRACT

This paper reports on a study of the Bangkok land and housing market. The study is based on extensive surveys of projects, developers, households, and the interpretation of aerial photographic information. The results of the study indicate that Bangkok's land and housing markets are operating very efficiently, with the formal private sector providing 27 percent of the total housing stock increase between 1974 and 1984. The region's supply of developable land with roadway access increased by over 20 percent between 1974 and 1984. As a result, land values have not increased substantially in real terms and overall housing affordability improved between 1982 and 1986. The Bangkok study is important for housing policy-makers because it provides a profile of a well-performing land and housing market.

BANGKOK: A PROFILE OF AN EFFICIENTLY PERFORMING HOUSING MARKET

David E. Dowall*

INTRODUCTION

This paper reports on a study of the Bangkok land and housing market. The project was managed and administered by Dr. Shlomo Angel. He developed the project's database and implemented several field surveys, in addition to being the principal author of the study's final report [PADCO, 1987]. Eight technical studies were prepared as part of the project's research program. This paper is based on one of these technical reports, which was prepared by the author [Dowall, 1987].

Bangkok, like other large cities in Southeast Asia, is experiencing rapid development pressures. These pressures create enormous needs for land and housing development. As Doebele [1987] has indicated, it is a miracle that these cities are functioning at all--in many cases land and housing markets are straining to accommodate development. Poor land market performance creates serious housing problems, such as high land prices, lack of secure land tenure, poor housing quality, great distances between low-cost housing areas and employment centers, and intense competition between income classes for scarce housing resources.

In developing countries around the world, public policies have been launched to relieve the symptoms of poor urban land and housing market performance. Public housing authorities have been established, and multilateral agencies have poured millions of aid dollars into cities. But treating these symptoms will not cure the problem--land and housing markets must be made to operate efficiently if long-term improvement is to occur.

Efficient land market operation is essential to maximize the potential delivery of affordable housing [Mayo, Malpezzi, and Gross, 1986]. In order for markets to operate efficiently, several conditions must hold: First, land markets require an ample supply of land for residential development, and they must be free of bottlenecks and constraints which slow the delivery of residential lots to homebuilders or households. To meet this requirement, infrastructure--including roads, electricity, water, and sewage disposal--must be continually made available. A second requirement

for efficiency is competition. No specific land developer or housing builder should have sufficient market power to charge prices above what would prevail in an open and competitive marketplace. This implies that entry into the land and housing development industry must be fluid. Also, no substantial barriers to entry which would hinder new firms from entering the marketplace must stand. A final requirement for efficient land markets is an ample supply of finance capital to support residential construction and to fund long-term mortgages for buyers. If these three conditions are met, there will be minimal land speculation, and housing prices will be held down to actual costs plus a reasonable profit for the developer.

The results of the Bangkok study are extremely important for local policy-makers, planners in other fast-growing third-world cities, and planners and lenders working for international agencies. In Bangkok, the land market is working extremely well, as it is providing ample land for housing development. The construction industry is expanding production of moderate-priced housing, and housing affordability has improved in the past five years. A responsive land market and adequate supplies of finance capital appear to be the key ingredients responsible. The Bangkok case illustrates the importance of efficient housing and land market operation in improving housing delivery. Bangkok is nothing less than a role model for other fast-growing cities of Asia.

THE RESEARCH APPROACH OF THE BANGKOK STUDY

The land market study area consists of the Bangkok Metropolitan Administration area (referred to as the BMA), and portions of the provinces of Nonthaburi, Samut Prakan, and Patumtani. This area contains urbanized, suburban, and agricultural lands located within 90 minutes travel from the center of Bangkok. The study area contains all of the land likely to be developed or redeveloped for housing over the next ten years. Figure 1 illustrates the study area.

The land and housing market study makes extensive use of secondary data sources and surveys of projects, developers, households, and the interpretation of aerial photographic information [National Housing Authority, 1985]. Much of the data collected were organized and tabulated according to subdistricts or kwaengs. There are a total of 344 subdistricts in the study area. Additional published data from the National Statistical

Office, Bangkok Metropolitan Administration, Land Department, and other government and private organizations was recorded at the subdistrict level as well. Data on assessed land values were obtained from the Land Department.

The database developed from these surveys was used to assess the operation of the Bangkok land and housing market. Extensive analyses were conducted to determine land conversion, land value, and housing development trends and patterns. The results provide what may be the most detailed assessment of a third-world metropolitan area's land and housing market prepared to date.

DESCRIPTION OF THE BANGKOK METROPOLITAN AREA

Bangkok straddles the Chao Phraya River at a point 33 kilometers north of the Gulf of Thailand. It is the capital of the Kingdom of Thailand, and is the major administrative, economic, and cultural center, and the sole window for international trade for the country [Thai University Research Associates, 1976]. Much of the development of Bangkok is low-density, with shophouses and residential structures rarely exceeding five stories in height. An early land-use survey conducted in 1958 found that most of the urban area of the city was in residential use [Litchfield, Whiting, Bowne and Associates, 1960]. In the 1960s and later, development, especially housing, decentralized into the suburban rings where land is less expensive and parcels are easy to assemble.

Bangkok's growth "took off" in the 1960s when Thailand began developing its regional and international markets. The population surge is clearly evident in Table 1, which presents population for the BMA and the larger Bangkok Metropolitan Region (BMR) by province. Between 1960 and 1986, the region gained 4,892,000 in population. The BMA accounted for 3,637,000 or 74.3 percent of the increase. The population of the BMR has increased by nearly 150 percent between 1960 and 1986, a compound annual growth rate of 3.6 percent [NESDB, 1986].

The strong growth of the region's population and economy is clearly reflected in the changing patterns of land use. Between 1974 and 1984, approximately 32 square kilometers of land were converted per year from rural, largely agricultural uses to urban activities. By 1984, the urbanized area of the region was 1,304 square kilometers, accounting for

17.1 percent of its total land area. In the BMA, 855 square kilometers were urbanized in 1984, accounting for 54.5 percent of the total land area. If present trends continue, the urbanized area of metropolitan Bangkok will expand by 512 square kilometers by the year 2000, an increase of over 40 percent.

