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Report No. 7292-MA

Malaysia
The Housing Sector
Getting the Incentives Right

MALPE221

April 10, 1989

Infrastructure Division
Country Department II
Asia Regional Office

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CURRENCY EQUIVALENTS
(as of June 1988)

Currency Unit = Ringgit (M$)
M$1.0 = US$0.40
US$1.0 = M$2.50

FISCAL YEAR

January 1 - December 31

WEIGHTS AND MEASURES

1 meter (m) = 3.28 feet
1 square meter (sq m) = 10.8 square feet
1 hectare (ha) = 10,000 sq m or 2.471 acres

ABBREVIATIONS AND ACRONYMS

EPU = Economic Planning Unit
FAR = Floor area ratio
JPN = National Housing Department
LTV = Loan to value ratio
MHLG = Ministry of Housing and Local Government
NEP = New Economic Policy
PLCHP = Public Low Cost Housing Program
SLCHP = Special Low Cost Housing Program
TLP = Treasury Loan Program
UPM = Urban Peninsular Malaysia

MALAYSIA

THE HOUSING SECTOR: GETTING THE INCENTIVES RIGHT

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This report is based on the findings of a mission which visited Malaysia during November 2-14, 1987. The mission included the following Bank staff: Lawrence M. Hannah, Alain Bertaud, Stephen J. Malpezzi and Stephen K. Mayo. Patricia Brereton-Miller assisted in Washington.

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MALAYSIA

THE HOUSING SECTOR: GETTING THE INCENTIVES RIGHT

EXECUTIVE SUMMARY

A. Introduction

Background

1. Late in 1985, the Government of Malaysia was confronted with a deteriorating macroeconomic situation, evidenced by falling exports, declining rates of capital formation, and falling GNP. The construction sector, which for a considerable period had been one of the leading sectors in Malaysian economic growth, had experienced a rapid and severe turnaround. After having grown at an average annual rate of 9.7% between 1980 and 1984, value added in the construction sector fell by 8.4% in 1985 and by 14.0% in 1986. In an attempt to deal with the sharp reversal in this sector, the Government decided to implement a Special Low Cost Housing Program (SLCHP). Under the program, some 80,000 units of housing per year (priced at less than M$25,000) were to be built. It was expected that the combined direct and indirect effects of the program would be to raise the rate of GNP growth by as much as 2% per year, contributing importantly to economic recovery. An additional objective of the program was to sharply change the nature of the product being supplied in the Malaysian housing market, offering less-expensive housing to enable proportionally more low-income households to purchase new housing units than had been the case for more than a decade.

2. Not long after the SLCHP was initiated, the World Bank was requested by the Malaysian Government to help assess the Program. This study, which is a response to that request, was subsequently broadened to include all major interventions in the sector. The expanded coverage was thought necessary in order to provide a context for assessing the SLCHP, which has been formulated and implemented in the context of the overall housing market, with all of the accompanying constraints and incentives. It was judged that any attempt to look at the SLCHP as a single program in isolation from other factors affecting the sector might misjudge the programs's effectiveness and possibly even fail to understand the forces determining the program's evolution, problems and achievements. The study therefore recognizes that there is a single market for housing inputs as well as outputs, that most producers are able to build all types of housing units and that the financing for various types of housing often comes from the same sources. This is, therefore, a study of the incentives and disincentives that various forms of government intervention create in a major sector and how efficiency and equity are affected as a result.

Objectives of the Study

3. In light of the above, the objectives of this study are to determine:

(a) whether the housing supply system in Malaysia is responsive and efficient; and

(b) what are the effects of government policies and programs on the sector's development.

B. Approach of the Study

4. Although the recommendations arising out of this study are focused on expediting and increasing the supply of housing for the lower-income population, the approach taken in the report is to consider the factors and policies influencing the delivery of housing sector-wide. The sector is first analyzed from the perspective of the interaction of supply and demand to produce a particular quantity and price of housing in Malaysia. This, along with various international comparisons, highlights the issue of high prices in the Malaysian housing sector. Next, a financial model of major public policy and program interventions in the sector is used to examine the incentives and disincentives created by government policies and regulations and to identify their net impact on efficiency and equity in the sector. This integrated view of the main government interventions allows an assessment of how changes in one policy or program will affect not only the type of housing which is supplied, through changes in its profitability for the developer, but also the type of housing demanded, through changes in subsidies to the consumer. The main value of such an approach lies in its ability to quantify a number of policy-induced interventions and to see their cumulative effect on the behavior of both suppliers and consumers in the housing market.

5. The financial model used in the report employs present value analysis to examine the economic and financial costs and benefits of two major public housing programs as well as several types of private sector housing development. For each type of program or development, a cash flow model for a representative investment is set up and the present value of each government intervention (e.g., land subsidies, financial subsidies, taxes, regulatory costs) is calculated. The use of present value analysis has the advantage of allowing direct comparison of not only the costs and benefits of quite different interventions in various programs and but also the profitability and economic return of various types of housing (high- versus low-cost, owner-occupied versus rental, one location versus another). It thus permits analysis of how government actions such as land-use regulation, financing policy, infrastructure provision, taxation, price controls and other regulations affect incentives to investors.

6. Flowing from the findings of this analysis -- that the land-use standards and infrastructure engineering regulations imposed by the Government constitute the chief constraint to large-scale development of low-cost housing, the report concludes with a comprehensive and integrated assessment of the cost implications of the principal design parameters used in the sector in order to determine how best to reduce costs and increase the supply of low-income housing without significantly reducing the benefits to users. The methodology employed for this assessment is to model all of the design standards which determine land-use and to assess their impact on the net salable area of a given site. The model is able to vary individual standards and measure how changes in land-use practices would affect housing development costs. Land-use and

infrastructure standards are normally established on the basis of an abstract minimum "need" for each service or facility, and each regulation or standard seems reasonable considering only the narrow purpose or specific objective to which it is addressed. However, the standards often have unintended effects on other project characteristics, such as scale, which may result in costly distortions. The analysis carried out in the report shows that all of the standards, taken together, have a significant cumulative influence on costs which necessitates explicit consideration of the trade-offs involved. Thus, standards are important determinants of the type and location of housing ultimately produced.

C. Basic Findings

The Housing Sector

7. The housing sector plays a larger role in the economy than is commonly perceived, with housing investment having been as high as 9% or more of GNP in recent years. Official statistics on housing investment appear to have seriously underestimated the actual level of investment in the sector for at least a decade. The main reason for the statistical discrepancy appears to be that official government estimates rely on data on inputs for housing construction which themselves appear to be seriously underestimated. The alternative estimates rely on data on housing production and on unit prices of housing.

8. Housing sector investment in the early 1980s was at an unsustainably high level, suggesting that recent declines in the level of activity in the sector represent a return to a more normal and sustainable position rather than a short-term aberration. Comparisons of housing investment levels in Malaysia and in other countries with similar income levels during the early 1980s indicate that investment has been far higher in Malaysia than in other similar countries, particularly over an extended period of time. This high level of housing investment was not characterized by significant increases in the number of new units produced but was instead attributable to an extraordinarily rapid and sustained rate of increase in the selling price of new housing.

9. Values of newly built houses increased at a compound rate of about 18.9% per year between 1972 and 1982, dramatically outstripping the rate of increase of either rents or consumer prices, which increased at average rates of 6.4% and 7.0% per year, respectively. Such increases also outpaced nominal income increases, which rose by only 10.5% per year over the same period. For a time, such price increases were fueled by expectations of both future price rises (which promised households that future capital gains would make current sacrifices worthwhile) and future income rises (which promised to make the future burden of housing expenditures an increasingly smaller portion of income). When each of these expectations changed in the early 1980s, it became apparent that such high housing prices could not be sustained. For example, the ratio of the value of the least expensive type of new housing to income rose from 4.6 in 1977 to a peak of 6.9 in 1982, a much greater multiple of household income than is common in other countries. In 1986, the ratio was still 6.0. This suggests that, while many households may have been squeezed out of the

market for new houses, current prices are likely to fall even further before strong demand resumes.

10. The affordability of housing in Malaysia declined, dramatically so for the purchasers of the lowest priced new housing, from about 1977 through 1982. Affordability improved somewhat after 1982 as housing prices flattened out while incomes continued to rise through 1985. The measures of affordability are computed from reported selling prices of new units which are an imperfect measure of price movements in the market for existing owner occupied housing and rents but are indicative of the direction. Although no direct data on changes in the share of households renting was available, the last census shows a large proportion of renters in the major urban areas (over 50%) where prices are the highest and have been rising fastest. Squatter communities are also growing in these same centers. Both indicate an increasing problem of housing affordability especially for the poor in and around major cities.

Why Housing Prices Are So High

11. The high absolute level of housing prices and their rapid rate of change seem to have resulted from a combination of cost-increasing government regulations, an unresponsive supply system and strong demand. On the supply side, a combination of inappropriate physical standards and excessive regulation in the sector contributed to high costs and insufficient responsiveness in the housing supply system. While the costs of most basic housing inputs have been relatively stable during the 1970s and 1980s, the critical factors seem to be the physical standards for housing construction set by the Government, particularly those related to land-use planning and infrastructure provision, and regulatory measures necessitating a time-consuming approval process for any proposed housing development. Rapidly rising household incomes and poorly timed housing finance subsidies for civil servants were the main factors stimulating demand. Many housing purchases may have had an important investment motive during the period of rapid price increases.

12. Analysis of the effects of the physical standards for housing construction on housing prices and output indicates that the design standards for low-cost housing, in terms of unit size, choice of materials and efficiency of local contractors, seem appropriate. However, land development standards, as presently enforced by local authorities, are found to constitute one of the major constraints encountered by developers in responding to the demand for low-cost housing. Using international practice as a yardstick, it appears that about 25% of the land developed for residential purposes is wasted due to excessive road areas, arbitrary setback regulations (i.e., the distance required between a house and the property line) and, to lesser extent, redundant community facilities. Due to such wastage, only 25% to 50% of the land area developed may be salable (in contrast to the 65% typically achieved in other countries). The cost of the land which cannot be sold is therefore passed on by the developer to the home buyer, so that housing costs are higher than necessary.

13. To illustrate, current land development standards in Malaysia result in the construction of low-cost residential projects with road areas per household which are up to four times larger than those used in Asia, Europe and

the United States for similar ranges of plot size. Local authorities often require back lanes of up to 6 m, or more than double the 2.6 m typically used in the United States. The set-back requirement of 4.5 m along vehicular roads implies that corner plots must be at least 140 sq m, only 38 sq m of which are buildable. Since regulations restrict the floor area of units on corner lots to that of units on interior lots, the market value of corner plots is hardly more than the value of an interior plot half its size. With the area of corner plots usually representing about 20% of a development's total salable area, the current regulations result in a significant loss of potential revenues for the developer.

14. The effect of these and similar practices is that about 170 sq m of raw land are required to develop the minimum plot size of 68 sq m in Malaysia although at least a third less land or about 110 sq m would be sufficient if land-use standards were in line with those used elsewhere. Consequently, where only 60 plots per hectare are possible in Malaysia with existing land-use standards, 90 plots per hectare are common in other countries for developments with the minimum plot sizes used in Malaysia. The implications of these standards on house costs are profound. Since land and infrastructure costs may represent between 45% and 60% of the total cost of a low-cost unit in Malaysia, depending on location, use of the unnecessarily high standards has made it almost impossible for developers to build units for less than the regulated ceiling price for low-cost housing of M$25,000, which is still not affordable to many of the low-income population. The standards have therefore made construction of low-cost housing both expensive and inefficient.

15. The standards also make it less profitable for developers to construct low-cost housing than medium-income housing. This is because a developers' profitability is directly linked to the percentage of salable land in a development and the amount of housing floor space built per unit of land. The proportion of salable land in high-density, low-income developments is now less than that of lower density medium income housing, primarily due to the excessive amount of street space required and the stipulation that developers must provide the land for community facilities for large-scale developments, while land for facilities in smaller schemes with fewer units are financed by tax revenues. Current land-use legislation combined with the nation-wide fixed selling price for low-cost housing also makes developers reluctant to build low-cost housing in and around urban areas where the cost of land is high despite greater demand in such locations. To hold costs under the nationally mandated M$ 25,000 for low-cost housing a developer must reduce the housing floor space to compensate for higher land prices which also reduces the rate of profit. The poor profitability of constructing low-cost housing in urban areas where it is most needed, and most in demand, distorts developers response to market signals. If land-use standards were revised, private developers would likely build more low-cost units because: (a) they would be able to develop land in more expensive areas where the demand for low-cost housing is greater; and (b) they would be able to build a larger area of floor space per unit of land when building low-cost housing and therefore make more profits than when building middle-income housing.

16. Overly complex and time-consuming <u>housing project approval procedures</u> at the local level also contribute to the high cost of new housing

as well as the unresponsiveness of supply. Project land-use and building approvals, for example, normally take more than three years to obtain, and may take as long as five. On top of this, 15 to 20 separate government departments are typically involved in the approval of plans and specifications, adding another two to five years to project completion. The long lead time required to bring a project to fruition due to the lengthy process of obtaining land-use, subdivision and building approvals as well as approval of site plans and building specifications prevents developers from responding quickly to changes in demand, thus increasing their risks and effectively raising costs.

17. The extensive direct production of housing by government entities in Malaysia has also increased the risks associated with housing construction for private firms. The public sector's share in the housing market increased from an estimated 25% in 1976-80 to 35% in 1981-85. Not all of this construction has been for the low-income groups; in some cases the public and private sectors are competing for comparable market segments. The public sector has the advantage in this competition, however, since its costs are often lower than those of the private sector due to differential treatment by local officials who facilitate the approval process for public sector developers and apply standards less stringently. The basis for differential treatment is not found in any statute or regulation but is rather a matter of practice. The public firm may also be in a stronger financial position, due to implicit government backing, enabling it to hold unsold inventory and cut prices more aggressively than private competitors.

18. Allocation practices for low-cost housing in Malaysia also directly add costs for developers and may decrease responsiveness by raising uncertainty as to when completed units may be sold. The specific requirements are that a fixed share of the units, commonly 30% to 40%, be reserved for indigenous Malay purchasers. States can and do change allocation requirements for particular projects if developers have made good faith efforts to meet the quota and fail. But such changes take time and, given current interest rates, a year's delay, which is not uncommon, can easily wipe out any profit margin developers enjoy ex ante.

19. The lack of supply responsiveness in the Malaysian housing market, due, inter alia, to the lengthy procedures involved in housing development in Malaysia, seems to be supported by comparisons with other countries in a similar position. Despite the steady growth in the Malaysian housing stock in the past decade, a comparison with a number of other countries (which might have been expected to produce less housing) puts Malaysia near the bottom of the range for percentage increase in housing stock, further supporting the conclusion that strong demand was translated relatively more into higher housing prices than into the number of units. Another test of housing supply elasticity is to examine the way in which housing completions vary in response to housing price changes. In normally functioning markets, housing completions rise during periods of rapidly increasing housing prices, but in Malaysia housing completions, whether publicly or privately carried out, has shown little responsiveness to rises in the housing price index or to the availability of housing finance. Lack of market responsiveness therefore seems to be a key constraint in increasing the availability of low-cost housing.

20. On the demand side government intervention may have stimulated demand for low-cost units while other policies and practices were increasing costs and discriminating against the supply of these same units. The practice of limiting and controlling squatter settlements may have precluded an "escape valve" which has been available in other countries in similar circumstances and has created pent-up demand for low-income housing which cannot be met at current prices. More serious has been the Government-sponsored Treasury Loan Program which makes mortgage loans available to civil servants, without regard to housing costs and at interest rates that were typically about 4% per annum, less than half the rate of interest for private mortgage finance. During 1981 and 1982, the years in which the TLP expanded most rapidly, the program accounted for between 30% and 40% of all formal sector lending for housing, and for most of the net increase in housing sector lending in those two years. The effect of the subsidy was to reduce the real cost of housing for civil servants by approximately half. This, in turn, has removed the incentive for careful shopping and during the early 1980s created considerable upward pressure on housing prices.

21. The high price of housing in Malaysia is not only due to the induced high costs described above but is the product of an unresponsive housing supply system in the face of strong demand. In Malaysia, there is a strong correlation between annual changes in the prices of newly built housing and changes in the rate of increase of household incomes, with prices rising at a rate that is 50% faster than the rate of increase of household incomes. This is a sign of a highly price-inelastic housing supply, that is, a housing supply that is unable to adjust fully or quickly to demand shifts, with the result that much of the market's supply response is reflected in increasing prices rather than increasing quantities of new housing units. This lack of responsiveness is one of the most critical policy issues in the housing sector.

Government Response

22. Housing Programs and Subsidies. The Government has for some time recognized the high cost of new housing in Malaysia, and, in keeping with its goal of ensuring that all Malaysians, particularly the low-income group, have access to adequate shelter, has sponsored various initiatives to promote the availability of new housing to the lower end of the income distribution. The major interventions with this focus have been the Public Low Cost Housing Program (PLCHP), the SLCHP and directed credit for the purchase of low-cost units, including interest rate ceilings on mortgages.

23. The PLCHP was launched under the Fourth Development Plan (1981-85) and is now winding down from a target of 176,500 units during the Fourth Plan to just over 67,000 units during the Fifth Plan. The units are developed and built directly by the States, although design and construction are normally privately tendered. The maximum sales price is M$25,000, except in Kuala Lumpur where it is higher. The Federal Government develops overall guidelines for the program and provides financing to the States at 4% interest. The States relend these funds to purchasers, typically at a fixed rate of 5.5% for 25 years. The maximum loan size is M$25,000. The PLCHP has not been very successful, as of mid-1987, only 41% and 10% of the Fourth and Fifth Plan targets, respectively, had been achieved.

24. The SLCHP was launched in 1986 with the twin goals of stimulating the economy by a hoped-for 2% a year and increasing the supply of low-income housing. The most important difference between the PLCHP and the SLCHP is that the SLCHP has a wider range of developer options and, in particular, makes greater use of the private sector. This increased reliance on the private sector reflects not only an attempt to reduce the burden carried by the public sector under previous low-cost housing programs but also the recognition that private builders have commonly had more success in building and marketing units than public builders. Two features of the SLCHP are particularly aimed at attracting consumers and producers to participate in the program. For consumers, financial institutions have been instructed by the Government to provide adequate credit to qualifying buyers; for producers, selected infrastructure standards have been reduced and the process for approving development plans has been accelerated.

25. Like the PLCHP, SLCHP progress has been disappointing. Of the 80,000 units to be built during the program's first year (July 1986-June 1987), at the end of April 1988, only 15% were complete, 9% were awaiting infrastructure and 26% were at various stages of construction. The reasons for the shortfall under the SLCHP as well as the PLCHP are very similar. In both programs, developers were being asked to undertake projects which they believed would offer them little or no profit and were therefore understandably reluctant to participate. The cumbersome regulatory environment affecting the programs, and the inappropriate design standards used directly increased costs and made it unadvantageous to produce the low-income units. This was exacerbated during the peak period of the PLCHP when demand in the upper portions of the housing market was high, so that even the majority of public developers strayed far from their declared policy of building low-income housing. When low-income units did get built, sales were frequently slow because the sites selected were often unattractive to prospective buyers. Developers might have chosen poor sites due to government policies and practices such as the fixed maximum selling price of low-cost units which makes the use of more expensive land unprofitable, and public agencies normally use state land, which tends to be in undesirable locations, because the States receive only a nominal fee for the land.

26. The Government has also attempted to assist low-income buyers under a directed credit policy which sets minimum lending targets and places an interest rate ceiling on low-cost units. In late 1987, when uncontrolled rates were 13-15%, the controlled rates were 9.5% on the financing of units costing less than M$60,000 and 11% for units costing M$60,000 to M$100,000. Although these rates are variable, interest rate adjustments are in frequent. Since the commercial lenders who provide the subsidized rates and finance the subsidy element are often required to borrow short and lend long, there is a possibility that future inflation could quickly decapitalize these institutions.

27. Incentives and Disincentives in the Supply and Demand of Low-cost Housing. While the general reasons for the Government's inability to stimulate production of low-cost housing are fairly clear, the incentives and disincentives operating in the market are better understood through the use of a financial model which quantifies the effects of government interventions in the sector and how they affect housing costs and incentives to buy and to build.

For this analysis, a model was designed which permits an evaluation of housing policies and programs from the points of view of the economy, housing suppliers and households, i.e., how combinations of interventions and changes in specific policies and programs influence the attractiveness of individual projects from the three perspectives. The model was used to assess 13 representative low-cost housing investments and the effect on those investments of the following government interventions: land provision, infrastructure and construction subsidies; finance subsidies; the cost of the overly-generous land-use and infrastructure standards commonly used for this type of housing; the lengthy plan approval process; and the cost of relevant taxes.