During the next five years, as illustrated in Table 2, the metropolitan region is expected to increase by over 1 million people. Of this growth, a majority of 67.9 percent will be concentrated in the BMA. This increase will continue to place pressure on the land markets located on the outer edges of the region.

In absolute terms, the region is gaining about 200,000 persons per year. At an average household size of between 4 and 5 persons, this suggests that between 40,000 and 50,000 dwelling units are needed per year to keep up with urban growth.

According to the projections of the NHA, the demand for additional housing between 1986 and 1991 is estimated at 250,000 units. Nearly 60 percent of the increase is projected to be provided by private developers. Less than ten percent will be developed by individuals in land subdivisions or on individual plots.

The next five years will likely be characterized by a growing residential market created by the private sector. There appears to be ample financial capital to fund mortgages as well as construction. Whether the market can produce affordable housing in the metropolitan area depends on the ability of the private sector to acquire low-cost, and serviced (in terms of roads and infrastructure) land. The next section considers the performance of the region's housing sector.

HOUSING STOCK CHANGES IN THE REGION BETWEEN 1974 AND 1984

The production of housing in the Bangkok region has kept pace with the growth of population. Within the BMA, approximately 350,000 dwelling units were added between 1974 and 1984 [NHA, 1985]. As Table 3 reveals, most of the additional units constructed in the region have been shop-houses, and developer-built land and housing projects. In fact, the shop-house market appears to be vastly overbuilt, and little construction of additional units is likely until the current supply of units is absorbed into the market.

On the other hand, developer land and housing projects are selling well, and construction is maintaining a high pace. The National Economic and Social Development Board anticipates that the level of housing provided by private developers will increase in the next five years as this segment of the market emerges as the dominant form of residential development. The expansion of the developer housing market segment will mostly come at the expense of the land subdivision and individual housing market segments. In the past, these segments provided housing for low- and moderate-income households moving up the housing ladder from slum and squatter settlement housing. But as the price of housing built by the private sector falls in real terms, and as interest rates decline, the market share of land subdivision and individual housing will fall. Still, these two sectors accounted for 29 percent of the net addition to the housing market between 1974 and 1984.

Slum and squatter settlement housing is growing at a much slower rate than in the past. This pattern of growth suggests that the private, formal market is beginning to respond to the needs of Bangkok's lower-income residents, and the share of slum and squatter settlements in the overall market can be expected to decline over the next five years, as long as present conditions continue.

Institutional housing for military and factory workers accounted for less than six percent of the total housing stock growth. In the future, it will play a smaller role as the private sector housing delivery system expands.

Most of the additions to the stock of housing have been located in the suburban ring of the region. Table 4 presents data on housing increases by distance from central Bangkok. Figures 2 and 3 illustrate the location of additional housing construction by subdistrict for all housing units and developer housing respectively.

As the tables and maps illustrate, the central core of the city has contributed little in the way of additional housing units. Aside from the production of shop houses, the net increase is approximately 3,000 units. The older inner-urban areas, located from six to ten kilometers out from the center, accounted for nearly 20 percent of the total increase in the region's housing growth. Again, due to the central location and high levels of commercial activity, shop houses were the prevalent form of housing

construction and accounted for over 60 percent of the net increase in housing in this district.

The next ring, from 11 to 20 kilometers, had the most housing activity. This area accounted for 48 percent of the region's total increase in housing and was the location for two-thirds of the total construction of developer-built land and housing projects and 63 percent of all new land subdivision plots. This area will continue to be an important center of development activity, but in the next five years growth will shift to the next ring, located beyond 20 kilometers from the center. This is simply because the ring between 10 and 20 kilometers is becoming developed and low-cost land is dwindling. According to information gathered on land values, land located in the ring 20 to 30 kilometers out is roughly three times less expensive, on average, than land located in the ring between 10 and 20 kilometers.

In terms of the housing market, production is concentrated on the eastside of Bangkok (Figure 2). Developer-built land and housing projects are particularly concentrated directly east and northeast of the central business district (Figure 3). But recently, developers have begun building projects on the west side of Bangkok as well.

THE SUBURBAN LAND CONVERSION PROCESS

On an annual basis, the region is converting 32 square kilometers per year into urban uses. This includes housing, manufacturing, commercial, institutional, and other supporting uses. Between 33 and 40 percent of the total land conversion is directly connected to housing activities.

Table 5 presents land conversion and urbanization information for 1974 and 1984 according to the distance from central Bangkok. Most land conversion took place beyond ten kilometers from the city center. Between 1974 and 1984, the ring between 11 and 20 kilometers from the city accounted for 42 percent of the total land conversion in the study area. The area beyond 20 kilometers accounted for 46 percent of the conversion.

The actual conversion of land is concentrated in suburban areas, since the older central city has already been developed. Figure 4 illustrates the pattern of urbanization in the region. As the figure shows, most of the conversion has taken place in the northern and eastern suburbs of Bangkok.

The pace of land conversion has been substantial in these outlying areas. For example, suburban areas located between six and ten kilometers from the center of Bangkok had approximately one-sixth of their land area converted to urban use between 1974-84. These areas still have considerable undeveloped land--over 600 square kilometers.

Despite the ample supply of land available for suburban development, there have been allegations that land for residential development is in short supply [Durand-Lasserve, 1983]. Many claim that there is insufficient road access and infrastructure, and that fringe land markets are tightly controlled by land developers and speculators. To ascertain whether there is a "land shortage," case studies were conducted in four districts: Minburi, Ladkrabang, Ratburana, and Talingchan [Chanond, 1987]. These areas are located at distances varying from 5 to 25 kilometers from central Bangkok. A random sample of approximately 400 parcels was drawn for analysis.

One of the important findings of the fringe case studies is how many of the parcels in the sample have gained roadway access between 1974 and 1984. In 1974, only 23.3 percent of the parcels (according to parcel size) had direct road access. By 1984, the amount of land provided with direct road access more than doubled in area; thus, by 1984 nearly 47 percent of the parcels, in terms of land area, had been provided with access.