28. Results obtained from this type of analysis are admittedly indicative, and will vary depending on the assumptions adopted. They are, however, very useful in identifying the relative magnitude of the interventions and in understanding how the various subsidies and costs create incentives which affect the behavior of producers and consumers of housing. For example, low-cost housing may be constructed by public or private sector developers on either public or private land. Depending on the combination of interventions affecting the particular unit or project, the economic cost of producing a house may exceed its market value, so that it is a poor use of resources from the perspective of the overall economy. This is true with some public sector low-cost units on public land in undesirable locations. Developers, for their part, may be faced with high regulatory costs which drive up overall production costs so that their financial cost is less than the unit's market value. While such units would normally not be built, in some instances subsidies to developers can offset the extra financial costs of regulation and make uneconomic housing financially profitable. Similarly, if subsidies to buyers are large enough, uneconomic or unprofitable units will be heavily in demand. The combinations of interventions can therefore create unintended incentives and undesirable outcomes.

29. The model clearly indicates that the various government interventions in the housing sector, either introduced in conjunction with the low-cost housing programs or related to other policy objectives, are often internally inconsistent and likely counterproductive. The extensive public sector role in housing development programs seems to have made housing investment less economically efficient, as suggested by the fact that PLCHP units are often worth less than they cost to produce -- not due to production inefficiencies but because public developers are frequently constrained in their choice of location to publicly available land (and may also be responding to regional development goals rather than demand). Yet these units may be heavily in demand if subsidies to buyers are large enough. The overall impact of the SLCHP is similarly skewed. The SLCHP is superior to the PLCHP in several respects, including its potential economic return, because its more reasonable standards and speedier regulatory procedures reduce costs and the larger private sector role is likely to improve decisions about location. However, the over-zealous application of higher standards and regulatory practices by local authorities, responding to government incentives external to the program, adversely affects the profitability of building the small, lower-cost units. Net incentives under the SLCHP may also work against privatization efforts by making construction of low-cost units less profitable than higher-cost ones and of greater risk due to public sector competition. Thus, two prime policy

objectives -- affordability of housing and privatization -- may be at risk. Somewhat perversely, the land subsidy that significantly lowers the overall financial cost of public sector housing developers normally also means that the unit is poorly located and thus an unacceptable investment from the points of view of both the economy and the house purchaser.

30. The model's quantification of both the subsidies and costs embedded in government policies and public housing programs further indicates that subsidies are deep but are ineffective in reducing costs or stimulating more low-cost housing production because they are offset by high regulatory costs and perverse incentives for suppliers. The main subsidies are publicly supplied land, reduced infrastructure costs and below-market financing. The largest subsidy in many publicly developed units is free or nominally priced land worth about one third of the selling price; however, this is typically offset by an extra regulatory cost of a similar magnitude. Regulatory costs are broadly defined in this analysis, with the value of the land wasted by high land-use and infrastructure standards being the largest component of such costs. The main additional regulatory costs arise from an unusually extensive, complicated and time-consuming housing plan approval system; housing allocation requirements that delay sales; and risks created by unfair competition from public developers. Of these, only the last is not quantified in this study.

31. The equity implication of this analysis is that, despite large transfers to housing purchasers, the distribution of subsidies is not supporting government housing program goals or enunciated policies. In fact, to the extent that beneficiaries can be identified, the incidence is regressive, with a relatively small number of middle- and even upper-income Malaysians receiving large windfalls. Subsidies are deep and, in the case of the main public programs where the selling price is fixed, related to location rather than any other criteria. Under the present policy of a fixed national maximum selling price for low-income houses, the buyer in a large city may get a unit worth twice the purchase price, while another, in a remote location, may receive almost no subsidy. An additional major subsidy to some home buyers is the TLP which is clearly regressive within the civil service since the amount of subsidy is positively related to income. General directed credit for housing is also not likely to be progressive, although there is no information on the income of borrowers to support this conclusion.

32. In summary, it is clear that the market, as influenced by present policies and programs, is not yielding enough low-cost units to satisfy the potential demand from lower-income groups. Subsidies are deep for various public programs but inefficient because they are offset by high regulatory costs. A major conclusion is that, holding location and design constant, private developers build better and more marketable low-cost units than public developers. However, in the absence of subsidies, even the most efficient builders cannot deliver affordable houses in locations where they are in demand in the current regulatory environment. On the other hand, were regulatory provisions modified, it would be possible to increase affordability substantially while at the same time reducing the reliance on housing subsidies.

D. Recommendations

33. The Government's attempt to stimulate economic growth through housing construction under the SLCHP does not appear to have been successful to date. In large part this is due to the normal time lag encountered between sectoral investment and its effect on GNP, although in this case the situation is complicated by Malaysia's unresponsive housing supply system. The housing sector would therefore seem to be a poor conduit for macroeconomic stimulation, especially in the Malaysian context.

34. The other goal of the SLCHP, i.e., to enable a larger portion of the low-income population to purchase new housing, nevertheless remains important and still appears viable. But little progress will be made in increasing the availability of low-income housing unless basic policy reforms are introduced to correct the fundamental structural problems affecting the whole housing market, the symptoms of which are unnecessarily high costs and a housing supply system that responds poorly to changes in demand. To do this, the following recommendations are proposed with the objectives of increasing the responsiveness of the housing supply system, lowering housing costs, improving suppliers' incentives to provide low-cost housing, and focusing sector subsidies on the low-income population. While the suggested measures each have a specific overriding objective, they tend to be interrelated and mutually reinforcing.

Increased Responsiveness in the Housing Supply System

35. Malaysia's housing supply system could be made more responsive by reducing the number of steps involved in gaining permission for a proposed housing development and by shortening the time required for review of plans and approval. Even under the SLCHP, which is supposed to allow "one-stop" processing, the process of gaining approvals of development proposals can delay construction by from 8 to 18 months. An analysis of the differences between short and long approval times under the SLCHP should serve as a model to improve performance nationally. The ultimate objective of this change would be to lower both the risks and costs entailed in the housing development process and to increase suppliers' ability to meet demand by providing the type of housing people want, where they want it.

Lowering Housing Development Costs

36. Analysis of the principal housing development design parameters indicates substantial scope for lowering housing development costs, and thus making new housing more affordable to the low-income population, by: (a) adjusting land-use standards to use land more efficiently, (b) revising the system of financing community facilities for large-scale developments, and (c) ensuring that infrastructure engineering design standards reflect an appropriate trade-off between capital and maintenance costs.

37. Revision of Land-use Standards. In determining land-use standards, the guiding principle should be that the profitability of low-cost housing should not be less than that for other types of housing. Rather than

arbitrarily reducing all standards, it is recommended that global parameters be set as planning targets, the critical parameters being the percentage of salable land in a development and the floor area ratio (FAR), i.e., the ratio of house floor area to plot size. Analysis carried out by the Bank suggests targets of 55% for salable land and a 0.37 FAR (salable land in low-cost developments now ranges from 28% to 47%, with FARs of 0.25 to 0.27). The global measures should be used as screening devices within which developers and local authorities would be allowed to make trade-offs among competing land uses based on their judgement of marketability or demand. If the principle of using global parameters is accepted, then current land-use regulations governing housing set-backs and road area requirements, including those for back lanes, would need to be changed. Since acceptance of appropriate standards by local authorities has already proven to be an issue under the SLCHP, it is further recommended that federal funding for low-cost housing be made contingent on the adoption by local authorities of the improved standards.

38. Financing of Community Facilities. The present system of determining the scope of and financing land for community facilities also raises the cost of large-scale developments aimed at the lower-income population and in so doing distorts developers' decisions about the size and type of projects they will undertake. Under current regulations, the percentage of land allocated to community facilities is different for large- and small-scale developments because certain types of community facilities have to be provided only when a population threshold is reached. Furthermore, if a given area is developed through a number of small schemes, below about 500 plots each, the land to be used for community facilities is purchased by the local authority using general taxation revenue, but if the same area is developed through a few large schemes, above about 2,000 plots per scheme, the cost of land for community facilities is borne by the developer and therefore passed on directly to the future plot owners in the price of the dwelling. These rules discriminate against large-scale projects and small plot sizes; they distort the price of land development, as the unit cost of developed land in a large scheme appears higher than in a small scheme, and make the source of financing of land for community facilities dependent on the scale of the scheme. It is therefore recommended that land for larger community facilities be financed out of a development fee. A study to establish a detailed plan of how such a fee might be structured for financing community facilities is also needed.

39. Infrastructure Design Standards. Local authorities are currently allowed to require more than official national minimum standards for roads constructed in conjunction with housing developments; as a result, both road standards and development costs are unnecessarily high. Their reluctance to allow lower, but acceptable, standards is motivated by two factors. First, they have a strong vested interest in ensuring that a maximum length of streets in new developments are at least 30 feet wide since they receive a Federal Government grant for road maintenance, the amount of which is based, among other things, on the length of streets in their areas that are wider than 30 feet. Since the grant is fungible and does not have to be spent on maintenance, it is an attractive local source of income. Second, they tend to prefer higher road standards overall in order to reduce subsequent maintenance costs, which they themselves must finance. It is therefore recommended that an objective formula for calculating the least-cost mix of capital versus recurrent costs for all

infrastructure included in low-cost developments be established and applied. It is further recommended that the formula for Federal Government transfers, such as the road maintenance grant, be revised to support more efficient designs.

Improving Developers' Incentives

40. Flexible Pricing of Low-cost Housing. Variations in market conditions throughout Malaysia are not matched by variations in the price of low-cost units (which is controlled at a maximum of M$25,000). In better locations, where the market value of these units is highest, the financial loss to the developer charging the much lower controlled price is greatest. The developer thus has an incentive to minimize production of low-cost units to only the number required to obtain permission for some other profitable activities, such as building more expensive housing. To improve the correspondence between signals to developers (their profitability) and the economic desirability of building each unit, it is recommended that the price of low-cost units be based on the unit's location using existing information on local prices of a standard unit. Since the current standardized pricing policy is also the primary determinant of buyer subsidies, with the largest subsidy going to the buyer in the larger centers where housing price levels are highest, this proposal would also reduce "untargeted" subsidies.

41. Market Pricing of Land. While well-intended, the present practice of providing state land at nominal prices (currently M$0.20 per square foot) may actually distort housing production in two ways. First, since the States know that they will not be fully compensated for any land provided for low-cost housing, they have little incentive to select more attractive and better located parcels. Second, developers (public or private) who receive free land may not be as conscious of using it efficiently even though other associated costs, such as infrastructure, may be higher as a result of inefficient land-use plans. All transfers of land for low-cost housing from State Governments should therefore be on the basis of market prices, with any subsidies provided separately under an explicit plan to assist developers or buyers.

42. Redefinition of Public Sector Role in Low-cost Housing. A major area for reform of policies concerns the need to clarify the role of the public sector in the housing market. The Government's role in regulating the sector should be re-examined, with the objective of ensuring that the regulations and standards imposed protect the buyer while not unnecessarily constraining sector growth and efficiency. Also, public sector housing investments have not always been economically efficient. If it is decided to continue direct public sector involvement in housing development, it is recommended that incentives for the production of low-cost housing be reviewed and adjustments made so that they are neutral in respect to public-private developers, as well as to project scale, location, and house value.

43. Improved Procedures for Allocation Quotas. Requirements that 30% to 40% of low-cost units be allocated to Malays and that the State Governments approve all buyers tend to discourage private sector involvement in low-cost housing development since sale of completed units is delayed, thus raising developers' holding costs. Replacing the quotas with direct subsidies to

Bumiputras would lessen this adverse impact. Alternatively, the cost of the quotas could be reduced if the authorities formalized what constitutes "good efforts" on the part of developers to meet the requirements, then released the obligation once those conditions had been met.

Targeting of Subsidies

44. Development of a Subsidies Policy. A primary purpose of subsidies is usually to achieve an equity objective, be it assisting a deserving household to purchase better accommodation or reducing the price of housing by lowering costs for a developer. At present, the numerous explicit and implicit subsidies in the housing sector in Malaysia do neither very well. Large subsidies to developers, in the form of reduced land costs and cheaper infrastructure, are off-set by high regulatory costs. The substantial subsidies conferred on some buyers of low-cost housing do not seem related to need or any other program goal. The subsidized TLP goes to a group not near the bottom of the income distribution. Consequently, it is recommended that an explicit subsidy policy be formulated and agreed, specifying the purpose, level and target recipients for housing subsidies.

45. Phasing out of Directed Credit. Lending quotas for commercial banks and finance companies may have originally been necessary to introduce those institutions to mortgage lending but, given the size of the housing loan portfolios they presently hold and the general liquidity of the banking system, the time may be appropriate to consider phasing out these quotas. Administered interest rates subsidizing the purchase of smaller houses represent a significant, but by no means the largest, distortion in the housing market. Subsidies resulting from this policy are roughly estimated at M$123 million a year, or about 25% of all housing credit subsidies provided. It is not clear that the present system of compulsory lending at rates only slightly below the market is better for home buyers in general than better access to credit, with banks allowed to charge rates matching their risk assessment of each type of loan. It is thus recommended that the present directed credit regulations for housing be reviewed with the objective of establishing a timetable for phasing them out.

46. Reform of the TLP. Although the TLP was primarily designed as part of the compensation package for public employees its may have had an important effect on the housing sector. TLP loans bear a much higher subsidy than those provided under directed credit arrangements and represent about 60% of all housing credit subsidies provided annually by the Government. A typical TLP loan is subsidized at up to 40% of its face value if evaluated ex ante at current market rates for similar loans. While current TLP contracts specify that interest rates are variable, the Treasury has not been able to exercise this option in the past, and many civil servants believe the rate to be fixed in practice (or at least extremely sticky). The aggregate subsidy under the program is roughly estimated at about M$400 million a year or over twice the annual development budget for housing. Further, this subsidy is not explicitly budgeted. While the subsidies in the other programs are not negligible, further reform of the Treasury program could have a high payoff. The Government may also wish to examine the need to tax below-market loans given by private firms to prevent any distorting effect on the housing market.

Action Plan

47. The above recommendations might be implemented under the following three-part action program addressing the key requirements for the development of a more dynamic low-cost housing supply system in Malaysia. The main areas to be addressed are listed, along with a description of required changes in policies and practices as well as the main objective of these changes.

(a) **Revise land-use and infrastructure standards and selected regulatory practices.** The objective would be to increase the supply of low-cost units by making it at least as profitable for developers to build them as other types of housing and by making it financially attractive for local authorities to accept more appropriate standards. The main mechanisms for achieving these objectives would be (i) the revision of key land-use planning parameters to achieve at least a 55% salable land area and 0.37 FAR on low-cost sites and (ii) revision of the formula by which federal road grants are calculated. In cooperation with the Town and Country Planning Department of the Ministry of Housing and Local Government (MHLG), the Bank could assist the Government to develop prototype site plans which would become the basis for revised land subdivision legislation and revised infrastructure financing mechanisms which could be implemented on a pilot basis to demonstrate the feasibility and attractiveness of such plans to developers and home buyers. Changes in the formula for financing infrastructure would be studied and discussed with the Federal Treasury.

(b) **Rationalize and reduce subsidies.** The objective would be to make the present pattern of subsidies in housing as rational as possible while reducing the subsidy level to the minimum consistent with the Government's social and political objectives. The following steps are proposed: (i) measure existing subsidies, (ii) develop an explicit policy on subsidies, and (iii) draft an action plan to change the size and pattern of subsidies. The measures to be changed involve a number of ministries including MHLG and the Treasury. Step (ii) could be undertaken with MHLG and subsequent steps possibly under the guidance of the interministerial policy committee which presently exists for housing. The main actions required include the introduction of flexible pricing for low-cost housing units, based on local market prices; reimbursing State Governments for the market price of land they supply for low-cost housing developments; adjust incentives for the production of low-cost housing so that they are neutral with respect to public and private sector developers; and formalize procedures for meeting ethnically-based allocation quotas.

(c) **Reduce regulatory costs.** The objective would be to make the housing supply system more responsive, primarily by streamlining the approval process required for housing development, thus lowering costs and reducing risks to suppliers. This might be done by analyzing implementation experience under the SLCHP and determining

why the time required for approvals varied so much among the individual SLCHP developments. The expected result of this exercise would be a clearer understanding of the costs of unnecessary regulation and inefficient processing of applications as well as recommendations on how to shorten and streamline the process.

1. INTRODUCTION

A. Background of the Study

1.1 Late in 1985, the Government of Malaysia was confronted with a deteriorating macroeconomic situation, evidenced by falling exports, declining rates of capital formation, and falling GNP. The construction sector, which for a considerable period had been one of the leading sectors in Malaysian economic growth, had experienced a rapid and severe turnaround. After having grown at an average annual rate of 9.7% between 1980 and 1984, value added in the construction sector fell by 8.4% in 1985 and by 14.0% in 1986. In an attempt to deal with a sharp reversal in the sector, the Government decided to implement a Special Low Cost Housing Program (SLCHP), under which some 80,000 housing units per year (priced at less than M$25,000) would be built. It was expected that the combined direct and indirect effects of the program would be to raise the rate of growth of GNP by a much as 2% per year, contributing importantly to economic recovery. An additional objective of the program was to sharply change the nature of the product being supplied in the Malaysian housing market, offering less-expensive housing to enable a larger proportion of low-income households to purchase new housing units than had been the case for more than a decade.

1.2 Not long after the SLCHP was initiated, the World Bank was requested by the Malaysian Government to help assess the Program. This study, which is a response to that request, was subsequently broadened to include all major interventions in the sector. The expanded coverage was thought necessary in view of the single market for both inputs and outputs in the housing sector which make it difficult to accurately assess one program in isolation from the larger sectoral environment. The study has therefore evolved into a consideration of the incentives and disincentives that various forms of government intervention create in the sector.

B. Objectives

1.3 The objectives of this study are to determine:

(a) whether the housing supply system in Malaysia is responsive and efficient; and

(b) how government policies and programs affect the sector.

As a result of this focus, it has not been considered necessary to treat all aspects of housing policy either exhaustively or equally.

C. The Approach

1.4 The report considers the sector from the larger perspective of the major influences on its development and the factors responsible for its current structure, particularly the lack of adequate low-cost housing. The sector is first analyzed from the perspective of the housing market, which, along with various international comparisons, highlights the issue of high housing prices. Next, with the help of a financial model and present value analysis, the report quantifies the incentives and disincentives created by the major public policy and program interventions in the housing sector and identifies the net effects of these actions on efficiency and equity in the sector. This integrated view of the main government interventions allows a detailed consideration of how changes in one policy or program affect either the type of housing supplied, by changing the profitability to the developer, or the type of housing demanded, by changing the subsidies available to the consumer. The main value of this approach lies in its ability to quantify a number of policy-induced interventions and to examine their cumulative effect on the behavior of both suppliers and consumers in the housing market. Finally, some of the principal design parameters and regulations for the sector are analyzed, again in a comprehensive and integrated framework which permits measurement of the cumulative effects of these standards on housing costs.

1.5 The study has five chapters. This introduction is followed by a general description of the sector - the housing stock, its growth and quality, financial intermediation in the sector, and the Government's major objectives and programs for the sector. The housing market is examined in Chapter 3 and the major factors responsible for high housing prices in Malaysia are identified. A representative sample of the government initiatives are analyzed in Chapter 4, using the financial model mentioned above to provide a quantification of their costs. Chapter 5 considers the most costly of these interventions, i.e., standards and regulations for the housing sector as a whole, and identifies the design parameters with the largest impact on costs and developers' profitability.

2. THE HOUSING SECTOR IN MALAYSIA

A. Demographic Trends

2.1 More than one third of Malaysia's nearly 17 million citizens live in urban centers of over 10,000 people. Between 1970 and 1980, the urban population grew at an annual average of almost 5%, considerably higher than the less than 3% growth of the total population. Furthermore, as a result of declining household size, the number of urban households grew by almost 6% per annum during the same period.

2.2 In a typical recent year, about 70,000 new urban households were formed in Malaysia, about half due to natural population growth and the other half reflecting migration to urban areas. Since migration is expected to continue at a similar rate, the level of urbanization should surpass 40% by the end of the century. The current dominance of the capital region and the Klang Valley area is expected to continue.