The provision of road access is probably one of the most important and effective means of increasing the supply of land for residential development. By providing road access, land can be more easily developed. Increasing the supply of land will keep the price of land from escalating upward and help to keep housing affordable.

If there is speculation in fringe area land markets, it should be apparent in the parcel data that properties have been turning over. The survey data, however, do not reveal any indication that land speculation is ongoing in the districts. Over 47 percent of the parcels, accounting for 36 percent of the land area, have been owned for over 30 years. Less than 20 percent of the parcels are owned by landlords holding them for five years or less. There is no statistically significant variation in the length of ownership of parcels according to the size of parcels, which might suggest that new buyers are "locking up the land market." As for the number of transactions per parcel, the survey data indicate that the overall rate of

transactions is quite low, averaging less than one transaction per parcel over the 30-year time period--hardly suggesting the speculative-chaining suggested by Durand-Lasserve.

The fringe-area land market is operating well, with little signs of speculative-chaining and rapid turnovers of parcels. While it was not possible to interview landowners to identify possible land monopolization, surveys of developers were made; and nearly everyone indicated that they do not bank large inventories of land for development. Developer land banking may have flourished during the early days of the residential development industry, but it is not reflected in today's marketplace.

The fringe-area survey results indicate that an enormous quantity of land has been provided with road access between 1974 and 1984. In fact, if the results apply equally to all fringe lands in the four case studies, nearly 9,000 hectares obtained access between 1974 and 1984, almost the amount of land necessary to provide all of the housing needs for the region during this period. While the configuration of roadway improvements is less than efficient from a transportation planning standpoint, the privately-funded expansion of roads is surely working to increase the supply of land for urban development. Thus, it is very unlikely that a land shortage will increase housing prices in the near future. There is simply too much land in the region with roadway access for this to happen.

THE PATTERNS OF LAND VALUES IN METROPOLITAN BANGKOK

While land prices have increased, especially in the suburban ring of the Bangkok metropolitan area, the rate of increase is not exceptional or dissimilar from other fast-growing metropolitan areas with efficient land and housing markets. The land value data presented below were compiled from periodic assessments made by the Land Department of the Ministry of Interior. Two of these assessments have been carried out in 1974 and 1983 for use during the periods 1975-78 and 1985-1987. Data on parcels located adjacent to collector streets (sois) have been used. The land values have been adjusted into constant 1986 baht values (using the Bangkok consumer price index), and then converted to U.S. dollars at a rate of 25 baht per dollar. The land prices are expressed in terms of dollars per square meter. (These assessments have also been compared to commercial land appraisals.

This comparison suggests that the Land Department data for residential properties reasonably approximate market values.)

Spatial Patterns of Residential Land Values

Bangkok, as might be expected, fits the general pattern of land values declining with distance from the central city. As illustrated by Figure 5, the highest land values for soi-adjacent parcels (those located near collector streets) are found in the central business district. Inspection of the value information for earlier years suggests that this pattern held true for 1977 as well.

A systematic and precise method for assessing the relationship between land values and location is to develop a land value gradient model [Alonso, 1964]. U.S. and European researchers have found that land values decline with distance, illustrating that land users are willing to pay less for a square meter of land the farther it is from the center of the city.

In recent years economists have attempted to determine whether these patterns apply to third-world cities. Mills, in 1972; Ingram and Carroll, in 1981; Ingram, in 1982; Mohan and Villamizar, in 1982; and Haddad, in 1982, among others, have generally found that these patterns of declining land values hold true for cities around the world regardless of their stage of development.

The best method of fitting the data to a non-linear function is to use a logarithmic function. The most widely used estimation of land value gradients is the following specification:

$$V_x = V_0 e^{-hx}$$

where: V_x is land value at distance x kilometers from the city; V_0 is land value at the center of the city; e is the naperian logarithm; and h is the land value gradient parameter to be estimated.

Table 6 presents regression estimates of the land value data: 1977 and 1986 Land Department values for parcels adjacent to collector streets. The results of the regression models are statistically highly significant. All of the variables enter with the correct sign: the intercept value (the estimated land value at the center of the city) is positive; and the land value gradient (h) is negative, indicating that land values decline with distance from the city center. Each variable in each equation is statistically significant at the .001 level of confidence. The

overall variation in land values is well explained by distance. The R^2 values indicate that between 58 percent and 71 percent of the variation in land values is explained by distance from the CBD.

The equations show that the intercept values slightly decline in real terms between 1977 and 1986, and that the gradient parameter is smaller for 1986 than for 1977. This suggests that land values have declined in real terms in the center of Bangkok and that suburban prices have risen. This pattern of "flattening out" is found in other cities as well, and reflects the impact of increasing mobility and decentralization of urban activities. The results here closely match those reported by Ingram [1982] for cities in Columbia and Korea.

The regression results have important implications for housing providers. Over time, real residential land values have fallen in the center of Bangkok and increased in the suburban areas. This suggests that the residential land market is expanding in the areas outside of the central city and that consumers prefer suburban locations for their residences. These trends appear to reflect the declining environmental quality of residential areas in the center city and the increasing housing development beyond the city center.

Table 7 illustrates the increase in land values estimated by the two regression models for 1977 and 1986, for distances of six, ten, fifteen, and twenty miles from the center of the city. As the table shows, land prices have not increased significantly between 1977 and 1986 for close-in parcels adjacent to collector roads. For outlying parcels, such as those beyond 20 kilometers, the average rate of increase is over four percent per year, in real terms.

How Serious is the Overall Rate of Land Inflation?

During the period from 1977 to 1986, land values increased steadily, although the rate of increase generally was less in the 1980s than in the 1970s. An analysis of the patterns of increases in land values by the distance from the CBD suggests that land values show the greatest increase in percentage terms in outlying areas. This reflects the low levels of land values in the peri-agricultural portion of the metropolitan area and the effects of shifting from agricultural to urban land uses.

Are these annual increases in land values excessive or a cause for concern? In comparison to land value trends in other countries with comparable population and housing growth rates, it does not seem so. In United States cities which grew at the same rate as Bangkok between 1970 and 1980 (a 50 percent increase in population), the rate of increase was in line with Bangkok. For example, in Atlanta, Georgia; Houston, Texas; Raleigh, North Carolina; and Phoenix, Arizona, raw, vacant land increased by an average of between 7 and 35 percent per year [Urban Land Institute, 1981]. These are all cities without serious land and infrastructure constraints, and restrictive land-use regulations and their land markets are regarded as operating efficiently.

In comparison to the United States experience in land value patterns, the Bangkok land market, as characterized by the 10-year Land Department data, is functioning extremely well, given the rate of population growth and concomitant housing demand. The increases in land values in Bangkok certainly do not approach the increases in urban land values in Japan during the 1970s [OECD, 1986] or the current rapid rate of land inflation of Manila or Taipei [Far Eastern Economic Review, 1987].

EMERGENCE OF THE PRIVATE HOUSING DEVELOPER

In the late 1950s, residential land developers developed and sold plots to individuals--there was no housing development industry. Finished residential plots were sold on an installment basis, although in some cases banks and credit agencies provided financing.

Today, land developers acquire the land, add fill, lay out plots, provide infrastructure, and contract with builders to build housing. Land developers now recognize that it is far easier to sell plots if they can provide buyers with the opportunity to purchase a completed house. In some instances, particularly in the case of low-priced housing projects, the developer designs only one model for sale. Some good examples of this approach are the low-cost projects built by Land and House Company, Ltd. They offer only one style and do not allow the buyer to make any changes in the construction design or in the finish work. This allows Land and House Company to tightly control builder costs by building a standard unit at a fixed price. Material costs can also be lowered by volume purchasing.

Many of the residential builders in Bangkok are closely following the progress of Land and House Company. While some are claiming that they cannot build a house at such low costs (\$7,000) and make money, others are interested in the process. It is absolutely clear, however, that these low-cost houses are selling extremely well, much faster than the middle- and higher-priced units. Based on a 1987 survey, projects average 4.8 hectares and contain between 180 and 200 dwelling units. Most of the projects surveyed were started recently, less than 1.5 years ago [Angel and Chauted, 1987].

Comparison of Private Land and Housing Projects in 1980 With Those of 1986

A comparison of two separate surveys conducted in 1980 and 1986 clearly indicates that land and housing developers have shifted "down-market." The first survey, comprising 126 projects, was conducted by the National Housing Authority [1980]. The 1986 survey, accounting for 32 projects and 6100 units, was carried out by Angel and Chauted [1987].

To make valid comparisons, all prices in the following tables are in 1986 prices. As Table 8 illustrates, approximately 95 percent of the units surveyed in 1980 sold at prices above \$10,400. Over 50 percent of the units sold at prices between \$10,400 and \$20,800, suggesting that the development community was oriented to the middle and upper end of the Bangkok housing market. On the other hand, according to the 1986 survey, nearly ten percent of the units offered for sale were priced below \$10,400. Whereas, in 1980, 32 percent of the units sold under \$15,600, in 1986 almost 50 percent of the units sold for less than this price. The 1986 price trends indicate that there is also considerable activity at the upper end of the market, with over 30 percent of the units surveyed selling at prices above \$28,600. In 1980, by comparison, only 21 percent were priced as high. The distribution of sales in 1986 became bimodal, with concentrations at both the low and high ends of the market.

To cut costs, developers have reduced the size of their units. Whereas, in 1980, the majority of detached and semi-detached units were in the 164- to 200-square-meter range, in 1986 they are much smaller--most fall into the 40- to 80-square-meter category. Only more expensive detached units are concentrated in the 204 to 240-square-meter category.

A comparison of plot prices per square meter clearly illustrates that land prices have risen between 1980 and 1986 in real terms. In 1980, as illustrated in Table 9, plot prices were concentrated in the \$19.51 to \$26.00 per square meter range. While over 30 percent of the plots surveyed sold for prices in this range, only 7.6 percent sold in this same range in 1986. Forty-seven percent of the plots in 1980 sold for under \$32.50 per square meter and, by 1986, 48 percent sold for over \$52.00 per square meter.

In real terms, prices of plots are increasing at the same time that prices for private land and housing units are shifting to the lower end of the market. Comparison of the 1980 and 1986 housing projects reveals that this is accomplished by reducing the size of the plots. Another important way to lower overall costs is to reduce the per-meter cost of the housing units. As Table 10 illustrates, while in 1980 only five percent of the units sold at prices below \$104 per square meter, in 1986 over 33 percent of the surveyed units sold for under this price. Apparently builders have shifted to less costly construction materials and methods and are able to sell units at lower prices.

Developers are now asking for higher downpayment percentages than in 1980. Nearly one-half of the units in the 1986 survey required a 21-30 percent downpayment, as opposed to 37 percent in 1980. In 1980, 28 percent of the units could be purchased with downpayments of less than 20 percent. In 1986, only three percent of the developers allowed less than 20 percent down. In 1986, the terms for mortgages were much better, 12 percent versus 16 percent in 1980, and the average mortgage period is now approaching 20 years.

The comparison of the two surveys reveals several important findings. First, the private housing development market is clearly shifting down to the low-cost, low-price market. Over 6,800 units selling at or less than \$10,000 were on the market in 1986. Second, developers have effectively "downsized" units and plots to economize on costs. Third, these smaller units appear to be accepted by consumers and are selling well. Fourth, developers have drastically cut the cost of housing construction in real terms, and this has helped them to lower their selling prices. The private sector land and housing market is moving toward mass marketing of housing. There is clearly substantial innovation occurring in the residential housing market at this time.

THE IMPLICATIONS FOR HOUSING AFFORDABILITY

A comparison of two household surveys, conducted in 1982 and 1986, reveals that, for middle-income Bangkok households, affordability conditions have dramatically improved. In 1982, the National Housing Authority published a study, Housing Affordability in Thailand Cities [1982]. This study reported on a survey of 1000 households, 250 of which were located in Bangkok. In 1986, the PADCO team surveyed recent homebuyers in land and housing projects. To make both surveys comparable, a sub-sample of 110 respondents, residing in private land and housing projects, were randomly selected from the 1986 survey database and matched with the survey results from the 1982 study.