B. The Housing Stock

Growth

2.3 Growth in the stock of dwellings in Malaysia between 1970 and 1980 reflects both the increasing urbanization of the country and the strong economy during that period. While the total number of dwellings increased by only 3.8% p.a., the number of urban housing units rose at an annual average rate of 7.1% (Table 2.1). Therefore, despite the rapid rise in the number of urban households, the availability of urban housing actually improved. This is also indicated by Malaysia's housing supply ratio (i.e., the ratio of dwellings to households) which showed a substantial increase in urban areas from 78% in 1970 to 87% in 1980 and is estimated at about 90% at present. This level is relatively high compared to that of other countries at similar income levels and represents a considerable achievement. The value of the supply ratio is limited, of course, by not capturing the qualitative and distributional dimensions of the housing stock.

Table 2.1: Population and Housing Stock

		1970	1975	1980	1985	Rate of Change 1970-80
Total Population	(thousands)	10439.4	11985.1	13745.2	15677.0	2.8%
Urban Population	(thousands)	2798.6	3645.5	4492.4	5679.2	4.8%
Urban Share of Population	(%)	27%	30%	33%	36%	-
Urban Households	(thousands)	480.7	668.3	855.8	1081.9	5.9%
Total Dwellings	(thousands)	1601.1	1966.9	2332.6	n.a.	3.8%
Urban Dwellings	(thousands)	375.0	558.2	741.3	n.a.	7.1%
Urban Dwellings/Households	(%)	78%	84%	87%	n.a.	-

Sources: Department of Statistics Malaysia, Population and Housing Census, 1970 and 1980; 1985 data obtained from MHLG; 1975 data estimated by interpolating.

Public vs. Private Role

2.4 As shown in Table 2.2, the private sector built about 75% of all new housing units during the period of the Third Malaysia Plan (1976-80) but only about 65% during the Fourth Plan period (1981-85). This decline in private sector participation resulted partly from generous federal funding for public programs and the attractiveness of the property market to numerous state and local governments. The number of public enterprises active in the housing market grew rapidly from the late 1970s on, when they were often producing new housing for middle- and upper-income households. However, due to a slowdown in sales and the accompanying financial problems of private and public housing developers in the mid-1980s, the public sector's share of new units to be constructed during the Fifth Plan period (1986-90) is targeted to decline to about 21%.

Table 2.2: New Housing Units Constructed, 1976-90

Implementing Sector	1976-80 Third Plan No.	(%)	1981-85 Fourth Plan No.	(%)	1986-90 Fifth Plan (goal) No.	(%)
Private Sector	362,680	75	347,876	65	552,500	79
Public Sector	120,791	25	189,051	35	149,000	21
Total	483,471	100	536,927	100	701,500	100

2.5 Private sector housing construction is carried out by developers, cooperatives and individuals as discussed below. While most housing is supplied for the formal market, an increasing share is constructed informally, that is, outside of normal government regulations and procedures:

(a) Private Developer Housing is formal sector private housing built by registered developers, often in large-scale developments. The formal sector is well developed in Malaysia, and many registered developers are members of a well-organized Housing Developers Association. Few direct incentives are offered by Government to encourage production by private developers.

(b) Cooperative Housing is housing provided by cooperative associations which are private entities. Housing cooperatives receive some government assistance, primarily through tax concessions.

(c) Individual Housing is formal housing, legally built, but not in a large-scale development (and hence not subject to some planning regulations for large developments such as those requiring the provision of infrastructure and community facilities). In general, these are constructed by small-scale builders catering to the market for individual units in existing neighborhoods, as opposed to new developments. While individually small,

collectively these builders construct a substantial share of the formal sector total, almost as many as the larger developers did during the Fourth Plan.

(d) Informal Sector Housing is built illegally, occasionally on private but mostly on public land, in contravention of land-use regulations and often without payment for use of the land. Precise statistics on the number of urban squatters and informal housing production are not available, but census data indicate that there are approximately six undocumented units (presumably in the informal sector) built for every ten formally recorded units (see para. 3.6). During the last several years, when incomes and formal sector housing production have been falling, it is likely that informal sector housing has been increasing in relative terms.

Housing Quality

2.6 The quality of shelter in Malaysia has also been improving as the quantity grew. According to the 1980 Population and Housing Census, the proportion of all housing units with piped water, electricity, adequate toilets and separate bathrooms and kitchens rose from 57% in 1970 to 75% in 1980 in Peninsular Malaysia. This considerable aggregate improvement was largely due to major changes in the quality of rural housing since urban dwellers experienced only a modest rise in the availability of services, from an already high level of 84% to 88%. In urban areas, about 90% of the improvement came from the addition of new fully-serviced units rather than extension of services to existing dwellings.

2.7 Despite this indication of increasing housing quality, census data on the permanency of housing (Table 2.3) indicate that the quality of housing in Malaysia is poor. The latter statistics, however, are misleading since, as the census itself cautions, the reported statistics on the permanency of housing units classify dwellings only according to the materials used in constructing the walls and roof. Thus, permanent dwellings are constructed of materials such as cement or brick, semi-permanent dwellings include a mixture of permanent materials and less durable materials such as corrugated iron and woven bamboo, and temporary dwellings are comprised entirely of traditional materials. A more meaningful measure of the quality of housing in Malaysia is the census report on the external structural condition of housing, which lists 93% of all housing units as "sound." Although this obviously reflects a judgement, the overall finding is that housing quality in Malaysia is high.

Table 2.3: Permanency of Housing, 1980

	Temporary	Permanent	Semi-permanent
All Malaysia			
Urban	48%	44%	9%
Rural	11%	64%	25%

Source: 1980 Census, p. 52.

C. Affordability of Housing

2.8 Although available data on housing transactions are not classified by income groups, it is possible to make some tentative judgments about housing affordability, based on the changing relationship between housing prices and income. As the Malaysian economy responded to external stimuli and grew strongly from the mid-1970s, housing prices rose rapidly. From 1976 until the trend flattened out in 1982, the reported selling price of a single-story terrace house increased by an average of 18.6% p.a. During the same period, household income rose by 10.8% p.a., indicating a general decline in the ability of households to purchase the most typical new unit on the market. According to the same measure, housing prices stayed almost constant from 1982 to 1984, then fell by about 20% from the peak. Incomes continued to rise after housing prices had peaked, and the eventual fall in incomes appears to have been smaller than the decrease in housing prices.

2.9 Table 2.4 and Figure 2.1 illustrate the trend in affordability between 1976 and 1986, using data on average house prices appearing in the Ministry of Finance's Property Market Reports. Assuming commonly available financing terms, the average house bought or sold in 1976 was affordable only to households at the 88th percentile of the income distribution who devoted one quarter of their income to mortgage payments. This level remained approximately the same until 1980 when housing prices rose rapidly and only the 90th percentile and above could afford the average house under these assumptions, approximately the level where it has remained since. A house costing 30% below the average was affordable to the 85th percentile, rising to the 88th in 1981. A lower-priced formal housing unit, assumed to cost 50% of an average-priced unit, would have been affordable at the 68th percentile in 1976, but would have been affordable only to the 85th percentile during the housing price peak of 1981-83, and to the 81st percentile in 1986. By any standard, this is very expensive housing for the relative income group. While income distribution during this period may have changed, it is unlikely that any such change would have been large enough to alter this overall conclusion.

2.10 The above examples assume a mortgage for 90% of the value of the unit, with the household spending 25% of total income on mortgage payments. In reality, many households exceed the 25% norm, especially those purchasing new housing for the first time. If it is assumed that 35% of income is spent on housing, the average unit would have been affordable at the 87th percentile in 1986 and the low-cost unit at the 60th percentile. Where family resources are available to make a larger downpayment, the loan amount would be lower, making the monthly payments more feasible in terms of cash flow.

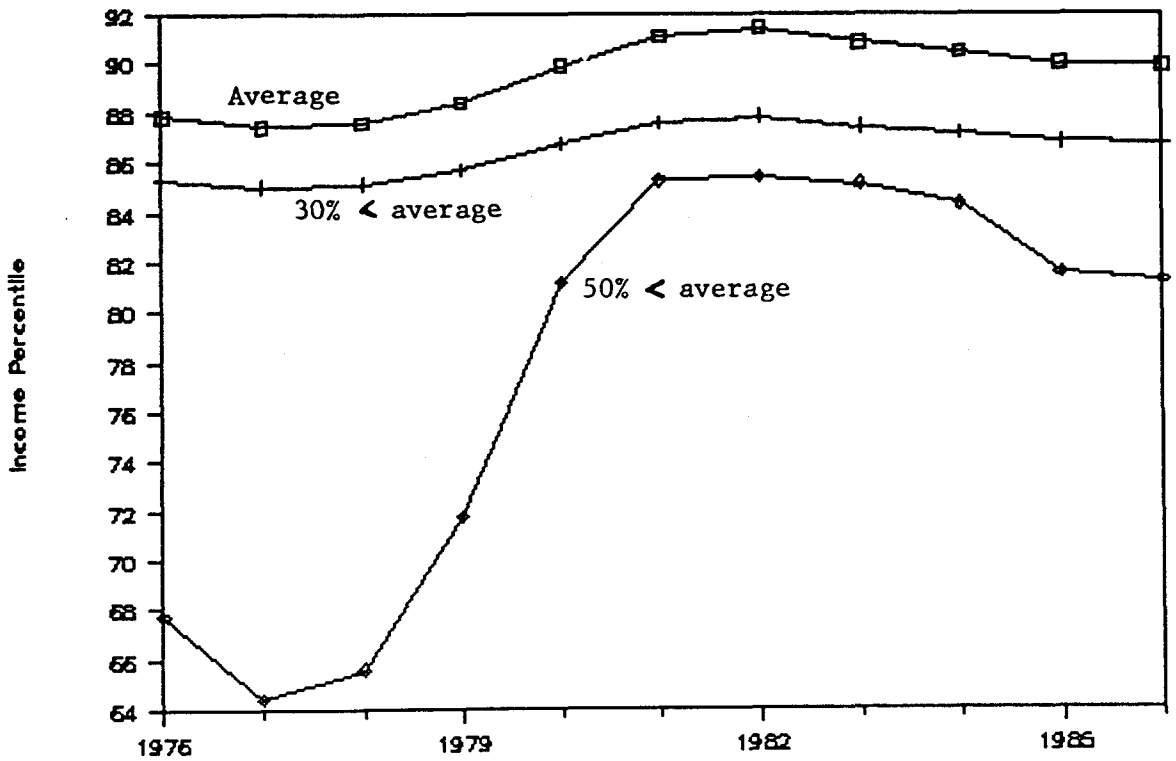
2.11 The price of home ownership is not necessarily the price of housing. Many families rent, which costs much less. Nationwide, some 48% of all households are renters. This is based on the 1980 census which reports that 57% of urban housing units are owner-occupied, adjusted by the supply ratio which indicates the existence of 10% more households than units (para. 2.3). The proportion of renters differs, however, depending on the area. The seven more rural states had owner-occupancy levels of nearly 80% in 1980, while the Federal Territory, which is largely urban, had less than 50% owner-occupancy or (adjusting for the supply ratio) 55% tenants.

Table 2.4: Historical Affordability of Housing

Year	Annual Household Income	Average House Price	Affordable at (percentile)	-30% below Average House Price	Affordable at (percentile)	-50% below Average House Price	Affordable at (percentile)
1976	$5,941	$28,800	88	$20,160	85	$14,400	68
1977	$6,627	$30,500	87	$21,350	85	$15,250	64
1978	$7,538	$35,300	88	$24,710	85	$17,650	66
1979	$8,421	$43,400	88	$30,380	86	$21,700	72
1980	$9,888	$59,600	90	$41,720	87	$29,800	81
1981	$10,966	$73,500	91	$51,450	88	$36,750	85
1982	$11,619	$80,200	91	$56,140	88	$40,100	85
1983	$12,282	$80,700	91	$56,490	87	$40,350	85
1984	$13,179	$83,700	90	$58,590	87	$41,850	84
1985	$13,106	$79,600	90	$55,720	87	$39,800	82
1986	$11,587	$70,000	90	$49,000	87	$35,000	81

Sources: Ministry of Finance, Ministry of Housing and Local Government.
Notes: Affordability is determined by assuming 25% of household income devoted to making level payments on a 25 year, 10% mortgage for 90% of unit value (LTV)
Housing price is for single story terrace house in a sample of cities.
Household income is private consumption per household based on national income accounts.

Figure 2.1: Housing Affordability by Income Percentile



2.12 In addition, an unknown number of squatters cannot afford formal sector housing and have therefore turned to informal arrangements. While no reliable data are available on this segment of the population, their numbers seem to be growing, as indicated by expanding communities of squatters in many urban areas and the informal reports of local authorities that as much as a fifth of all housing is being constructed by squatters.

2.13 In summary, housing conditions in Malaysia have been directly influenced by the strong overall economic performance of the past decade. The boom, caused in part by the rising value of the country's exports, stimulated demand for housing both by inducing urbanization and by offering a refuge for investors. But since even the least expensive formal sector units are not affordable by the lower-income groups, the latter are increasingly turning to the informal sector to meet their housing needs. The problem, then, is apparently not that there is an absolute shortage of housing, but that the mix or distribution of new housing prevents wide-scale ownership in the urban areas.

D. Government Housing Sector Objectives and Programs

Objectives

2.14 The Government of Malaysia has affirmed that it has a basic responsibility to ensure "that all Malaysians, particularly the low-income group, have access to adequate shelter and related facilities."[1/] Government objectives for the sector on the macroeconomic level are to stimulate overall economic activity by encouraging housing investment and, on the microeconomic level, to improve the efficiency and equity of the current housing delivery system. Toward these objectives the Government has adopted policies and programs which are intended to make housing more available to lower-income groups, and particularly to the Bumiputra, to make housing finance readily available to certain segments of the population, and to set land-use, planning and infrastructure standards to ensure housing adequacy.

2.15 Regarding the Government's physical objectives for the sector under its five-year development plans, Table 2.5 summarizes past performance under the Fourth Plan (1981-85) and targets for the Fifth Plan (1986-90), and Table 2.6 presents the Federal Government's development budget for public housing programs under both Plans. While the categories in these tables do not correspond exactly, the tables nevertheless illustrate the same general trend: a reduction in the public sector's role in the direct production of housing units and increasing reliance on the private sector.

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1. Government of Malaysia, Fifth Malaysia Plan 1986-1990, p. 521.

Table 2.5: Housing Targets and Performance by Program

	Fourth Plan 1981-1985			Fifth Plan 1986-1990		
	Target	Actual	Pct of Target	Target	Actual	Pct of Target c/
Public Sector (Including Public-Private Joint Programs)						
Special Low Cost Housing Program				240000	8005	3%
Public Low Cost Housing Program	176500	72308	41%	67193	6593	10%
KL City Hall Program						
Regional Development Authorities	110010	36112	33%	57500	13682	24%
Staff Institutional Housing	58500	23258	40%	27000	2105	8%
Housing by Commercial Agencies	53560	58373	109%	18700	10610	57%
Subtotal: Public Sector	398570	190051	48%	410393	40995	10%
Private Sector						
Private Developer Housing	349470	101799	29%	540000	23054	4%
Cooperative Housing	25260	5414	21%	12500	938	8%
Individual Housing a/	150000	94660	63%	n.a.	n.a.	
Informal Housing	n.a.	unknown		n.a.	unknown	
Subtotal: Private Sector b/	524730	201873	38%	552500	23992	4%
Total: b/	923300	391924	42%	962893	64987	7%

Notes: a/ Targets for Individual Housing not yet available for Fifth Plan.
b/ Subtotal and total do not include informal sector.
c/ As of January 1988.

Table 2.6: Public Development Budget for Housing Programs a/
(M$ million)

Program	Fourth Plan Allocation 1981-85	Estimated Expenditure 1981-85	Fifth Plan Allocation 1986-90
Public low-cost housing	1,712.22	1,659.06	691.79
Sites and services	1.61	1.21	78.41
Government quarters	89.29	44.47	56.62
Squatter control	3.36	3.36	17.00
SEDCs and UDA b/	45.38	45.38	142.71
Total	1,851.86	1,753.48	986.53

a/ Institutional quarters and housing in land development schemes are not included in table as they are provided directly to the respective agencies.

b/ SEDC - State Economic Development Corporations;
UDA - Urban Development Authority.

Source: Fifth Malaysian Plan 1986-90, p. 530.

Public Sector Housing Programs

2.16 The Government currently oversees five major housing programs as follows.

2.17 The Public Low Cost Housing Program (PLCHP). The PLCHP was the centerpiece housing program during the Fourth Plan. It is now winding down from a target of 176,500 units during the Fourth Plan (19% of planned formal output) to just over 67,000 units during the Fifth Plan. This still represents 7% of total planned output and perhaps a higher share of scarce government administrative skills and resources. Most PLCHP units have been produced for sale,[2/] but some units are initially leased to tenants, who have an option to buy after 10 years.[3/] The units are developed and built directly by the states, although design and construction are normally privately tendered. Units are usually of a moderately high physical standard, on the order of 70 sq.m. The maximum sales price is M$25,000, except in Kuala Lumpur where it is higher.

2.18 The Federal Government develops overall guidelines for the program and provides financing to the states at 4% interest. The states relend these funds to purchasers, typically at a fixed rate of 5.5% for 25 years with a 2-year grace period. The maximum loan size per individual is M$25,000. The loan-to-value (LTV) ratio can be up to 100%. Each state sets ethnic quotas by location. Other eligibility criteria are normally that beneficiaries currently reside in the state, and that family income be less than M$750 per month. (At current terms, this implies a typical debt-service-to-income ratio of 20%.) There is no statutory minimum income, but in practice most states require at least M$350-400 per month (corresponding to a debt service ratio of about 40%).

2.19 To date, the PLCHP has not met its targets. During the Fourth Plan, actual production was only 41% of the target, and as of mid-1987, only 10% of the Fifth Plan target had been met due to higher housing prices and falling real incomes which seriously dampened demand for all types of new housing. Although PLCHP housing is heavily subsidized, it is still too expensive for a substantial share of the low-income population. Chapters 4 and 5 below examine aspects of the PLCHP program in some detail and suggest ways in which, by lowering costs, demand could be stimulated for such units.

2.20 The Special Low Cost Housing Program (SLCHP). The SLCHP was undertaken in 1986 in response to the cyclical downturn in Malaysia's economy and in the construction industry in particular. After having grown at an average annual rate of 9.7% between 1980 and 1984, value added in the construction sector fell by 8.4% in 1985 and by 14% in 1986. The SLCHP had two objectives: to increase the supply of low- and moderate-income housing, and to stimulate the economy with net additions to supply. The latter objective was the immediate impetus for the program, the combined direct and indirect effects of which were expected to raise the GNP growth rate by as much as 2% a year. Presuming that most or all of this

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2. "Sale" means that the structure is sold but the land is normally on a long-term lease for 33, 66 or 99 years.

3. Data on the proportion of sales versus long-term leases with options to purchase are not available. Decisions concerning the mix are left to the states.

housing would be incremental, that is, unlikely to be built in the absence of the program, the initial calculations of the potential stimulatory effect on the economy were not unreasonable. A similar program was instituted in Chile in response to deteriorating economic conditions in the early 1980s, and detailed calculations of the potential economic impact of the program on the macroeconomy were nearly identical to those estimated in Malaysia.

2.21 An innovative feature of the SLCHP is its reliance on private sector developers to produce most of the units. About 60% of the planned 80,000 units a year are to be built on state land provided for low-cost [4/] development to private sector developers. Forty percent (32,000) were to be built on private sector land; to improve the financial viability of using private land for such development, developers using this variant were to build 40% low-cost units, and 60% low-medium and medium-cost units (i.e., up to M$100,000). Since only low-cost units count towards the 80,000 goal, this implies 48,000 low-medium and medium-cost units in addition to the 80,000 low-cost. Higher profits on the more expensive units are used to cross-subsidize the low-cost units.

2.22 The main supply-side incentives in the program are reduced infrastructure standards and speedier approval for land conversions and other regulatory matters. Even before the SLCHP, private developers were generally required to build 30% of new units to sell as low-cost housing (i.e., below M$25,000). Bank Negara also requires financial institutions to allocate certain percentages of their portfolios for low-cost housing. While such incentives and regulations underline the Government's commitment to housing equity, there has never been extensive construction by force account or other measures to achieve compliance.

2.23 The actual progress of the SLCHP has been somewhat disappointing relative to expectations. Although 80,000 units were to be built during the first year of the program (July 1986-June 1987), as of the end of April 1988, only 15% (12,159 units) had been issued certificates of fitness, while another 9% (6,841 units) were completed and awaiting infrastructure, and 26% (20,685 units) more were at various stages of construction.

2.24 The most serious problems in implementing the SLCHP include lack of demand due to inappropriate pricing, poor choice of locations and designs by developers, and administrative constraints. Pricing has been a problem since the standard M$25,000 per house is too low to cover developers' costs in expensive areas like Kuala Lumpur, and too high to attract buyers in the more remote states where house prices are low. Problems with sites and designs have arisen because attempts by the private sector to create what is a fundamentally different product line of inexpensive houses have required experimentation in designs and site configurations that have not always been immediate market successes. The desire to reduce costs by choosing locations with cheap land prices has also frequently led to producing houses that are far from existing areas of work and services, and which, as a result, have not sold rapidly. The

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4. In this report, low-cost housing refers to that which meets guidelines of the PLCHP or the SLCHP. The physical design is typically a single-story terrace house of 40-45 sq.m., containing two bedrooms, a living area, a kitchen and a bathroom and toilet. The sales price of such units is usually M$25,000.

administrative constraints hampering program implementation reflect the problems posed by the Government's normal housing regulations and procedures which result in lengthy delays and high costs for developers. Implementation has been further hampered by the reluctance of local planning authorities to approve plans consistent with acceptable new, lower infrastructure standards included in the program.

2.25 Regional Development Authorities (RDAs). The RDAs focus mainly on rural development, for example, by developing new agricultural land. Programs involve two federal agencies, the Federal Land Development Authority and the Federal Land Consolidation and Rehabilitation Authority (within the Ministry of Land and Regional Development), as well as executing agencies of the state governments. Houses are constructed for participants as part of these programs.

2.26 Staff Institutional Housing (SIH). This is housing built for police, customs officials, the military, and other public safety personnel whose duties require that they reside in particular locations and/or who may be frequently relocated. Responsibility for these programs rests with the line agencies involved, although public works departments may provide design standards. Actual construction is normally contracted out.

2.27 Housing by Commercial Agencies (HCA). This is housing built by State Economic Development Corporations (SEDCs) as part of their Integrated Area Development and other industrial and commercial development schemes. SEDCs are quasi-public corporations which operate somewhat like private commercial developers.

2.28 The RDA, SIH and HCA programs are not discussed further in this report since, unlike the PLCHP and SLCHP, they have no explicit housing policy or macroeconomic goals. These programs, however, are not trivial. Housing construction under the three programs comprised half of the targeted Fourth Plan public sector output, and 60% of actual output. Their share increases to about 60% of planned public output in the Fifth Plan, and represents 80% of actual production to date, although in the context of declining direct public construction overall. If more comprehensive studies of the sector are undertaken in the future, RDA, SIH and HCA merit inclusion.

E. Financial Intermediation in the Housing Sector

Growth of Mortgage Lending

2.29 Growth of financial intermediation in the Malaysian housing sector has been extremely rapid, involving a variety of institutions. Table 2.7 indicates the principal types of institutions involved in housing sector lending and the total loan amounts outstanding for each category since 1980. The two building societies, the Malaysia Building Society Berhad (MBSB) and the Borneo Building Society Berhad (BBSB) established in 1950 and 1958, respectively, were the first institutions to begin major lending for housing. Growth in lending by the two housing credit institutions has been steady, at a compound rate in excess of 12% per year in nominal terms and about 7% in real terms. Despite this growth, however, lending by commercial banks, finance companies, and the Government has come to overshadow the lending activities of the housing credit institutions.

Lending by commercial banks and the Government was nonexistent before the mid-1970s, but by 1986 comprised about 39% and 38%, respectively, of all outstanding loans for housing. Lending by housing cooperatives and other institutions (e.g., rural credit cooperative societies) has never played a major role relative to that of other housing finance intermediaries.

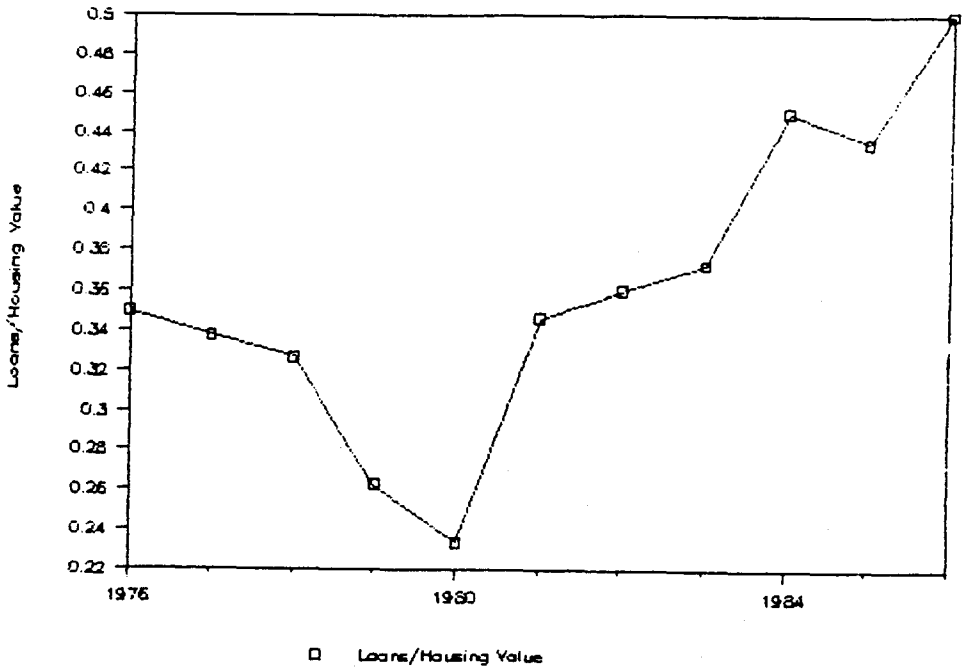
2.30 The rapid growth in lending for housing, at a compound annual rate for all housing lenders of 22% since 1960, represents not only a major source of resource mobilization within the Malaysian economy, but also a major component of the portfolios of Malaysian financial institutions. On an annual basis, net new lending for housing was equal to 2.6% of GNP in 1986, while outstanding mortgage debt was equal to about 27% of GNP. In 1987, housing loans represented 14% and 16% of the outstanding portfolios of commercial banks and finance companies, respectively, compared to less than 10% for each institution during the early 1970s.

Table 2.7: Outstanding Housing Loans
(M$ Million)

	Commercial Banks	Finance Companies	Building Societies	Treasury Loan Division	Total
1980	$2,233 45%	$620 13%	$986 20%	$1,103 22%	$4,941 100%
1981	$2,811 40%	$833 12%	$1,214 17%	$2,093 30%	$6,952 100%
1982	$3,498 37%	$1,085 12%	$1,450 15%	$3,359 36%	$9,391 100%
1983	$4,158 37%	$1,283 11%	$1,597 14%	$4,230 38%	$11,267 100%
1984	$5,130 37%	$1,543 11%	$1,741 13%	$5,313 39%	$13,726 100%
1985	$6,306 38%	$1,829 11%	$1,906 12%	$6,423 39%	$16,464 100%
Ann. Growth Rate:	23.1%	24.2%	14.1%	42.2%	27.2%

2.31 Growth in lending for housing has paralleled the rapid growth in the level of overall housing investment. Figure 2.2 illustrates the way in which annual new lending for housing has varied in relation to the estimated value of new housing built between 1976 and 1986. On average, each year's incremental loans have been about 36% of the estimated value of newly built housing, with a low of about 25% during 1979 and 1980, when housing prices were increasing dramatically, and a high of 50% in 1986, when prices had fallen significantly.

Figure 2.2: Housing Loans Relative to Value of New Housing



Housing Finance Policies

2.32 Implications for Financial Intermediaries. Malaysia's housing finance industry has to some degree suffered from certain government policy interventions in the sector. Initially, these policies seem to have had little real effect on portfolio decisions. In 1968, for example, the Government sought to promote lending for housing by requiring all commercial banks to invest a minimum of 50% of their savings deposits in the form of either longer-term government securities or housing loans. The regulation had no distorting effect on the banks' portfolios, however, since it was introduced shortly before the initial boom in housing prices and housing construction of the early 1970s when the commercial banks needed little additional incentive to expand that portion of their portfolios.

2.33 Other subsequent government restrictions have not been so benign, particularly those on the maximum rate of interest that can be charged on certain types of mortgage loans. Government assists buyers of lower to medium priced homes by placing an interest rate ceiling of 9.5% on the financing of units costing less than M$60,000, and 11% for units costing M$60,000 to M$100,000. Although interest rates on these loans are variable, adjustments are infrequent. In late 1987, when market rates for loans above the ceiling were 13% to 15%, the spread between uncontrolled interest rates for large mortgages and the lower rates for directed loans was 3-5%. Since housing finance institutions are often forced to borrow short and lend long, the controlled rates could jeopardize their financial strength if inflation (and the cost of bank borrowings) were to increase. To protect themselves from such risk, the banks have sometimes had to limit their lending for housing. In the late 1970s and early 1980s, for example, when housing prices were increasing most rapidly, the government-imposed

lending restrictions appear to have been a constraint on financial intermediaries, whose marginal borrowing costs during those years sometimes exceeded the stipulated maximum lending rates. The banks consequently limited their housing lending and, as illustrated in Figure 2.2, new housing loans lagged severely behind growth in the value of new housing in 1979 and 1980, the years of accelerating inflation and higher than average nominal interest rates. Funds are thus rationed by quantity, not by price.

2.34 At the same time, a number of recent policy developments in housing finance have been commendable. One has been the introduction of adjustable rate mortgage instruments, which provide lenders with a way of reducing interest rate risk and with the ability to continue to make mortgage loans during periods of higher than average inflation. An optional graduated payment mortgage was also introduced in connection with SLCHP; this enables borrowers to make smaller loan repayments early in the life of a mortgage and to make increasing payments over time as their incomes and repayment abilities presumably increase. These and similar lending instruments are preferable ways for ensuring that low-income families have access to housing finance than the interest rate restrictions still imposed.

2.35 Another improvement has been the establishment in 1986 of a secondary mortgage market institution, Cagamas Berhad, which provides a market in which primary lenders for housing can securitize their mortgage holdings so that they can be resold to other investors--such as other parts of the banking system, trust funds, insurance companies, and the general public. In so doing, primary housing lenders are able to sell some of their interest rate and liquidity risks to other investors, and thus to continue to make end-financing available to housing purchasers. The Cagamas Berhad was established with an initial capital authorization of M$200 million, of which M$50 million was to be paid in.[5/] Shareholders of the institution include the Central Bank, commercial banks, finance companies, and merchant banks. The chairman is the Governor of the Central Bank.

2.36 The housing finance sector is thus in a good position to continue its recent rapid development, assuming that its financial viability is protected from the interest rate restrictions which in other countries have led to rapid decapitalization and financial collapse whenever inflation is high. It is therefore recommended that the existing interest rate restrictions be curtailed and that equity objectives of the Government be achieved through policy reforms discussed later in this report.

2.37 Housing Finance Subsidies. Commercial lending institutions bear the cost of housing finance subsidies provided through the Government's directed credit policies and the SLCHP, while the Government bears the cost of housing finance subsidies provided under the PLCHP and the Treasury Loan Program for government employees. Table 2.8 shows the current terms of these programs as well as the subsidies involved, by loan type and in aggregate.

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5. Cagamas made its first purchase of housing loans in October 1987 from three commercial banks, and at the same time placed a corresponding amount (M$110 million) in bonds in the money market. The Cagamas issues are attractive since the institution that sells the mortgages to Cagamas continues to bear responsibility for loan administration of the original mortgages and is obligated to reimburse Cagamas should loans become non-performing.

Table 2.8: Present Value of Selected Government Housing Loan Programs

I. REPRESENTATIVE LOANS

Loan Type	Current Terms of Representative Loan: Loan Amount	Current Rate	Loan Term	Grace Period	Financial Subsidy a/ If Lending Rate Unchanged And Marginal Cost of Funds is: 4 Percent	6 Percent	8 Percent	Market Value of Subsidy:b/ If Market Rate is: 8.5 Percent	9.5 Percent	11.5 Percent	Financial Subsidy as % of Loan @ 6.0 Percent	Market Valued Subsidy as % of Loan @ 9.5 Percent
Treasury A	$150,000	4.0%	25	0	($0)	$27,257	$47,503	$51,733	$59,382	$71,999	18%	40%
Treasury B	$70,000	4.0%	25	0	($0)	$12,720	$22,168	$24,142	$27,712	$33,599	18%	40%
Treasury C	$70,000	4.0%	25	0	($0)	$12,720	$22,168	$24,142	$27,712	$33,599	18%	40%
Treasury D	$30,000	4.0%	25	0	($0)	$5,451	$9,501	$10,347	$11,876	$14,400	18%	40%
PLCHP	$25,000	5.5%	25	2	($1,672)	$3,738	$7,735	$8,567	$10,067	$12,529	15%	40%
SLCHP	$25,000	8.8%	25	0	($13,958)	($6,879)	($1,621)	($522)	$1,465	$4,741	(28%)	6%
Directed Cdt	$60,000	8.8%	20	0	($27,741)	($14,051)	($3,387)	($1,096)	$3,106	$10,225	(23%)	5%

II. ESTIMATED AGGREGATE SUBSIDIES for 1987 (valued at market prices)

Program	Share Of Loans	Aggregate Loans Per Annum (Est.)	Market-valued Subsidy Per Unit	Aggregate Subsidy	Percent of All Subsidies
Treasury A	12%	$133 million	40%	$52 million	10%
Treasury B	8%	$88 million	40%	$35 million	6%
Treasury C	50%	$553 million	40%	$219 million	41%
Treasury D	30%	$332 million	40%	$131 million	24%
SUBTOTAL:	100%	$1,105 million		$437 million	81%
PLCHP		$100 million	40%	$40 million	7%
SLCHP		$200 million	6%	$12 million	2%
Directed Credit		$1,000 million	5%	$52 million	10%
TOTAL:		$2,405 million		$541 million	100%

Note: numbers in parenthesis are negative values.

a/ Financial subsidies are calculated as the present value of the difference between the lending rate under the various programs and the Government's marginal cost of funds. In this table the marginal cost of funds are assumed to be 4%, 6% and 8%. In practice, the funds raised have a variety of maturities and terms. In addition to the direct transfers to the TLP from the Federal budget and repayments, which should be valued at the Treasury's marginal cost of funds (presently 4-5%), the TLP has borrowed from the Employee's Provident Fund (EPF) at 8.5% interest and from commercial banks at somewhat higher rates. In 1988 CAGAMAS purchased M$750 million of TLP loans at a cost equivalent to 6% p.a.

b/ The market value of subsidies to the borrower are measured by the difference between the lending rate under the specific program and the market rate of interest for similar loans. The market rate measures the rate at which the Government could have lent the funds, i.e. the opportunity cost of the resources used in the program. This is how economists define subsidies, although estimating financial subsidies is also an important exercise.

2.38 Loans provided under directed credit arrangements carry subsidies of about 5%. Since loans totaling about M$1 billion are annually extended under directed credit arrangements, the related subsidies total about M$52 million annually and represent about 10% of all housing credit subsidies provided each year. SLCHP loans currently have a term of 25 years, with no grace period and an interest rate of 8.8%, indicating a subsidy rate of about 6%. Total annual SLCHP loans are estimated at M$200 million, including a subsidy element of M$12 million or 2% of annual housing credit subsidies. PLCHP loans have far more generous terms of 25 years, a two-year grace period and an interest rate of 5.5%. While the subsidy on individual PLCHP loans is very high, at about 40% of face value, they are not regarded as a major drain since the program is relatively small, at about M$100 million a year, the loans for M$25,000 are much smaller than those for all other programs except the SLCHP (which also offers loans for M$25,000) and the program itself is in its last stages.

2.39 The Treasury Loan Program (TLP). The TLP provides housing loans to civil servants at below-market rates. Like such schemes in a number of countries, the TLP is considered part of compensation for government service, and not primarily as housing policy per se. The TLP began in the early 1970s as a replacement for the former practice of directly providing government housing to civil servants at no (or low) cost. It was introduced during a period when government wages and salaries were not keeping pace with private sector compensation. Some private sector companies also use below-market-rate mortgage schemes to compensate staff since such schemes reduce the income tax burden on employees (below-market financing is not taxed) and help retain valued personnel.

2.40 Unlike the PLCHP and SLCHP mortgage subsidy programs discussed above, the target recipients of TLP loans are middle class, although within the civil service staff all levels participate, and as Table 2.8 shows, about 80% of the loans (and 65% of subsidies) are for category C and D staff who are paid the lowest salaries. Of the roughly one million civil servants, military and police potentially eligible for such loans, about 25% have received them.

2.41 The TLP expanded rapidly through the early 1980s and, as shown in Table 2.9, in some recent years has represented as much as half of the total formal housing finance available. Thus, while primarily a compensation policy, it is also an important share of formal housing finance. Maximum loan amounts under the program vary with the civil service rank of the recipient. Loans are made for 25 years at an annual interest rate of 4%; the rate is adjustable at the Treasury's option. Until recently, the interest rate structure was progressive; larger loans were made at 6% while loans for M$30,000 and M$70,000 had an interest rate of 4%. Current TLP contracts specify that interest rates are variable, and when (as last year) terms are changed, they are applied to pre-existing loans as well as new loans. However the one attempt at increasing the interest rate was short lived and was rolled back to previous levels within little more than a year. This has important implications for the government budget. If the Government's marginal cost of funds rises, there is a potentially large contingent liability if the higher costs are not quickly and fully passed on to the final borrowers.

Table 2.9: Comparison of Treasury Housing Loans and Total Housing Finance
(M$ '000)

Year	Treasury Loans Net	Treasury Loans Cumulative	Total Housing Finance Net	Total Housing Finance Cumulative	TLP as Net % of Total Housing Finance a/
1980		1,103		4,941	-
1981	990	2,093	2,011	6,952	49
1982	1,266	3,359	2,440	9,391	52
1983	871	4,230	1,876	11,267	46
1984	1,083	5,313	2,459	13,726	44
1985	1,110	6,423	2,739	16,464	41

a/ Net is approximate; no account is taken of repayments (few if any loans have been repaid).
Source: J. Mohamed, Country Report of Malaysia (17th IUBSSA Conference, 1986), p. 5.

2.42 Table 2.8 presents estimates of the financial cost to the Government of subsidies provided under the TLP and the market value of the subsidies under alternative assumptions about interest rates. Assuming a marginal financial cost of funds to the Government of 6% and an opportunity cost of capital of 9.5%, on average, the loans contain a financial subsidy element of 18% and a market valued "economic" subsidy of 40% of the loan amount. With TLP lending at about M$1 billion a year, the average market-valued subsidy is over M$400 million a year. The corresponding financial cost to the Government of the subsidies involved (18%) total about M$200 million per year. The subsidy does not appear explicitly in the government budget. Every time another Treasury loan is made, the Government must take on additional debt (or in surplus years fail to retire an equivalent amount of debt). Thus, the subsidies vary with the Government's marginal cost of funds and the opportunity cost of capital as long as the loans remain on the books.

2.43 Given the depth of the subsidy accorded TLP borrowers, it is not surprising that the analysis shows that the program may have contributed significantly to upward pressure on housing prices. This pressure is likely to have been most acute during 1981 and 1982, the years when the volume of lending expanded most rapidly, and the years when the price of newly built housing increased by 23% and 9%, respectively, compared to consumer price increases of only 10% and 6%. Although efforts have been made in the last few years to direct the TLP to lower-income civil servants and to increase interest rates under the loans, additional changes based on the housing sector impact of the TLP are worth further study. Perhaps the most politically feasible reform to the TLP would be to further reduce the risk of providing uncontrolled subsidies by making the interest rate adjustment automatic[6/], instead of an option which may be exercised by the Government.

6. A convenient formula might be to fix the rate in reference to the BLR.

3. THE HOUSING MARKET

A. Introduction

3.1 The Malaysian housing market seems to be operating satisfactorily. The supply ratio has increased to an estimated 90% (para. 2.4), and the quality of shelter is good (paras. 2.7-2.8). Although the cost of purchasing a new house is relatively high and affordability seems to be an issue, rental housing is widely available and the government has intervened in an attempt to make the purchase of a new house affordable to the lower-income population through special subsidized housing development and finance programs. How well these programs (and the policies they reflect) perform will partly depend on how well they were formulated. The key questions are (a) did the Government adequately understand the housing market and the fundamental problems limiting home ownership when it devised it policies and programs to expand low-cost housing and (b) did its policies and programs address those problems or did they respond to peripheral factors that superficially seemed to limit the production of low-cost housing? This chapter attempts to answer these questions by reexamining the data sources on which policy inferences were drawn in the past. In particular, it revisits the supposed decline in housing production in the early 1980s which prompted the use of housing as a countercyclical instrument of demand management. In addition the chapter looks at reestimates of housing investment data to ascertain the sector's contribution to economywide performance and national housing objectives. In view of the findings of this analysis, that investment levels have been quite high while quantitative output has been somewhat low in comparison to countries at a similar stage of development to Malaysia's the chapter continues by examining the factors which seem to have directly contributed to the rapid increase in housing prices (and thus the inability of large segments of the population to afford new housing),, and highlights areas for possible reform.