Table 11 illustrates summary information on the two surveys. The median income of homebuying households increased, in real terms, by 166 percent between 1982 and 1986. The median purchase price of a unit increased by far less, from \$14,878 to \$16,040, an eight percent increase. Consequently, the ratio of housing purchase price to annual income fell from 5.7 to 2.3 times income. At the same time, the downpayment approximately doubled from \$3,600 to \$7,200. Still, with this increase in the downpayment, the ratio of downpayment to income fell from 1.3 to 1.0 between 1982 and 1986, indicating that saving for a downpayment is less of a financial burden now than in 1982.

The median monthly mortgage installment paid has increased from \$109.40 to \$144.04, reflecting the increase in the purchase price. The percent of income going to service the mortgage was quite high in 1982--50 percent. By 1986 it had fallen to 25 percent. Both the reduction of this percentage and the lower ratio of downpayment to income indicate that affordability has improved between 1982 and 1986.

A more detailed analysis of the two surveys by income indicates that, for those below the median income, the ratio of housing purchase price to income has fallen between 1982 and 1986. For lower-income households earning less than \$217 per month, the ratio of downpayment to income fell as well.

The results of our comparisons of the two surveys of households indicate that overall housing affordability has improved since 1982. The housing market of the region is performing well, providing housing at

affordable prices. Purchase patterns reveal that the typical household devotes approximately 27 percent of its monthly income to mortgage payments. This pattern is consistent across all income categories. This level is well within accepted financial standards, suggesting that there is no "affordability crisis" for most households in Bangkok at this time.

While far from conclusive, a comparison of 1982 and 1986 surveys suggests that, for most income categories, housing affordability has improved. Only the very low end of the income spectrum, those residing in slum and squatter settlements and low-priced rental units, are effectively priced out of the housing market. However, there are clear signs of a shift by the private housing market to lower-priced units. According to Angel and Chautaud [1987], there are signs that these lower-income groups may be better able to move up the housing ladder. The implications of the assessment of housing demand and affordability suggest that the private housing market is working extremely well to meet the broad-based housing demands of most of the market.

CONCLUSIONS AND IMPLICATIONS

The results of our land market study indicate that the Bangkok land market is performing well. Land speculation and land hoarding are not evident, and long-term increases in land values are not excessive. The supply of fringe-area land with roadway access is growing, keeping land price increases moderate. The private land and housing development sector is shifting into the low- and moderate-price range, producing units at prices less than \$8,000. The relative size of the informal housing sector is declining as the formal private sector expands production "downmarket." Using well-accepted performance measures as a guide, we found that housing affordability has improved in the metropolitan area.

The vitality of the private sector market has important implications. If the private sector continues to build moderate-cost housing, it will greatly contribute to the solution of Bangkok's low-income housing problem. For this to continue, the public sector needs to concentrate on insuring that the supply of land for housing keeps expanding and that land-use controls and infrastructure regulations do not limit housing production opportunities. Likewise, financial institutions need to continue to provide mortgage finance to homebuyers. The Bangkok story is a "happy" one, and it should be of considerable interest to those committed to improving housing conditions in the Third World.

Bangkok Land Management Study Area

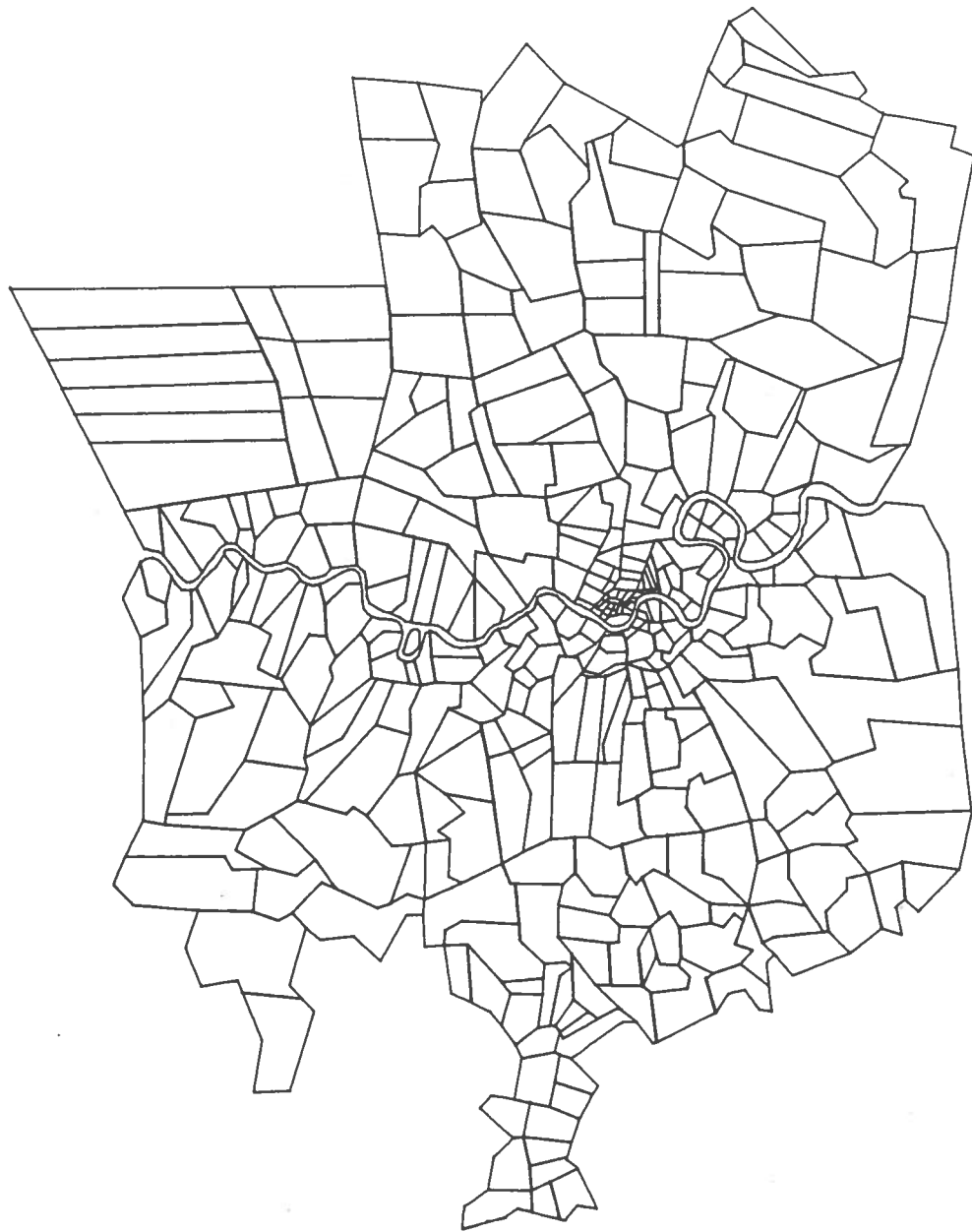


FIGURE 1

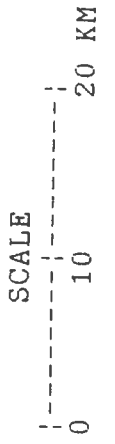


TABLE 1

Population Growth Trends in the Bangkok Metropolitan Region (BMR), 1960-1986

Province	Population in Thousands				% Chg		
	1960	1970	1980	1986	60-70	70-80	80-86
Bangkok Metro.							
Administration	2,136	3,185	4,852	5,773	49.1%	52.3%	19.0%
Nonthaburi	196	278	383	473	41.8%	37.8%	23.5%
Pathum Thani	190	242	332	406	27.4%	37.2%	22.3%
Samut Prakan	235	341	503	625	45.1%	47.5%	24.3%
Samut Sakon	166	208	256	294	25.3%	23.1%	14.8%
Nakhon Pathon	370	434	545	614	17.3%	25.6%	12.7%
Total BMR	3,293	4,688	6,871	8,185	42.4%	46.6%	19.1%

Source: NESDB, 1986.

TABLE 2
Projected Growth of the Bangkok Metropolitan Region by Province
(in thousands)

Province	1986	1991	% Inc. 86-91	Absolute Increase	Share of Increase
BMA	5,773	6,477	12.1%	704	67.9%
Nonthaburi	473	556	17.5	83	7.8
Pathum Thani	406	478	17.7	72	6.7
Samut Prakan	625	739	18.2	114	10.7
Samut Sakon	294	331	12.6	37	3.5
Nakhon Pathon	614	672	9.4	58	5.4
Total BMR	8,185	9,253	13.0%	1,068	100.0%

Source: National Economic and Social Development Board, 1986

TABLE 3

Housing Stock in the Bangkok Land Management Study Area, 1974, 1984

Type of Housing	1974	1984	Absolute Change	Share of Total Change
Developer Housing	20,193	113,755	93,562	26.9
Land Subdivision	31,393	70,466	39,073	11.2
Shophouse	134,766	247,553	112,787	32.4
Individual	209,084	271,266	62,182	17.9
Slum & Squatter	139,326	160,145	20,819	6.0
Institutional	19,156	38,951	19,795	5.7
TOTAL	553,918	902,135	348,217	100.00

Source: Dowall, 1987.

TABLE 4
Increases in Housing Stock by Distance and Type of Housing
1974 - 1984

Type	Distance from CBD					Total
	0-5	6-10	11-20	21-30	Over 30	
Developer Housing	2,406	15,054	61,424	12,096	2,582	93,5
Land Subdivision	- 450	2,754	24,662	9,823	2,284	39,0
Individual Units	-2,795	7,134	31,395	14,395	12,114	62,1
Slum and Squatter	716	3,281	12,165	3,526	1,131	20,8
Shophouse	32,825	40,731	25,929	6,489	6,813	112,7
Institutional	2,569	-2,451	12,730	2,813	4,134	19,7
TOTAL HOUSING	35,271	66,503	168,244	49,142	29,058	348,2

Source: Dowall, 1987.