B. Housing Production and Investment Levels

Housing Production

3.2 Government statistics on housing completions during the Third and Fourth Malaysia Plans (1976-80 and 1981-85, respectively) suggest that the number of housing units completed during the Third Plan was 484,190, of which 121,510 (25%) were built under the auspices of the public sector, and 362,680 (75%) were built by the private sector.[1/] During the Fourth Plan, an estimated 391,924 units were built, of which 190,051 (48%) were publicly sponsored and 201,873 (52%) were privately built. These figures suggest that housing

1. The division between private and public sector is defined on the basis of the agency responsible for undertaking the production, but not necessarily the financing, of housing. Among the public housing programs included here are the PLCHP, various programs of federal agencies and regional development authorities, institutional quarters of the Public Works Department and other departments, housing provided by the Aborigines Department and the Sabah and Sarawak Development Boards, and housing provided by the State Economic Development Corporations, the Government Officers' Housing Company, and other minor housing programs.

3.3 A closer examination of the official figures reveals, however, that the data provided for the two plan periods are not comparable and that the reported fall-off in production may not have occurred. In most reported statistics, completions during the Third Plan were based only on reported approved projects, with an assumption that approved units would be completed 18 months after project approval. In the Fourth Plan, "completions" were based only on those units reported by developers to have been completed. Because developers were under no obligation to report completions of approved projects, the latter procedure probably undercounts actual completions. Table 3.1 indicates that when a comparable method is used for calculating housing completions in the two periods, housing production during the Fourth Plan period is estimated to have increased by about one tenth over the level of the Third Plan period (to 536,927 units).

Table 3.1: Housing Completions 1976-86

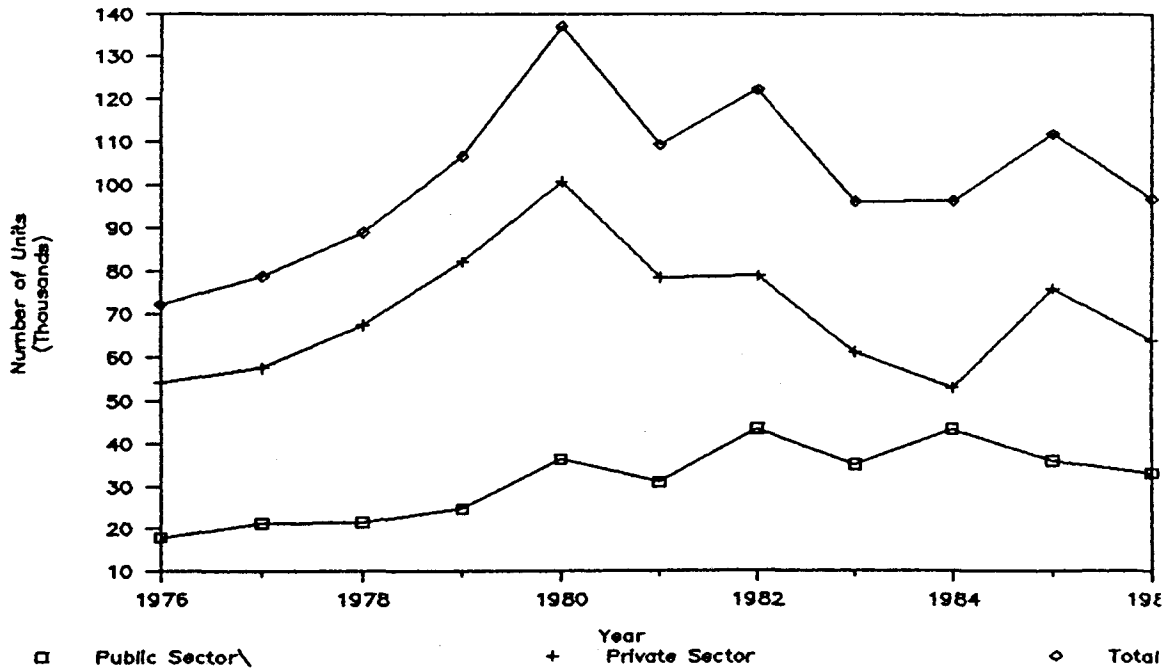
Date	Public Sector	Annual Chg(%)	Private Sector	Annual Chg(%)	TOTAL	Annual Chg(%)	Private Share(%)
Third Plan							
1976	17,801		54,362		72,163		75.3%
1977	21,230	19.3%	57,604	6.0%	78,834	9.2%	73.1%
1978	21,460	1.1%	67,574	17.3%	89,034	12.9%	75.9%
1979	24,655	14.9%	82,181	21.6%	106,836	20.0%	76.9%
1980	36,364	47.5%	100,959	22.8%	137,323	28.5%	73.5%
Subtotal	121,510		362,680		484,190		74.9%
Fourth Plan							
1981	31,009	-14.7%	78,537	-22.2%	109,546	-20.2%	71.7%
1982	43,474	40.2%	78,925	0.5%	122,399	11.7%	64.5%
1983	35,056	-19.4%	61,300	-22.3%	96,356	-21.3%	63.6%
1984	43,482	24.0%	53,064	-13.4%	96,546	0.2%	55.0%
1985	36,030	-17.1%	76,050	43.3%	112,080	16.1%	67.9%
Subtotal	189,051		347,876		536,927		64.8%
Fifth Plan							
1986	32,990	-8.4%	63,974	-15.9%	96,964	-13.5%	66.0%

Notes to the table:
Private sector completions are based on approved plans for private developers, and assumes that approved units are completed in 18 months (until June 1982) and in 24 months thereafter.
Source:Ministry of Housing and Local Development.

3.4 Production under the Fourth Plan has been re-estimated, using approved units as the basis for calculating completions. For the first two years of the of the Fourth Plan period, the assumed completion time is 18 months -- the same period used in calculating Third Plan housing completions; from 1983 to 1985, the assumed completion time is 24 months to reflect the construction slow-down that occurred during this period. Because approved units may not always have been completed, the recalculated figures may be somewhat overestimated and therefore should be viewed as only indicative. This is particularly true for 1985-86 when it is generally believed that construction sector activity turned sharply downward, while the re-estimate shows increased or steady production. It is nevertheless likely that the fall-off of housing output during the Fourth Plan, as shown in the official figures, is at least overestimated and very possibly did not occur at all. The uncertainty in assessing production indicates the need for greater consistency and an improved methodology in calculating housing completions and compiling sectoral data.

3.5 As indicated in both the official and unofficial statistics and illustrated in Figure 3.1, the share of public sector housing production has been increasing during the last decade. The largest share of this increase has been in the production of low-cost public housing, which increased from about 26,000 units during the Third Plan to over 72,000 units during the Fourth Plan; the other major area of increased public production has been in "medium- and high-cost" housing, a mix of government officers' housing, housing provided by State Economic Development Corporations, and other programs which, together, expanded from about 38,000 units in the Third Plan to above 58,000 units in the Fourth Plan.

Figure 3.1: Housing Completions 1976-86



3.6 In assessing the level of housing production, consideration should also be given to the considerable amount of informal sector housing built by individuals or small developers. The 1980 census reports that the number of housing units built in the five-year period between mid-1975 and mid-1980 was 798,000 or 65% above the reported Third Plan formal-sector production of 484,000 units. These figures suggest that for every ten units officially counted in housing production statistics, six units are not counted.[3/] It is presumed that many of these uncounted units are informal or possibly extra-legal units, although direct evidence of this is not readily available.

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3. The census methodology differs from the methodology used to calculate official production figures in that it uses information on the age distribution of units and on the total number of units observed in different census periods to estimate rates of demolition and replacement (see General Report of the Housing Census 1980, pp. 58). The official statistics reflect information furnished by developers and by localities which are involved in the formal process of application for approval of new housing projects.

Housing Investment

3.7 The level of housing investment in Malaysia may also be underestimated in the official figures. "Residential construction" is a line item in the national income accounts, and is calculated on the basis of the value of inputs to residential construction, such as labor, materials, and profits, without specific knowledge of either the number of housing units produced or of their unit value. However, the figures presented appear to be at variance with other evidence on the value of housing investment, which indicates a serious underestimation of the true economic importance of the sector. Table 3.2, Column 7 indicates the annual level of investment in residential construction as reported in the national income accounts, and Column 8 reports the value of residential construction as a percentage of GNP. Both figures appear low.[4/]

3.8 Two pieces of evidence raise questions about the reliability of these data. The first is a comparison of official data for Malaysia with data on housing investment in other countries at similar levels of economic development. The second is a comparison of the national income accounts data to a statistical series on housing investment that is calculated using information on housing completions in Malaysia and unit values of recently completed housing.

3.9 Figures 3.2 and 3.3 illustrate the way in which housing investment varies in relation to GDP per capita in countries at various levels of economic development. Such comparisons clearly depend on the adequacy of data used in constructing both national income accounts and housing investment statistics, and thus should be interpreted cautiously. As the figures indicate, the fraction of GDP that is invested in housing first rises with GDP per capita (to a per capita level of about US$8,000 in 1980 dollars) and thereafter falls. During the mid-1970s, for countries at Malaysia's level of GDP per capita, i.e., about US$1,200 (in 1980 dollars), the expected level of investment in housing relative to GDP (shown by the plotted curve) was about 3.6%, or from about 50% to 80% above the level of investment reported in Malaysia's national income accounts. By the early 1980s, at Malaysia's level of GDP per capita of about US$1,500, housing investment would have been expected to be about 3.5% of GDP, a level that is generally between 10% and 30% higher than the reported levels based on the national accounts data. A comparison of the official data for Malaysia with that for other Asian countries further suggests that the reported figures for Malaysia are on the low side. In 1976, for example, reported housing investment as a percentage of GNP was only 2.1% in Malaysia but 3.3% in Hong Kong, 3.6% in Korea and the Philippines, and 5.1% in Singapore. By 1981, Hong Kong invested 4.2% of GNP in housing, Korea 3.4%, the Philippines 4.0%, and Singapore 4.4%, all exceeding the reported figure for Malaysia of 3.2%.

3.10 The level of housing investment in Malaysia increases substantially when calculated on the basis of housing completions and their unit values. Column 1 of Table 3.2 gives the sale prices of new houses built between 1976

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4. Over the period indicated, the ratio of GNP to GDP was about 0.96. To convert estimated ratios of housing investment to GNP to ratios in terms of GDP, figures in columns 6 and 8 may be multiplied by 0.96.

and 1986, based on detailed Property Market Reports published by the Ministry of Finance.[5] When these figures are multiplied by the reported completions, as adjusted according to the procedure described in para. 3.4 and given in Column 2, the gross value of housing output is obtained.[6] This is shown in Column 3. As in the case of the national income accounts, the value of land has been netted out from the estimated value of housing output. Here it has been assumed, somewhat arbitrarily, that the cost of land comprises 40% of the value of completed housing. This figure is representative of Manila during roughly the same period, and may also be approximately correct for Kuala Lumpur and a few other cities; on average, however, the figure is likely to overstate the actual proportional contribution of land to total housing cost for most Malaysian cities and towns. It should also be recalled that the figures on housing completions on which these estimates are based consider only formal sector housing, and thus omit an estimated 35%-40% of all residential construction.

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5. The housing value series in Column 1 was constructed by taking an unweighted average of the sales prices of single-story terrace houses for a sample of 6 and later 12 cities and towns. Such houses are not only the most common type of house for which prices are reported, they are also consistently the least expensive type of housing for which prices are reported in the Property Market Reports. Constructing a weighted average was not possible as consistent data were not available on the proportional distribution of unit types. In any case, the method actually used gives a conservative estimate of new housing values since other types of units are on average more expensive than single-story terrace houses. It should also be noted that the figures reported for housing sales in the Property Market Reports are based on reported transactions of both new housing and resales.

6. In principle, estimates of GNP originating in the housing sector based on the official statistics, which value contemporaneous factor inputs to housing construction, and based on the procedure followed here, which reflects the value of contemporaneous sales net of land values, should on average produce similar results. When housing takes several years to complete, the value of housing investment estimated by the two methods will be identical if output levels are constant but will differ if output levels fluctuate. In periods of increasing construction, the value of construction inputs will exceed the value of sales; in periods of decreasing construction, the reverse will be true.

Table 3.2: Housing Values, Completed Units, and Value of Residential Output

Date	(1) Housing Value	(2) Housing Completionns	(3) Value of Output (billions))	(4) Value of Housing (billions)	(5) GNP (billions)	(6) Est.Housing Investment/ GNP(percent)	(7) Official Hsg Const (billions)	(8) Official HsgConst/GNP (percent)	(9) Official Hsg Inv Estimated Hsg In (percent)
1976	M $28,800	72,163	2.078	1.247	26.988	4.6%	0.563	2.1%	45%
1977	M $30,600	78,834	2.412	1.447	31.064	4.7%	0.803	2.6%	55%
1978	M $35,300	89,034	3.143	1.886	36.186	5.2%	0.808	2.2%	43%
1979	M $43,500	106,836	4.647	2.788	44.354	6.3%	0.948	2.1%	34%
1980	M $59,700	137,323	8.198	4.919	51.390	9.6%	NA	NA	NA
1981	M $73,600	109,546	8.063	4.838	55.602	8.7%	1.799	3.2%	37%
1982	M $80,300	122,399	9.829	5.897	59.690	9.9%	2.153	3.6%	37%
1983	M $80,800	96,356	7.786	4.671	65.154	7.2%	2.088	3.2%	45%
1984	M $83,800	96,546	8.091	4.854	74.182	6.5%	2.304	3.1%	47%
1985	M $79,700	112,080	8.933	5.360	72.039	7.4%	2.083	2.9%	39%
1986	M $70,100	96,964	6.797	4.078	66.364	6.1%	NA	NA	NA
								Average	42%

Notes to the table:

Col(1): Average values ofingle story terrace houses for a sample of cities.
Source: Ministry of Finance, Property Market Report, Volumes for 1980-1986.

Col(2):Public and private housing completions. Source:Ministry of Hog and Local Government

Col(3):Col(1) times Col(2); the value of housing completed.

Col(4):Value of output net of land, where land value is assd to be 40% of housing value.

Col(5):Sources:Ministry of Finance,Economic Report,1987/1988 and World Bank Malaysia: Industrializing a Primary Producer,Vol.2:Statistical Appendix.

Col(6):Col(4)/Col(5):estimated housing investment to GNP.

Col(7):Source:Department of Statistics,"Principal Statistics of Large Construction Establishments."

Col(8):Col(7)/Col(5):"Official" Housing Investment/Estimated Housing Investment.

Figure 3.2: Housing Investment and GDP (mid-1970s)

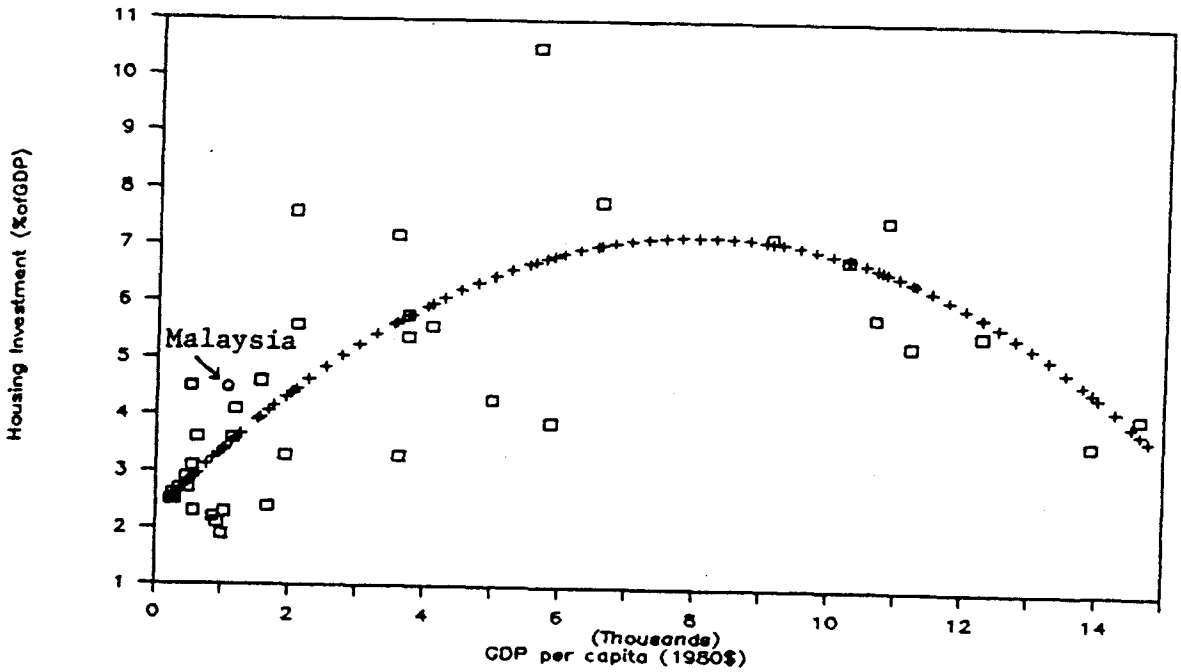
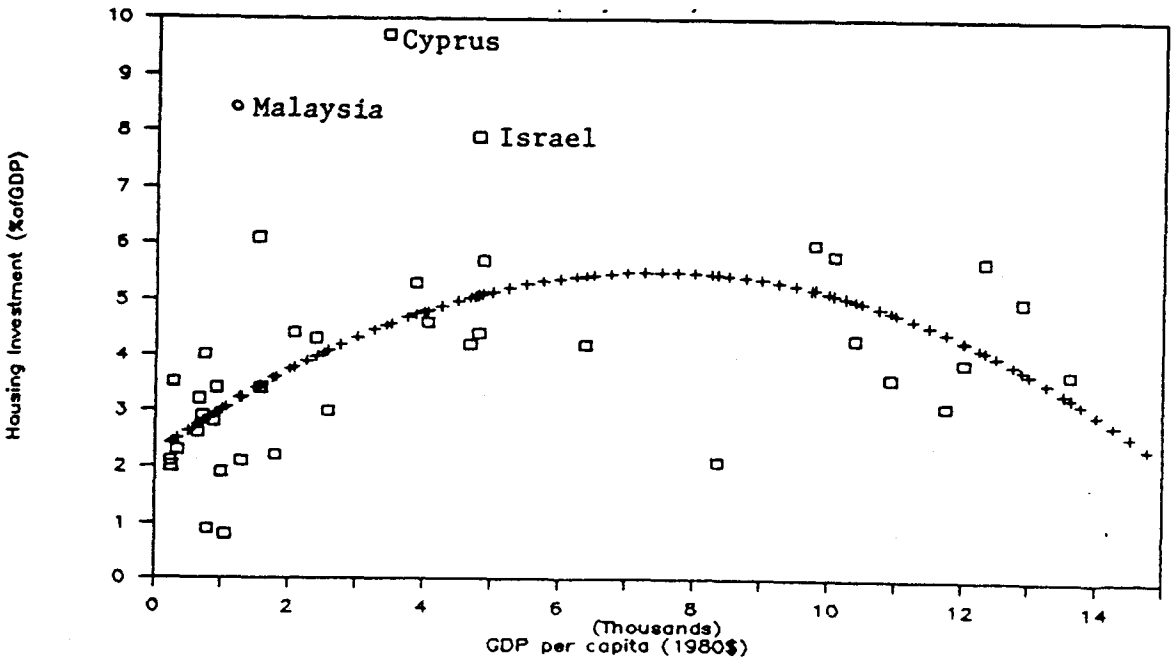


Figure 3.3: Housing Investment and GDP (early 1980s)



3.11 Adjusting the estimates of housing value of Column 3 for land costs, estimates of the value of housing investment are shown in Column 4. The fraction of GNP represented by housing is estimated in Column 6, which indicates that prior to 1980, 4.6% to 6.3% of GNP went to the housing sector. In 1980, housing investment jumped to 9.6%, and since that time has fluctuated between 9.9% (in 1982) and 6.1% (in 1986). With the exception of 1986, in no year since 1980 has housing's share of GNP been below the highest fractional level attained during the 1970s. In comparison, the average housing investment reflected in the national income accounts data (column 9) is only 42% of the estimates provided here.[7/]

3.12 A comparison of the revised investment figures with other countries' housing investment shares as shown in Figures 3.2 and 3.3 indicates that while Malaysia's level of investment in 1976 was relatively close to its predicted level, by 1981 housing investment was well above the level that would have been expected, considering its level of income. In fact, among the 39 countries evaluated, only one, Cyprus, appears to have invested a higher fraction of its GDP in housing in the early 1980s. Thus, Malaysia's level of housing investment relative to GNP has been consistently above the level that would have been predicted on the basis of international experience since the mid-1970s.

3.13 To a certain degree, such performance can be explained by two factors that would lead one to expect higher levels of housing investment for Malaysia than for other countries at similar income levels. The first is that incomes were growing considerably more rapidly in Malaysia than in most other countries during the time period in question, and, as experience has shown, investment in consumer durables such as housing is often highly income elastic, and can thus lead to rapid expansion in investment in the face of income change. The second is that the housing finance system in Malaysia is more highly developed than is that of most other countries at a similar level of economic development. Research has indicated that in countries with relatively greater levels of financial deepening, the fraction of GNP invested in housing is greater.[8/] Malaysia exhibits levels of financial depth, using conventional measures, that far exceed those of almost any other country at a similar level of overall development.[9/] Thus, it is not altogether unexpected that housing investment should exceed international norms.

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7. If it is assumed that the level of housing investment estimated here is approximately correct, and hence that the national income accounts data are underestimated, then it is proper to augment both GNP and gross fixed capital formation (GFCF) estimates in order to create a new base for comparing the housing investment figures. Based on the figures presented here, it appears that both GNP and GFCF might be underestimated by from four to five percentage points in a typical year. If each of these data series is adjusted to reflect possible underestimation, then the fraction of GNP invested in housing is estimated to have ranged from 4.46% in 1976 to a high of 9.28% in 1982, with an average from 1976 to 1986 of 6.63%. Relative to estimates of adjusted GFCF, housing investment would have ranged between roughly 25% and 45% of gross capital formation between 1976 and 1986.

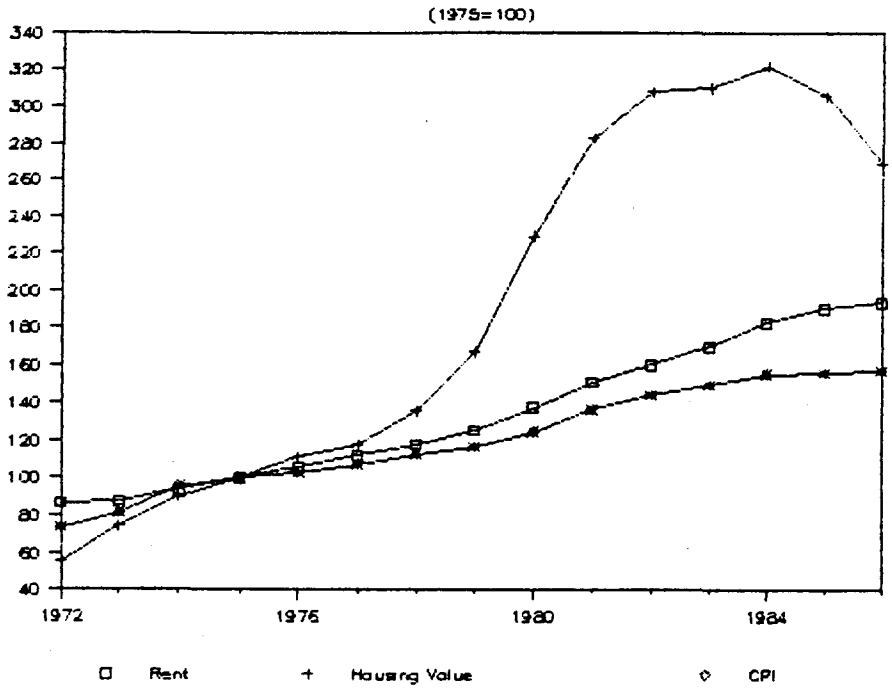
8. See Robert M. Buckley and Ranjana Madusudthan, "The Macroeconomics of Housing's Role in the Economy: An International Analysis." Paper presented to the American Real Estate and Urban Economics Association, December 1984.

9. See, for example, Bank Negara Malaysia, Money and Banking in Malaysia, 1984, p. 90 ff.

C. Housing Prices

3.14 While the level of housing investment undoubtedly reflects the increased housing output spurred by higher incomes and available financing, analysis indicates that the high level of investment may also reflect the high price of new housing. The rapid increase in housing prices in Malaysia is illustrated in Figure 3.4 which compares the movement of three price series from 1972 to 1986. While consumer prices rose steadily during 1972-82 at a compound annual rate of 7.0%, and residential rents rose at a compound rate of 6.4% over the same period, the price of newly built housing rose at a compound annual rate of 18.9%.[10/] Since 1982, however, new housing prices stabilized and then declined by about 20% from their peak in 1984; during the same period incomes fell by about 13%.

Fig. 3.4: Consumer Prices, Rents, and Housing Values



3.15 Housing prices are set by the interplay of supply and demand factors. On the supply side, the cost of factors such as labor, land, materials, and entrepreneurial inputs will influence the ultimate selling price. On the demand side, incomes, wealth, demographic factors, and relative prices influence what households are prepared to pay for housing. In studies of the price of housing in many countries, it has been found that the supply of housing is highly elastic, meaning that when housing demand shifts, supply responds relatively quickly and completely to provide the quantity and quality

10. Data for the Consumer Price Index (CPI) and rent series are from the Department of Statistics. Data for the Index of Prices of newly built houses are based on Bank staff calculations of new housing prices for single-story terrace house in a sample of cities and towns, using data from the Property Market Reports for 1980-86.

of housing that is being demanded. When this happens, increases in demand are more likely to be translated into changes in the quality and quantity of housing produced. Where supply is fairly competitive, one expects that over the long run the price of housing is influenced predominantly by supply factors, that is, by the cost of inputs.

3.16 In Malaysia, the costs of most basic inputs into housing do not appear to have changed much during the 1970s and 1980s. For example, the overall index of producer prices changed at an annual rate of 6.2% from 1975 to 1982. During the same period, the index of crude material prices, which is more applicable to construction activities, changed at an annual rate of 6.3%. The median annual rate of increase of daily wage rates for ten groups of occupations examined was 6.8% for the same period.[11/] Land costs, however, increased at roughly the same rate as housing prices during the 1970s and 1980s. Overall, it does not appear that the costs of housing inputs, other than land, rose at rates that could have contributed substantially to the extraordinarily rapid housing price rises experienced in Malaysia.

3.17 Rather than the increased cost of inputs, the explanation for high house prices in Malaysia seems to be the policy environment in which housing developers must function, and somewhat paradoxically, the government policies and programs intended to raise the quality and quantity of the housing produced. Following a review of the Government's overall involvement in the sector, five key factors have been identified which seem to have influenced the housing price level either directly, by increasing construction standards and costs, or indirectly, by increasing developers' risk. On the supply side these factors are: (a) land-use standards and infrastructure practices required by local governments; (b) lengthy housing construction approval procedures; (c) the increasing role of the public sector in housing production; and (d) allocation quotas related to the New Economic Policy (NEP). Strong demand for housing derived from growing incomes and urbanization may have been further stimulated by the Treasury Lending Program which considerably enhanced buyers' financing capacity.

3.18 Land-use Standards and Infrastructure Practices. Perhaps the major factors in directly increasing housing prices in Malaysia are the very high land-use standards and infrastructure practices used in housing development. Land-use standards determine how much of a given area is used for house construction and how much is devoted to other purposes. In Malaysia, an estimated 25% of the land developed for residential purposes is wasted due mainly to:

(a) excessive road areas which are up to four times larger per household than the areas used for projects in Asia, Europe and the United States for a similar range of plot size;

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11. Among the occupations whose wages were examined were a variety of skilled and semi-skilled workers in rubber estates (artisans and workshop workers), tin dredges (workshop workers, lorry drivers, and dredge crews), and bus companies (workshop workers). Data were taken from the Department of Statistics Yearbook of Statistics, pp. 208-213.

(b) inappropriate set-back requirements, i.e., the area required between a house and the property line; and

(c) a requirement that community facilities be provided on the basis of population thresholds which encourages smaller-scale, low-density developments in order to avoid the additional cost of such facilities to the developer.

3.19 Due to such wastage, only 25% to 50% of the land area developed may be salable (in contrast to 65% typically achievable in high density projects in other countries). The cost of the land which cannot be sold is therefore passed on by the developer to the home buyer, so that housing costs are higher than necessary. Costs are further increased by the high infrastructure standards preferred by local authorities in order to decrease subsequent maintenance costs and to obtain Federal Government grants for road maintenance. Since housing matters and land-use standards are the responsibility of state and local authorities in Malaysia, the Federal Government has until now been largely unable to introduce lower, but still acceptable, standards. In view of the importance of this matter, a detailed discussion is provided in Chapter 5.

3.20 Housing Project Approval Procedures. A major impediment to a responsive supply system is the lengthy process that developers must follow to secure approval of housing projects. Procedures for conversion of rural to urban land and for obtaining subdivision and building approval are complicated and time-consuming. One recent study of the housing delivery system in Malaysia found that the approval process for land conversion and subdivision can take from two to seven years, and is fraught with uncertainty.[12/] The impact of this time delay alone is sufficient to double the effective cost of land on which a developer intends to build. Further delays accompany the approval of a site plan and building specifications. In most states, from 15 to 20 separate government departments are involved in the approval of plans and specifications, thus adding another two to five years to project completion. Figure 3.5, which shows a schematic diagram of the housing development process for the Federal District of Kuala Lumpur, suggests the complexity of the process. In addition to raising the cost of the final product and greatly dampening the responsiveness of the private construction sector to changes in demand, the tortuous and often highly uncertain process of land conversion and site and building approval imposes heavy entry costs on potential new firms that might normally enter the construction market during times of rising demand.

3.21 The situation in Malaysia may be better understood through a comparison with Thailand, which has a responsive housing market, fairly free of government red tape. Although Thailand and Malaysia experienced roughly equivalent growth in real income during the 1970s and 1980s, increases in real land and property values in Thailand have been much more moderate than those in Malaysia. One recent study of the Bangkok land and housing market, for example, found that land values rose at approximately the same rate as did the

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12. See M.K. Sen, "Dilemmas of the Housing Delivery System in Malaysia," Housing and Property, December/January 1986, p. 29 ff.

consumer price index between 1975 and 1985.[13/] The study documents extensively the highly flexible and simplified process that developers must follow in order to implement new residential construction projects, and provides highly suggestive evidence that were the Malaysian regulatory framework closer to that of Thailand, the Malaysian supply system would have been capable of accommodating the rapid shifts in demand of the 1970s and 1980s without experiencing such extraordinary rates of price appreciation.

3.22 Public Housing Production. A third factor that has the effect of raising private sector costs, both for finished housing and entry costs for potential new firms, is the decision of the public sector to become a major participant in the process of housing production. As indicated in para. 3.5, the public sector's share of new residential construction has been rising since the early 1970s. The segments of the market for which the public sector has been building have not always been confined to the lowest tiers of the market, with the result that the public sector and the private sector are often in head-to-head competition for comparable market segments. In some cases, it appears that local authorities have facilitated the processes of land conversion as well as site and building approval for public sector projects, and may even have waived certain requirements. The public construction firms may also be in a stronger financial position due to implicit Government backing enabling them to hold unsold inventory and cut prices more aggressively than private competitors. The accelerated approval process, less stringent application of standards and relative security of public firms have thus placed the private sector at a disadvantage by raising the degree of risk involved in gaining project approvals and in marketing completed units. This increased risk has translated into higher prices.

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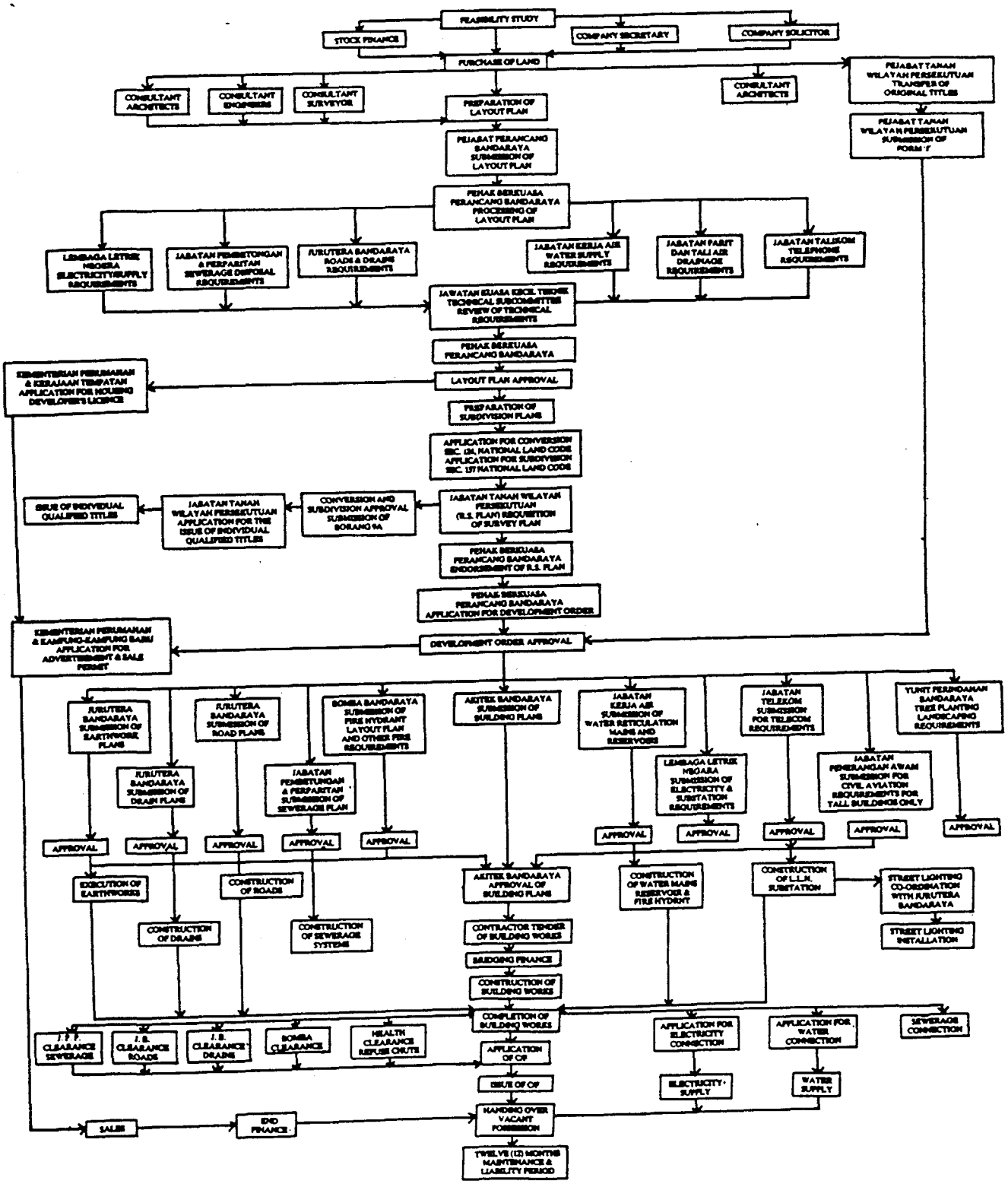
13. Planning and Development Cooperative International, The Bangkok Land Management Study, Washington, D.C., 1987.

Figure 3.5: Housing Development Process in Malaysia



Source: Perumahan Housing & Property, December/January 1986, p. 38.

3.23 Regulations Related to the New Economic Policy (NEP). The goals of the NEP are an integrated, multiracial society and the eradication of poverty. Under the NEP, 30% of all new housing developments must be low-cost units, and 30% to 40% of all units within a development must be reserved for Malays. Such measures can raise developers' holding costs. To enforce these measures, the State Governments require that they approve buyers, leading to further delays and costing developers money even when quotas are met.

3.24 States can and do change allocation requirements for particular developments if developers have made good faith efforts to meet the quotas but failed. But such changes take time and given current interest rates, a year's delay, which is not uncommon, can easily wipe out any profit margin developers enjoy ex ante. This increases the developer's risk, and guarantees that only projects with very high margins will be considered. A M$25,000 unit carried in inventory an additional year because of the restrictions incurs additional costs of M$3,500, at market rates of interest. These quotas further raise the risk (and hence the cost) of building middle- and upper-income units as well, and hence reduce the ability of developers to cross-subsidize units, as intended. Replacing the quotas with direct subsidies to Bumiputras would lessen this adverse impact. A formalization and Government monitoring of the "good faith" efforts would at least reduce the uncertainty facing developers without compromising the NEP objectives.

3.25 Treasury Loan Program. The problems for the housing sector created by the supply side issues discussed above may have been further aggravated by the TLP which has made mortgage loans available to civil servants, without regard to housing costs and at rates of interest that were typically about 4% per annum, less than half the rate of interest for private mortgage finance. During 1981 and 1982, the years in which TLP lending expanded most rapidly, the program accounted for between 30% and 40% of all formal sector lending for housing, and for most of the net increase in housing sector lending in those two years. The effect of the subsidy was to reduce the real cost of housing for civil servants by approximately half. This, in turn, removed the incentive for careful shopping and created considerable upward pressure on housing prices during the early 1980s.

Market Responsiveness

3.26 The lengthy procedures involved in housing construction and the Government's direct involvement in housing production seem to have combined to cause a situation in which rapid shifts in demand, such as those experienced in Malaysia over the past decade and a half, could not be accommodated by corresponding increases in housing supply, with the result that much of the increased demand has been translated into price increases rather than into increases in housing output. Annex 1 provides an analysis of the effect of regulation on housing supply elasticity which supports this argument. There it is found that differences between restrictive and nonrestrictive regulatory environments have a strong influence on housing supply responsiveness. In Malaysia and in Korea (which has strict building codes and urban areas surrounded by agricultural greenbelts that cannot be converted to urban use), housing supply elasticities are extremely low. However, in Thailand and the

United States, which both have fairly nonrestrictive environments, even the smallest estimated supply elasticity is relatively high.

3.27 The evidence of an inelastic supply system is reinforced by additional comparisons with other countries in a similar position. Housing supply elasticity is demonstrated by the way in which housing completions vary in response to housing price changes. In normally functioning markets, housing completions rise during periods of rapidly increasing housing prices, but in Malaysia the supply elasticity of housing completions, whether publicly or privately carried out, has shown little responsiveness to rises in the housing price index or to the availability of housing finance. Furthermore, despite the steady growth in the Malaysian housing stock in the past decade, a comparison of Malaysia with a number of other countries (which might have been expected to produce less housing than Malaysia) puts Malaysia near the bottom of the range for percentage increase in housing stock. Lack of market responsiveness therefore seems to be a key constraint in increasing the availability of low-cost housing.

3.28 The unresponsive housing supply system in the face of strong demand also seems to have driven up the price of housing in Malaysia. In Malaysia, there is a strong correlation between annual changes in the prices of newly built housing and changes in the rate of increase of household incomes, with prices rising at a rate that is 35% faster than the rate of increase of household incomes. This is a possible sign of a highly price-inelastic housing supply, that is, a housing supply that is unable to adjust fully or quickly to demand shifts, with the result that much of the market's supply response is reflected in increasing prices rather than increasing quantities of new housing units. This lack of responsiveness is a notable factor in the housing sector today.

3.29 While the types of statistical analyses discussed above have not been carried out in the United Kingdom, there has been a growing concern that the British Town and Country Planning System, which shares many features with that of Malaysia, has had a similar effect on land and housing prices. One recent monograph, for example, concludes that the British system:

> ...has significantly increased land and housing prices, consumed substantial resources in obtaining planning permissions, and distorted the economic structure, all of which have led to the British standard of living being lower than it otherwise would be.[14/]

The monograph, citing another recent analysis that estimated that increases in land costs alone resulted in a decrease in British real income of "at least 4 percent," estimated that the aggregate reduction in real income (taking into account the effects of higher land <u>and</u> housing prices) was on the order of 10% of national income -- some £30 billion in 1986 (Evans, p.50). In addition to the direct costs associated with higher, but presumably avoidable, land and

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14. Alan Evans, <u>No Room! No Room!: The Costs of the British Town and Country Planning System</u>. (London, Institute of Economic Affairs), 1988, p.50.

housing costs, the author suggests that such costs may have the effect of reducing labor mobility, reducing the aggregate savings rate, and reducing rates of economic growth. While it has not been possible here to attempt to quantify these broader effects within the Malaysian context, it seems clear that the rigidities in the Malaysian housing supply system have had a profound impact on the price of land and housing, and that the ultimate costs to the economy are likely to be far greater than the direct costs to consumers indicated here.