Increase in Total Housing Stock 1974-84

Increase in Stock

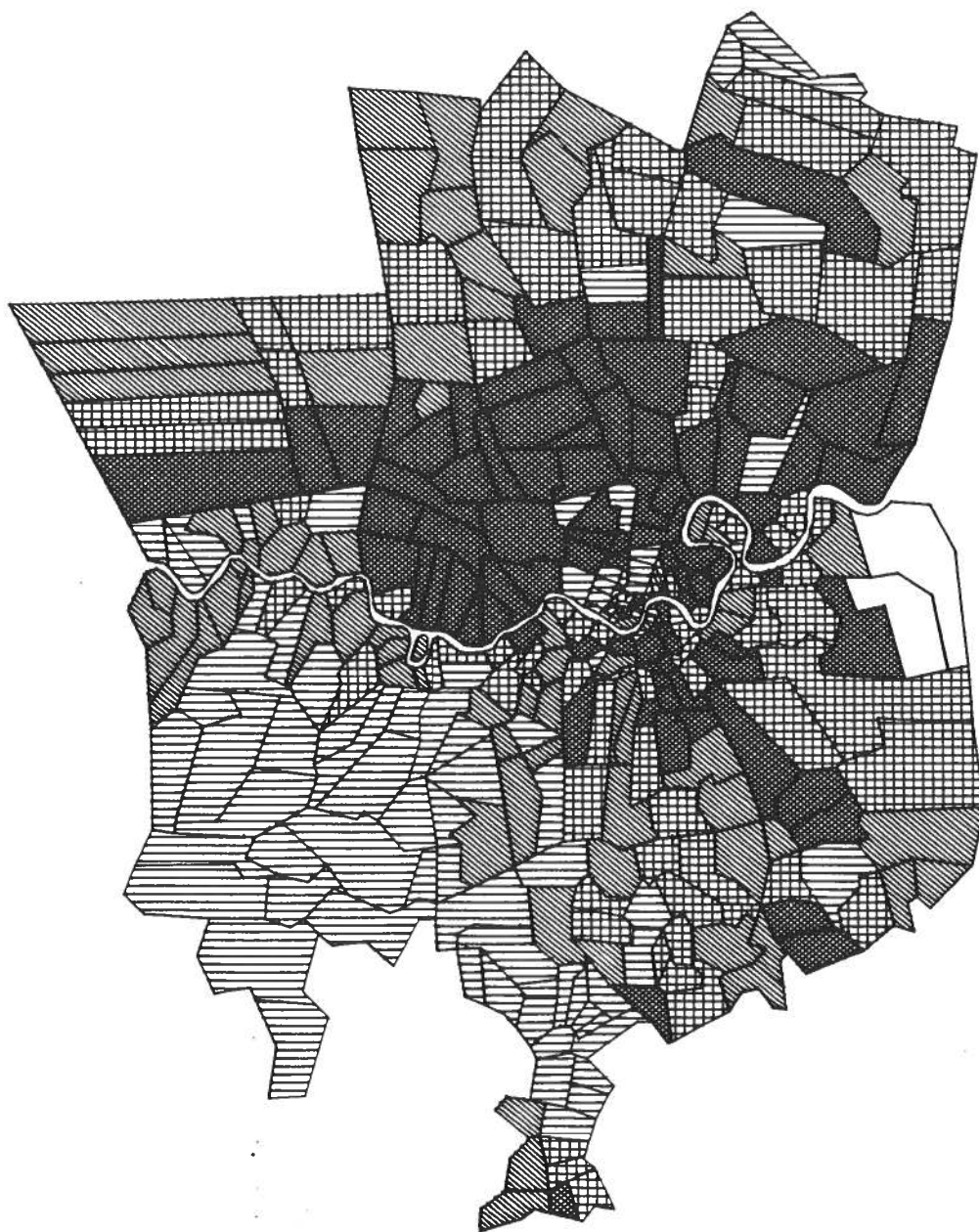
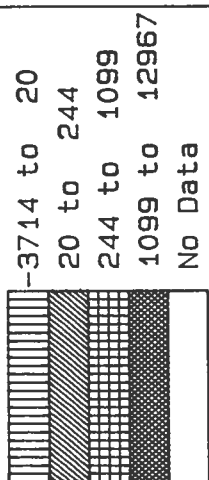
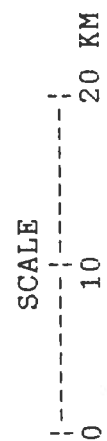


FIGURE 2



Land & Housing Stock Increase 1974-1984

Stock Inc. 74-84

1360	to	2733
2733	to	4106
4106	to	5480
No Data		



FIGURE 3

SCALE

0 10 20 KM

TABLE 5

Land Conversion, 1974-84 by Distance from CBD

Kilometers from CBD	Total Conversion 74-84 (sq. km.)	Percent of Urbanized Land		Percent of Land Converted, 1974-84
		1984	1974	
0 - 5	6.15	94.2%	91.4%	2.7%
6 - 10	31.79	52.5	35.7	16.8
11 - 20	132.27	37.3	21.4	15.8
21 - 30	77.07	19.1	10.3	8.8
over 31	68.29	11.4	5.2	6.2
TOTAL	315.56	40.2%	30.4%	9.8%

Source: Dowall, 1987.

Land Conversion in Sq. Kilometers 74-84

Conversion Sq Km

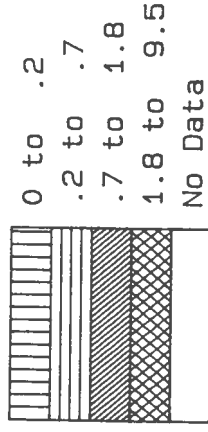
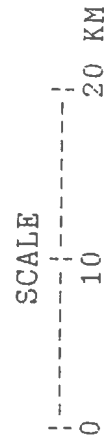


FIGURE 4



Median Soi Adjacent Land Values 1986

\$ per sq. MT.