Toward Sustainable Price Levels

3.30 As a consequence of the factors discussed above, housing prices rose too far too fast in Malaysia during the late 1970s and early 1980s. One result was that housing prices in relation to household incomes attained levels that were extremely high by international standards, and that were unsustainable. Table 3.3 indicates how housing values for the least-expensive type of new housing have changed relative to household incomes in Malaysia during the past decade. During the 1970s, the ratio of housing value to household income ranged from 4.6 to 5.2.[15/] In the 1980s, the ratio rose by nearly 40% to a peak of 6.9 in 1982 before dropping back to a level just above 6 in 1985 and 1986.

15. In these calculations, household income is estimated by prorating the entry for "personal consumption expenditures" in the national income accounts to the household level. While this technique may understate actual household incomes because it omits household savings, the technique is consistent with the way in which income is estimated in other countries with which comparisons are made in the following paragraphs.

Table 3.3: Housing Prices and Household Incomes in Malaysia

Date	(1) Value	(2) Household Income	(3) Value/ HH income
1976	M $28,800	$5,941	4.8
1977	M $30,600	$6,627	4.6
1978	M $35,300	$7,538	4.7
1979	M $43,500	$8,421	5.2
1980	M $59,700	$9,888	6.0
1981	M $73,600	$10,966	6.7
1982	M $80,300	$11,619	6.9
1983	M $80,800	$12,282	6.6
1984	M $83,800	$13,179	6.4
1985	M $79,700	$13,106	6.1
1986	M $70,100	$11,587	6.0

Notes to the table:
Col(1):Average value of single-story terrace houses in a sample of cities.
Source:Ministry of Finance,Property Market Reports,Vols. for 1980-86.
Col(2):Private consumption per household, based on national income accounts data, population, and assuming average household size to be 5.09.
Sources: Ministry of Finance, Ministry of Housing,and IBRD, Malaysia: Industrializing a Primary Producer,Vol.2:Statistical Appendix.
Col(3):Col(1)/Col(2)

3.31 Even at this level, housing costs are still quite high relative to incomes, and may be destined to fall farther before resuming their upward course. This is suggested by Table 3.4, which indicates the relationship between average housing values and average household incomes in selected cities in a number of other countries. As the table indicates, the current ratio of housing values to average household income in Malaysia, a value of 6.0, is at the high end of the range among comparator cities. Only in Cairo, Egypt, has the ratio been higher, with a value of 7.5 in 1981. This, however, was the result of highly unusual housing market conditions in which workers' remittances from the oil-producing nations of the Middle East comprised some 15%-20% of GNP and, when repatriated, tended to be invested to an overwhelming degree in land and housing. This was as much due to the poor level of financial development and a mistrust of formal financial institutions as it was to attractive returns on housing investment.

Table 3.4: Housing Prices and Household Incomes in Selected Cities

City	(1) Average Household Monthly Income (M$)	(2) Average Value to Income Ratio
Colombia		
Bogota	320	4.4
Cali	259	3.2
Egypt		
Cairo	104	7.5
India		
Bangalore	81	2.5
Korea		
Seoul	469	6.0
Pusan	416	5.5
Average of smaller cities	323	4.5
Philippines		
Davao	142	0.7
Manila	432	4.5
United States		
Phoenix	1,972	2.0
Pittsburgh	1,845	1.7
Malaysia		
Average for 12 cities	453	6.0

Notes to the table:
Col(1): Average income in 1981 US$.
Col(2): Average housing value/average annual income.

Sources: S.Malpezzi and S. Mayo, "Housing Demand in Developing Countries," World Bank Staff Working Paper No. 733, 1985; mission calculations based on Ministry of Finance data (national income accounts, Property Market Reports) and census data.

3.32 Korea, which also has had high ratios of housing prices to incomes, is a better comparator. While the table indicates that ratios of housing value to income ranged from 4.5 to 6.0 for Korean cities, these numbers reflect conditions in 1978, when housing production and housing prices peaked before experiencing dramatic declines in the following year and failing to recover for the next four years. Based on international experience, it appears that maximum sustainable ratios of housing price to income for countries at Malaysia's level of economic development are closer to the ratios experienced in Malaysia during the late 1970s, i.e., on the order of 4.5 to 5.0. Thus,

prices may have to fall by another 10% to 20% relative to household incomes before beginning to rise again.

3.33 During the time that it takes for this continuing adjustment to occur, it may be expected that the residential construction sector will remain weak. While the current low interest rates for residential mortgages may attract some marginal buyers to enter the market, it remains the case that prices are still too high for many buyers to participate in the market without further price retrenchment.

D. Summary

3.34 This chapter finds that the housing sector plays a larger role in the economy than is commonly perceived, with housing investment having been as high as 9% or more of GNP within recent years. Housing sector investment in the early 1980s was at an unsustainably high level, suggesting that recent declines in the level of activity in the sector have represented a return to a more normal and sustainable position rather than a short-term aberration. The high level of investment in housing was not the result of numerical overproduction of housing, but was instead attributable to an extraordinarily rapid and sustained rate of increase in the selling price of new housing. Values of newly built houses increased at a compound rate of about 13.8% per year between the mid 1970s and 1984, dramatically outstripping the rate of increase of either rents or consumer prices, which increased at rates of 7.0% and 5.1% per year, respectively. Such increases also outpaced nominal income increases, which rose by only 10.5% per year over the same period.

3.35 Rather than high input costs, it is the policy environment in which housing developers in Malaysia must operate which is found to be responsible for the high housing prices. As a result this chapter identifies five areas in need of reform: (a) land-use standards and infrastructure practices required by local governments; (b) lengthy housing construction approval procedures; (c) the increasing role of the public sector in housing production; (d) the Treasury Loan Program; and (e) allocation quotas and practices. Reforms in these areas can be expected to increase the flexibility of the Malaysian supply system to respond to changes in housing demand, to mitigate recent trends toward unaffordable housing prices, and to facilitate production of more and better housing for people at all income levels.

4. EVALUATION OF HOUSING POLICIES AND PROGRAMS

A. Issues and Questions

4.1 As Chapter 3 indicated, housing costs for owner-occupied housing rose at a rate of nearly 19% per year during 1972-82 (para. 3.14), while other prices rose at only a third of that rate, and incomes rose at an annual rate of only 10%. This phenomenon was also manifested in the high minimum price of the lowest standard units produced by the formal sector. As a result, demand for housing was choked off, households were squeezed out of the market for formal sector housing, housing production fell considerably, and attempts to stimulate the economy through the Special Low Cost Housing Program were not very successful in the projected time frame. What this means for most Malaysians is that, for the middle to lower-middle income groups, the housing options have been to double-up, rent or spend a high proportion of income on housing. It was suggested that a major part of the problem of high and rapidly increasing housing costs was the effect of certain government programs and policies to increase costs either directly, by requiring unnecessarily high standards, or indirectly, by restricting supply (through a complex and time consuming approval process) or by excessive or poorly timed stimulation of demand.

4.2 Each part of the housing delivery system, whether public or private, is affected by the Government's programs and policies for the sector, all of which embody some element of either a subsidy or a tax (a cost). Taken as a whole, these subsidies and taxes have both a direct and indirect influence on the incomes and the well-being of society. The direct effects of subsidies and taxes change the quality and type of housing that some families occupy, and the price that they pay for it. Their indirect effects change incentives within the economy that influence, often in subtle ways, the desirability of either producing or purchasing housing. For example, depending on the level of subsidies or taxes associated with a given housing program, situations can arise in which it is financially unprofitable for developers to produce housing despite an apparent excess demand for it. Conversely, it may be profitable for developers to produce housing (when it is subsidized), despite the fact that the finished house is worth less than the resources required to produce it. Neither of these situations is particularly desirable, and if evidence of either is found, policies and programs should be adjusted to correct them.

4.3 This chapter examines the housing market in terms of how the incentives and disincentives created by policies and public housing programs influence not only the cost of housing construction but also the type of new housing constructed. The discussion of housing prices begun in Chapter 3 is thus developed here by quantifying the specific effects of the government interventions in the sector, using a financial model which permits a comparison of the extent to which the individual interventions add to or reduce housing development costs and, based on this analysis, assessing the efficacy of the various policies and programs. The analytical framework employed allows an examination of the following questions, which are at the heart of housing policy concerns in Malaysia today:

- What are the major subsidies, costs and risks associated with policies and programs?

- Are the mechanism(s) by which these cost and subsidies are transmitted to economic actors (e.g., developers, purchasers, landlords, tenants) transparent?

- What is the extent and level of these costs and subsidies?

- What incentives are created for housing suppliers and buyers?

- Are social equity objectives served by the present system?

- What adjustments should be made?

B. The Present Value Method

4.4 Housing policies and programs are evaluated in terms of how they affect the incentive structure for housing suppliers, home buyers and public agencies involved in housing development. In this chapter present value analysis is used to examine the economic and financial costs and benefits of major public housing programs. For each program, a cash flow model for a representative investment is set up and the present value of each government intervention (e.g., land subsidies provided for public housing, finance subsidies, taxes, regulatory costs) is calculated. Present values have the advantage of enabling direct comparisons of the costs and benefits of quite different interventions in various programs.[1/]

4.5 The same present value method is also used to evaluate the private housing market and how government actions, such as land-use regulation, financing policy, infrastructure provision, taxation, price controls and other regulations, affect incentives to investors.

4.6 The present value approach can be used to test the efficiency of investments as well as the equity goals of proposed investments. Conventionally, housing is more often regarded as a social service or basic need than as a productive investment. But shelter and infrastructure investments are productive: they are investments in an asset which yields a flow of services over time.[2/] Efficient investments are those which yield the most services for the resources society puts into them, discounted for when they are available. As is commonly agreed, the present value investment rule

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1. Conceptually, the model used for this report is quite simple and is derived from standard cost-benefit models (for example, E.J. Mishan, Cost Benefit Analysis, 3rd edition, London: George Allen and Unwin, 1982; J. Price Gittinger, Economic Analysis of Agricultural Projects, 2nd ed., Baltimore: Johns Hopkins University Press, 1982. This particular model is characterized by (a) a design which facilitates comparison of several representative investments, (b) more explicit and detailed treatment of government interventions (taxes, subsidies, etc.) than is customary; and (c) a simple but explicit focus on the incidence of the interventions, i.e., how they variously affect the viability of the investment from the points of view of the economy, developers, landlords, homeowners, and tenants.

2. It is the durability of assets which requires that present values (or the closely related concept, internal rate of return) be used to correctly analyze capital investment decisions. The incremental capital output ratio (ICOR), another commonly used criterion, does not account for the durability of assets.

yields the most efficient set of investments. If the present value of the benefits to society (net of taxes, subsidies and other distortions) of a house exceeds the present value of its costs, investment in such a unit is, by definition, efficient. More precisely, the returns to such an efficient investment exceed the opportunity cost of capital, measured by the discount rate.

4.7 Equity is related to the distribution of assets and the services from those assets. Purely distributional issues are usually thought of as an essentially political decision, not an economic one. But equity and efficiency are, in fact, closely related. The present value model cannot set society's distributional goals, but it can demonstrate the cost of reaching alternative goals. Properly augmented with information about demand, it can indicate whether current policies, or alternatives, are likely to reach distributional goals, i.e., who will benefit and by how much. The present value model can thus help determine the least costly way of reaching a given a set of distributional goals.

Choice of Representative Investments

4.8 Focusing on representative investments has the advantage of permitting a detailed study of each cost and benefit element, but it requires a decision as to what particular size, location, and type of unit is "representative" for a particular program (or for a type of unit in the private market). To keep the presentation of the results manageable, thirteen representative investments, classified by program type (PLCHP, SLCHP, or not in a program), location (Kuala Lumpur, large urban area, small urban area), tenure (own[3], rent, squatter), size of unit, built on public or private land, and type of developer (public, private, individual, informal) have been chosen. Each case is described more fully in Annex 2.

C. Examining a Representative SLCHP Investment with the Present Value Model

4.9 Table 4.1 presents a summary of present value model results for a SLCHP unit located in Selangor, privately developed on state land, of low-cost design, using current standards. This unit is chosen as the first "benchmark" because of the importance of the SLCHP in the overall program. Later tables in the chapter will compare several representative units from other programs and in other locations. The later tables will present the results in a more aggregated format, but the full input data and disaggregated results for all cases can be found in Annex 2. Key assumptions for the model are described

3. Owner-occupied structures on land leased long-term.

below.[4] Cash flows beyond the initial development period are discounted at a rate of 10%.[5]

4.10 Table 4.1 has three horizontal sections. The first shows how the combined public interventions affect the cost-benefit calculation to the economy as a whole; to the developer; and to the house purchaser, represented as vertical columns, respectively. The second section shows these same incentives/disincentives, but this time aggregated by type of intervention. The latter include the subsidies for land, infrastructure, construction and finance associated with the SLCHP as well as the costs of regulation and taxation. The third section shows how the interventions affect affordability.

4.11 Costs and Benefits to the Economy (Table 4.1, column 1, section 1) are conceptually straightforward. Applying shadow prices, the present value of the resources used to build the unit is the economic cost of the unit. The present value of the benefits is taken to be the current market value.[6] For the unit chosen, economic benefits exceed costs (M$30,000 is greater than M$28,100), so it is economically efficient to build such a unit.

4.12 Financial Costs and Benefits to the Developer (Table 4.1, column 2, section 1) are derived from the economic cost by subtracting the additional costs imposed on the developer, by government regulation, and adding the subsidies granted to him by several government interventions. This then, is the developer's financial cost of building the unit. The subsidies and costs are as follows:

(a) Land Subsidy. A unit developed on public land was chosen for this example. When public land is used for SLCHP projects, states may donate the land, charging only a nominal fee (known as a premium) of M$0.20 per square foot. Based on a market value of M$4 per square foot, an 800 square foot plot, a total land-to-plot ratio of 2.5, and a normal conversion premium of M$0.50 per square foot, the land subsidy is calculated as M$8,600.[7]

(b) Infrastructure Subsidy. For SLCHP units, this includes reductions in drainage and water fees (assumed to decrease infrastructure capital

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4. The model is described in detail in S. Malpezzi, Analyzing Incentives in Housing Programs: Evaluating Costs and Benefits with a Present Value Model (World Bank, Infrastructure and Urban Development Department Discussion Paper No. INU 23, 1988). A Lotus diskette containing the computer-based model (including all input data and all tables generated by the model for this chapter) is also available on request.

5. Ten percent is a high real rate, but below the Bank standard of 12%. At current interest rates (12%) and inflation (2%) this is the approximate opportunity cost of capital in Malaysia. Results reported in this paper are qualitatively robust with respect to changes in the discount rate.

6. Large market-wide distortions can cause the economic benefit to the economy and the market value to diverge. Since such differences are difficult to estimate and not extremely large in Malaysia, this report assumes that market values represent the best estimate of the benefits.

7. The model assumes that land is purchased just before development, and that zoning approval has been obtained. According to conversations with developers and government officials, such approval can take five to six years to obtain, and is therefore a major additional cost. One of the most popular features of the SLCHP is that regulatory approval is speeded up, often to less than one year.

costs by 10%), and a professional services subsidy (considered worth 5% of the selling price). These are an additional benefit of M$1,450 to the developer.

(c) Construction Subsidy. Some units produced under the SLCHP have received limited construction materials subsidies, chiefly a reduction in the price of cement. Malaysia's cement price is about twice the world price, but cement represents only about 5% of costs, even at the higher price. The cement price reduction is not readily available, and actually corrects for a pricing distortion, so construction subsidies for this unit are assumed to be zero.

(d) Cost of Regulations:

(i) Land Use and Infrastructure. As indicated in para. 3.18, infrastructure costs are high at current standards. Although new, lower standards for low-cost housing have been introduced under the SLCHP, actual approval of plans utilizing the new standards is left to local authorities, who have so far continued to rely on previous, higher standards. The costs of the higher standards are analyzed in detail in Chapter 5. Based on that analysis, the cost per plot of developed and serviced land under current standards for private development in Selangor is estimated at M$8,600 (see Table 5.1). Much of this cost is related to the reduction in salable land due to requirements for wide roads, setbacks, and community facilities. The difference in cost between the current standards (under which as little as 25% of the developed area is salable) and a target of 65% salable[8/] land is M$6,000 per plot (see Figure 5.2). This difference is the estimated cost of land-use and infrastructure regulation. The estimate is considered conservative since it is the minimum amount that would be saved by changing the standards.[9/]

8. 65% salable land is used in this example to show possible savings although the report recommends a more conservative 55% standard at this time.

9. For example, lowering road design standards not only increases salable land, but also reduces the related road surfacing and maintenance costs. The latter cost saving, however, is not included in the estimated saving of M$6,000.

Table 4.1: Summary of Present Value Model Results
(M $)

SLCHP Unit in Selangor, Privately Developed on Public Land, Low Cost, Current Standards (not SLCHP stds)

I. COSTS AND BENEFITS TO THE ECONOMY; TO THE DEVELOPER; AND TO THE HOUSE PURCHASER

1. Costs and Benefits to the Economy

COSTS:	
Economic Cost (shadow priced)	($28,100)
Cost to the Economy:	($28,100)
BENEFITS:	
Economic Benefits (shadow priced)	$30,000
Benefit to the Economy:	$30,000

2. Costs and Benefits to the Developer

Economic Cost	($28,100)
Land Subsidy	$8,600
Infrastructure Subsidy	$1,450
Construction Subsidy	$0
Cost of Regulations:	
Land Use and Infra.	($6,000)
Planning Permission	($1,000)
Sale Restrictions	($1,625)
Building Regulations	$0
Acquisition Taxes	($250)
Cost to Developer:	($26,925)
Selling Price	$25,000
Investment Tax Credit	$0
Benefit to Developer:	$25,000

3. Costs and Benefits to the Purchaser

Selling Price	($25,000)
Extra Transaction Costs	($563)
Property Tax	($951)
Capital Gains Tax	($0)
Cost to Purchaser:	($26,514)
Market Value of Housing	$30,000
Recurrent Infra. Subsidy	$958
Finance Subsidy	$4,017
Benefit to Purchaser:	$34,975

II. INCENTIVES AND DISINCENTIVES, AGGREGATED BY TYPE OF INTERVENTION

1. Land Acquisition

Land Subsidy	$8,600
Net Land:	$8,600

4. Construction Subsidies

Materials Subsidy	$0
Construction Finance Sub.	$0
Labor & Other Cons. Sub.	$0
Net Construction:	$0

2. Infrastructure

Capital Infra. Subsidy	$1,450
Recurrent Infra. Subsidy	$958
Net Infrastructure:	$2,408

5. Financing

Finance Subsidy	$4,017
Net Finance:	$4,017

3. Regulation

Land Use and Infra.	($6,000)
Planning Permission	($1,000)
Sale Restrictions	($1,625)
Extra Transaction Costs	($563)
Net Regulation:	($9,188)

6. Taxes

Acquisition Tax	($250)
Investment Tax Credit	$0
Property Tax	($951)
Capital Gains Tax	($0)
Net Taxes:	($1,201)

III. AFFORDABILITY TO TENANTS

Assuming a payment-to-income ratio of 0.2; current financing for the current selling price; market rate financing for the

Current Selling Price of Unit:	$25,000
Affordable at an Annual Income of:	$11,603
Market Price of Unit:	$30,000
Affordable at an Annual Income of:	$16,030

(ii) Planning Permission and Sale Restrictions. Other regulations which increase developers' costs are the long time required for obtaining planning permits and in meeting sale restrictions which impose quotas on eligible buyers (paras. 3.20 and 3.24). Although the delays in obtaining various permissions are a critical factor in constraining the ability of developers to quickly respond to demand, there is no ready information on how much "extra" time is required. The M$1,000 estimate presented here is based on an assumed one year additional delay during construction. This is likely to be a minimum estimate. Actual experience under the SLCHP could be used to improve this estimate. Sale restrictions refer to quotas set by the individual states, commonly requiring that 30%-40% of low-cost units are reserved for Bumiputras. In addition, developers commonly offer 5%-7% discounts to Bumiputras to increase their ability to meet the sale restrictions. Both permits and quotas tie up developers' capital. In the case considered here, an extra holding period of six months for the average unit (at a discount rate of 10% and a sales price of M$25,000), and a 5% discount for the 30% of the units under quota net out to M$1,625.