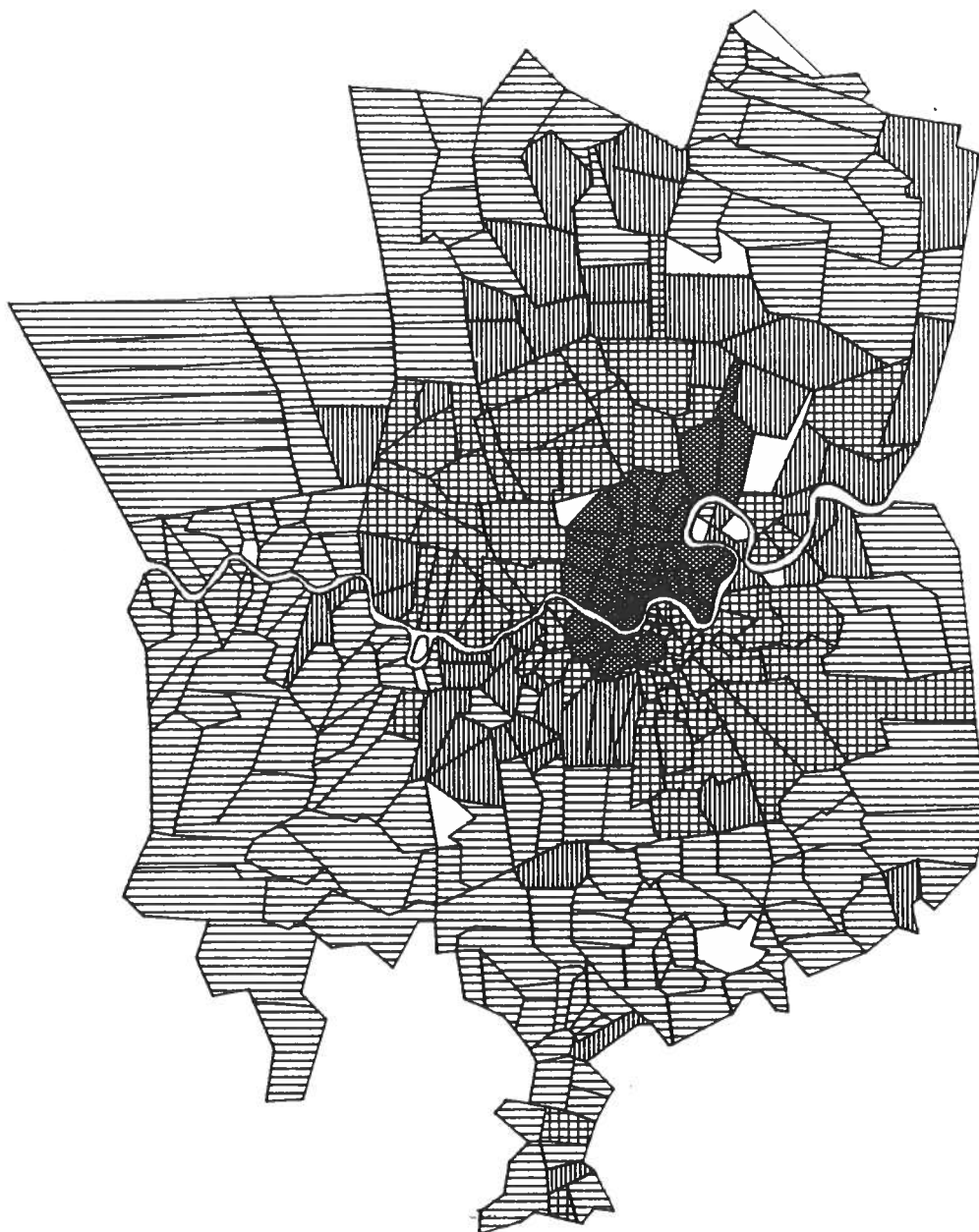
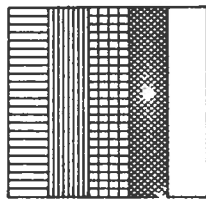


Figure 5

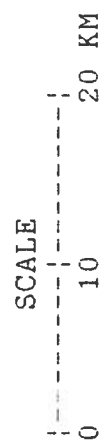


TABLE 6
Land Value Gradients of Parcels off Collector Streets
(Intercept value in real 1986 \$ per sq. meter)

Year	Intercept Value (V_0)	Land Value Gradient (h)	R^2
1977	98.6* (33.1) ^a	-0.1233* (-16.2)	58.5%
1986	94.1* (49.1)	-0.1056* (-25.8)	70.6

a
t statistics in parenthesis.

b
The gradient value is the proportional change in land value for each one kilometer change in distance from the CBD.

*Statistically significant at the 0.001 percent confidence level.

Source: Dowall, 1987.

TABLE 7

Estimated Land Values for Parcels Adjacent to Collector Streets,
1977 and 1986 (in real \$ per square meters)

Distance to CBD in km	1977 \$/sq. Meter	1986 \$/sq. Meter	Annual Average Percent Change
6	46.2	49.9	0.1
10	28.2	32.7	1.8
15	15.2	19.3	3.0
20	8.2	11.4	4.3

Source: Dowall, 1987.

TABLE 8

1980 and 1986 Private Land and House Projects,
Distribution Units by Total Sale Price, in 1986 Dollars

Price Range	1980 Percent of Units	1986 Percent of Units
5,200 - 7,800	0.8%	3.4%
7,801 - 10,400	4.8	6.3
10,401 - 13,000	9.5	26.0
13,001 - 15,600	16.6	13.4
15,601 - 18,200	15.7	4.2
18,201 - 20,800	8.7	4.8
20,801 - 23,400	9.4	0.1
23,401 - 26,000	10.2	7.4
26,001 - 28,600	3.1	2.8
28,601 - 31,200	7.3	26.7
31,201 - 33,800	3.1	1.1
Over 33,800	10.2	3.8
	100.0%	100.0%

Source: National Housing Authority Present Standards and Prices on
the Housing Market in Bangkok, August 1980; Dowall, 1987.

TABLE 9

Private Housing Development Projects, Distribution of Units by
Market Price of Plots, 1980 and 1986, in 1986 Dollars

Plot Price (\$) Per Sq. Meter	1980 Projects Percent of Units	1986 Projects Percent of Units
Less than 19.50	0.0	0.0
19.51 - 26.00	30.7	7.6
26.01 - 32.50	16.3	2.9
32.51 - 39.00	24.5	3.7
39.01 - 45.50	12.2	6.8
45.51 - 52.00	6.1	30.8
52.01 - 65.00	2.0	31.2
65.01 - 78.00	4.1	6.2
Over 78.00	4.1	11.0
Total	100.0	100.0

Source: National Housing Authority Present Standards and Prices on
the Housing Market in Bangkok, August 1980, Dowall, 1987.

TABLE 10

Private Land and Housing Projects, Distribution of Units by Price
of House per Meter, for 1980 and 1986, in 1986 Dollars

Price (\$) of House Per Square Meter	1980 Projects Percent of Units	1986 Projects Percent of Units
78 - 104	5.2%	33.1%
105 - 130	9.2	18.3
131 - 156	25.4	6.4
157 - 182	23.3	30.2
183 - 208	25.7	8.8
Over 208	11.2	3.2
Total	100.0	100.0

Source: National Housing Authority Present Standards and Prices on
the Housing Market in Bangkok, August, 1980; Dowall, 1987.

TABLE 11
Respondent Profile of 1982 Affordability Study and 1986 Survey
1986 Constant Dollars

Characteristics	1982	1986
Median Monthly Income	218	580
Median House Purchase Price	14,878	16,040
% of Annual Income	570%	231%
Median Down Payment	3,562	7,200
% of Annual Income	136%	103%
Median Monthly Loan Payment	109.	144
% of Monthly Income	50%	25%
Median Household Size	4.7	4.0
Median Age of Head	39	36

Sources: National Housing Authority, Housing Affordability in Thailand, 1982, Dowall, 1987.

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