4.13 The benefit to the developer is the sales price of the unit, which for SLCHP units is controlled at M$25,000. Additional possible benefits include tax exemptions for developers which favor housing development over other types of investments. The preliminary conclusion[10/] is that these are small; for example, there is no investment tax credit for housing. Figure 1 shows a graph of developer incentives and disincentives as outlined in Table 4.1, and assumes the developer loses the M$5,000 difference between the controlled purchase and market prices. The sum "NET INCENTIVES" highlights the fact that the net financial cost-benefit of the program from the developer's point of view is negative. Even though it is economically efficient to produce this unit, in this example the regulatory cost and effect of the controlled price more than outweigh the land subsidy, so that the financial cost to the developer exceeds the selling price, and developers would not normally produce them. Nevertheless, these type of units might still be built if doing so were a requirement for obtaining permission for other profitable activities, such as building more expensive housing. It is worth noting that this is the most

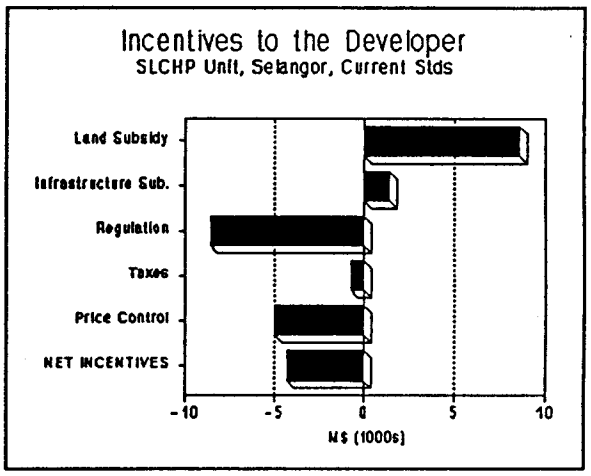

Figure 1

10. Complete analysis of all tax provisions affecting developers and comparisons with other investments are beyond the scope of this report; however, such analysis could be carried out using the same present value of framework.

favorable case in respect of producer incentives, because not all developers get subsidized land.[11]

4.14 Costs and Benefits to the Purchaser. Although a private developer would be unlikely to proceed with the housing unit described in this example, if the unit were to be built (for example, because of a cross-subsidy) the financial cost-benefit is quite different for the prospective home buyer. The cost to the purchaser is, obviously, the sales price of the unit. Some programs studied impose additional transaction costs on participants (for example, squatter houses are bulldozed in redevelopment schemes, so that people in the areas must move to temporary housing, and then back to the redeveloped area). In this SLCHP example, extra transaction costs are confined to the foregone income on a M$2,500 deposit, worth M$563. Taxes are another cost. Twenty years of discounted property taxes have a present cost of M$951 (assuming an effective rate of 0.004% of the sales price). In these simulations, it is assumed that homeowners do not sell their houses, hence capital gains taxes are zero. Therefore, in Table 4.1 and Figure 2, property taxes and the cost of a deposit are the only "extra" cost paid by purchasers.

4.15 Purchasers receive three benefits: in this example, a recurrent infrastructure subsidy worth M$113 per annum, below-market-rate financing, and a house worth M$30,000 for only M$25,000. The present value of 20 years of the infrastructure subsidy is M$958. Assuming a market interest rate of 11%, the present value of the subsidy contained in a 8.5%, 25-year loan for 95% of the purchase price (the typical SLCHP loan) is M$4,017. Figure 2 highlights the positive net effect on purchaser's cost-benefit and, hence, on demand.

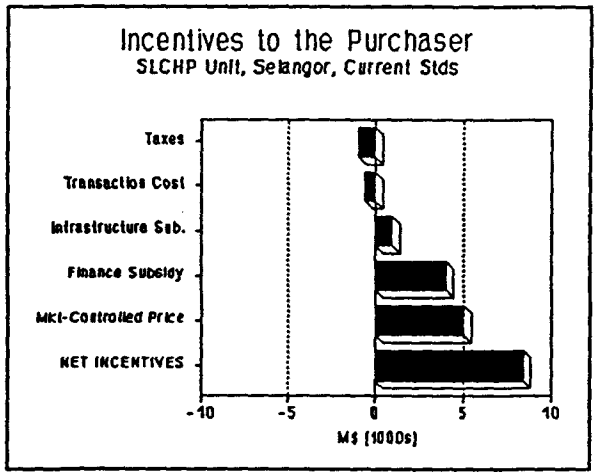

Figure 2

4.16 To summarize to this point, the benefit to the economy of building this unit exceeds costs (M$30,000 is greater than M$28,100), so it is an efficient investment (see the first columns of Figure 3). But the additional costs imposed by local authorities' stringent regulation are borne by the developer; his costs therefore exceed his financial benefits (M$26,925 is greater than M$25,000, Table 4.1 and Figure 3), so it is not profitable for him to build the unit. The benefit to the purchaser greatly exceeds his financial cost (M$34,975 is greater than M$26,514), so there would be demand for such units. This particular case is, again, illustrative, but representative of an

11. Land subsidies have their own perverse incentive: state governments allocating the land have an incentive to allocate poorly located, cheap land for housing, reserving desirable land for other activities. As the next chapter points out, appropriate land use standards permit economical construction on well located land. While systematic data are not available, recent information suggests deep land subsidies -- "free" land -- are not widespread in the current SLCHP, but state land can be alienated at prices below market.

important class of units produced in the program. In some of the other cases analyzed in this paper outcomes will be quite different. For example, later a case is studied where purchaser incentives (and hence demand) is not so strong because of inappropriate pricing of units in smaller towns.

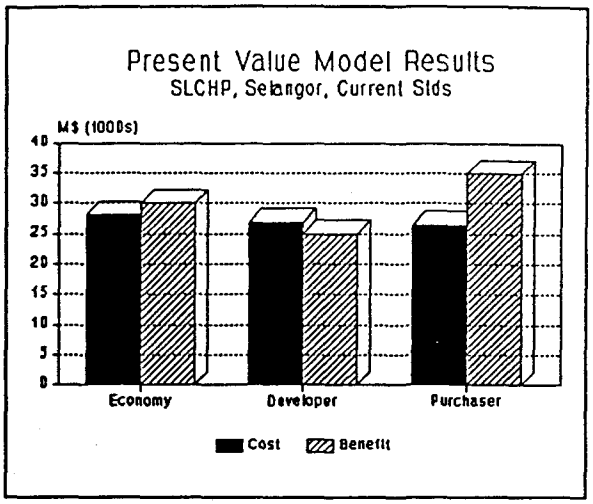

Figure 3

4.17 Aggregated Incentives and Disincentives by Type of Intervention. The various government interventions shown in the first section of Table 4.1 are also aggregated in the second section of the table by type of intervention. Land price subsidies are presented separately; the infrastructure subsidy which accrues to the developer during the development period is added to the recurrent infrastructure subsidy received by the end-user. All regulatory costs are aggregated into one category, as are all construction period subsidies. In this presentation, the finance subsidy refers to the end-user subsidy; and all taxes are aggregated, although some are borne by the developer and some by the end-user.

4.18 For consistency, this aggregation scheme will be used in several of the tables which follow in this chapter. While the individual incentives and disincentives could be aggregated in other ways (e.g., land-use regulations could be aggregated with land price subsidies), they are aggregated here with other regulations since it is illuminating to total all regulatory costs. Again, Annex 2 presents the individual components in disaggregated form.

4.19 Affordability to Tenants. The affordability of the unit assessed in the model is shown in the third section of Table 4.1. Affordability at current terms is the annual income required to purchase the unit at the controlled selling price under current financing terms (M$25,000, 8.5% interest, 25-year loan, 95% loan to value (LTV) ratio), if payments require 20% of income. Under these assumptions, an annual income of M$11,063 is required to purchase the unit. This would be affordable to households in the top half of the urban income distribution. At current market prices and financing (M$30,000, 11%, 90% LTV), it is affordable at M$16,030.

4.20 The assumption of a 20% debt-service-to-income ratio was based on data on rent-to-income ratios reported in the Asian Development Bank's Urban Sector Profile and is probably conservative. The actual debt-service-to-income ratio will probably be higher for many households due, among other things, to a higher willingness to pay because of the investment motive, and the fact that any average willingness to pay masks a large fraction of the population who will pay above the average. Assuming a 30% payment-to-income ratio, the same unit becomes affordable below the 40th percentile. Under either assumption, the affordability of the unit is not really very unfavorable for a new construction program. While such units are not affordable to the entire population, the program does appear to have reduced the cost of terrace houses

affordable by middle class Malaysians. Reaching the entire population will require other programs, including upgrading existing settlements, but the major problem with SLCHP units is not that they are inherently unaffordable, but that some regulatory practices unnecessarily drive up the cost. The next section will illustrate this in more detail, and will compare several variants of the SLCHP and related programs.

D. Comparing Other Public Programs to the SLCHP

4.21 Using the present value model described above, housing units constructed under several government programs have been evaluated. Table 4.2 presents estimates of costs, benefits and interventions for typical units in four representative programs: two PLCHP developments and two SLCHP developments. Assumptions used in each case and the components of these summary measures can be found in Annex 2.

4.22 All units have low-cost designs and are located in Selangor state.[12/] The PLCHP examples vary by whether the development is undertaken by the public or the private sector; both are on public land. Both SLCHP units are privately developed, but they differ by whether public or private land is used. The units are evaluated using standards as currently enforced by local authorities which are, in general, much higher than the guidelines for SLCHP. The incentives and disincentives quantified in Table 4.2 are aggregated under the same headings as were used in Table 4.1. The derivation of the cost of regulations is described in para. 4.12 (d). The numbers presented in the table are estimates of costs and benefits for some typical cases under current best assumptions for a "representative" investment, but specific results will vary under other reasonable or plausible assumptions. It is not possible to present all possible cases that might be of interest, but sensitivity analysis indicates that the qualitative statements made are robust with respect to these assumptions. Guidelines for carrying out additional simulations are available upon request so that the analysis can be extended and applied to more cases.

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12. As noted earlier, low cost refers to a particular kind of house (typically 40-50 sq.m., often a single-story terrace design, usually selling for M$25,000). Selangor was chosen as a "representative" location to facilitate comparisons between programs. Differences in location are, however, very important, as discussed in para. 4.38.

Table 4.2: Comparison of Key Public Sector Programs
(M $)

Program:	PLCHP	PLCHP	SLCHP	SLCHP
Developer:	Public	Private	Private	Private
Land:	Public	Public	Public	Private
Structure:	Low Cost	Low Cost	Low Cost	Low Cost
Planning Stds:	Current	Current	Current	Current
OVERALL COSTS AND BENEFITS:				
Resource Cost to Economy (1)	($31,700)	($31,700)	($28,100)	($28,100)
Current Market Value of Unit (2)	$20,000	$30,000	$30,000	$30,000
Economic Cost-Benefit (3)	($11,700)	($1,700)	$1,900	$1,900
NET INCENTIVES AND DISINCENTIVES:				
Land (4)	$9,000	$9,000	$8,600	$600
Infrastructure (5)	$1,518	$1,518	$2,408	$2,408
Construction Subsidies (6)	$4,000	$0	$0	$0
Regulatory Costs (7)	($8,625)	($8,625)	($8,625)	($8,625)
Financing (8)	$11,962	$11,962	$4,017	$4,017
Taxes (9)	($952)	($952)	($250)	($1,702)
Net Incentives and Disincentives: (10)	$16,903	$12,903	$6,149	($3,302)
COSTS AND BENEFITS TO EACH MARKET PARTICIPANT:				
Financial Cost to Developer (11)	($26,765)	($30,765)	($26,925)	($35,425)
Financial Benefit to Developer (12)	$25,000	$25,000	$25,000	$25,000
Net Profit-Loss to Developer: (13)	($1,765)	($5,765)	($1,925)	($10,425)
Financial Cost to Purchaser (14)	($25,951)	($25,951)	($26,514)	($25,951)
Financial Benefit to Purchaser (15)	$32,920	$42,920	$34,974	$34,974
Purchaser's Cost-Benefit: (16)	$6.959	$16,969	$8,460	$9,023
AFFORDABILITY:				
Current Selling Price of Unit:	$25,000	$25,000	$25,000	$25,000
Affordability at Current Selling Price:	$9,319	$9,319	$11,603	$11,603
Market Price of Unit:	$20,000	$30,000	$30,000	$30,000
Affordability at Current Market Prices	$10,687	$16,030	$16,030	$16,030

4.23 The format of Table 4.2 is slightly different from Table 4.1, to allow concise presentation of key results for several programs on one page. As in Table 4.1, the "pure" economic implications of the investment are presented first, followed by the present value of each aggregate category of incentive or disincentive (land, infrastructure, construction, regulation, finance and taxation). The second part of the table shows the financial calculation of the developer and the home buyer, respectively, after the interventions affecting each. The affordability implications are contained in the third section.

4.24 Costs and Benefits to the Economy. As indicated in the first section of the table (lines 1 to 3), the economic benefits of SLCHP units and the privately developed PLCHP unit in these locations are generally greater than their costs. Resource costs range from M$28,100 to M$31,700, and benefits -- measured by market value -- are an estimated M$30,000. However, the PLCHP units produced by public sector developers and described here are worth less than they cost to produce. Estimates of market values of these units, based on field visits by Bank staff, suggested that while there have been improvements in the quality of public developer construction, the market values and marketability of public sector low-cost units still lag behind the private sector units. Part of this problem is attributable to the poor locations selected. Although a range of values was observed for publicly developed PLCHP units, M$20,000 was chosen as a representative price.[13/]

4.25 The most important difference between the PLCHP and the SLCHP is that the SLCHP has a wider range of developer options and, in particular, makes greater use of the private sector. Private builders have been more successful in building and marketing units than public builders, and builders who use private land (or use public land but pay market prices for it, not currently done in the SLCHP) have stronger incentives to build and market efficiently. The present practice of states' providing land for low-cost development with little or no financial return to them greatly reduces the incentives for the states to select appropriately located land. Permitting market pricing of state land (or at least permitting differential administered pricing) would restore such incentives.

4.26 Incentives and Disincentives, Aggregated by Type of Intervention. Table 4.2, section two, allows comparison of the relative size of each intervention. The current public housing programs incorporate large land and infrastructure subsidies (lines 4 and 5) but impose high regulatory costs (line 7) in the form of land-use and infrastructure standards that waste land, the lengthy approval process for housing development, and the sales restrictions imposed under the NEP. Estimated land subsidies for units built on public land in Selangor are on the order of M$8,000-M$9,000, and comprise (a) land provided for development by the state at a nominal charge, and (b) reduction of the land-use conversion premium (needed to develop land for residential purposes). The only land subsidy for private land development is reduction of the conversion premium.[14/] However, the regulatory costs, which largely reflect the inappropriate land-use and infrastructure standards, are on the order of M$9,000 for both public and private sector developments (line 7). These two effects do not simply cancel each other out; they instead lead to particularly inefficient use of land in development.

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13. This figure was based on field visits and limited interviews with public sector developers. A more comprehensive appraisal of PLCHP units in relation to their production costs is needed for further work with this model.

14. In the model, exemption from a regulation which has a benefit to society similar to its cost is treated as a subsidy; however, reductions in regulations which do not yield corresponding benefits are considered to be pure cost reductions. In other words, there is a baseline of "normal" regulation from which extra regulatory costs are measured. The land conversion premium is here treated as a "normal" regulation.

4.27 Construction cost subsidies (line 6) are not a major problem, partly because the subsidized inputs (such as cement) represent a relatively small share of total costs, and partly because the local construction industry appears on the whole to be efficient and flexible. The M$4,000 implicit subsidy for the public construction firm is estimated from financial cost data from public and private firms for similar construction.[15/]

4.28 Finance subsidies for the SLCHP units (line 8) are relatively large, but not as large as those for land, infrastructure and regulatory interventions. The SLCHP units are assumed to receive 25-year, 8.5% mortgages, when market rates for similar loans not subject to Treasury-regulated ceilings are at least 11%. The PLCHP units carry very high finance subsidies due to the generous terms of those loans - interest at 5.5%, with a two-year grace period. The present value of the difference between a 5.5% PLCHP loan and an 8.5% SLCHP loan is around M$8,000, or about one year's income of a target household.

4.29 Housing in Malaysia is lightly taxed by international standards (line 9). As in most countries, imputed rental income from owner-occupied housing is not taxed.[16/] Capital gains taxes are on a sliding scale, with a maximum rate of 30% if the unit is held for less than a year, decreasing to 5% after five years. In these examples we assume the units are not resold and so capital gains are not realized.

4.30 Costs and Benefits for the Developer and Purchaser. Line 10 of Table 4.2 presents the simple sum of these incentives. In general, incentives are larger than disincentives for the representative investments considered here. But this simple aggregation masks the fact that the different incentives and disincentives accrue to different individuals -- a finance subsidy to the final purchaser will not simply cancel out a regulatory cost borne by the developer. Lines 11 through 16 therefore indicate how the interventions affect costs and benefits for the developer and the purchaser.

4.31 At M$20,000, the publicly developed PLCHP unit is worth less than it costs a public developer to build (M$26,765) and its resource cost to the overall economy (M$31,700). Such low-cost developments will be a drain on public sector resources, and may inhibit other work in which public builders may have more of a comparative advantage (e.g., larger infrastructure projects). But even though the market value of the unit is less than the asking price (M$20,000 versus M$25,000) in this example, the large financial subsidy makes the unit attractive to the purchaser.

4.32 In both variants of the SLCHP, the financial benefit to the developer -- the sales price -- is less than the corresponding cost. Units might nevertheless be built: (a) if Government requires such loss-making investments for developers to win approval of other, profitable investments; (b) in locations where land prices and other assumptions of the model are more

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15. Since there are no substantial economies of scale in the type of construction studied, real costs would be expected to be the same for public and private firms if both were producing at maximum efficiency. Differences in reported financial costs are therefore assumed to represent implicit subsidies to the public firms.

16. Although, as in most countries, rental income from rental units is taxable.

favorable (but then there is a trade-off because market values of the finished houses, and hence demand, will be lower); and (c) if developers can sell the unit for more than the official selling price. For purchasers, financial benefits are uniformly greater than costs, making these very attractive units.

4.33 As computed here the largest net incentives under the program are for public developers on public land (net incentives are over 90% of unit market value), whereas the net incentives are only 39% for private developers on public land and are negative for private developers on their own land, who face a loss of 11%. Such an effect could undermine the Government's general shift toward privatization for the housing sector as a whole and for the SLCHP.

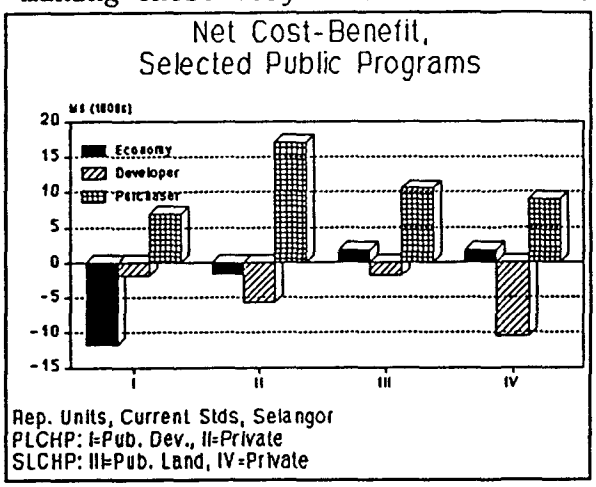

Figure 4

4.34 Figure 4 summarizes data from Table 4.2 on the net costs and benefits of each of the four representative public investments.[17] The real resource cost to the economy of the publicly developed PLCHP unit is over M$11,000 greater than its market value. The privately developed PLCHP unit is worth M$1,700 less than it costs the economy, and the SLCHP units are worth around M$2,000 more than they cost. Each yields a large net financial benefit (subsidy) to the purchaser, but none are profitable to developers. The size of purchaser benefits and developer losses are also highly variable from program to program. Developers will only build such units if they are public entities not motivated by profit (and then Government must implicitly or explicitly cover the loss), or if they are forced to do so in order to obtain permission to build more profitable units. But low-cost units <u>can</u> be <u>made</u> profitable using the proper incentives; notice that in the absence of <u>any</u> intervention the particular SLCHP units chosen for study would be both economically efficient and profitable to build. Specific recommendations for changing incentives to make low-cost housing more, rather than less, profitable will be taken up in the next chapter.

4.35 <u>Affordability to Purchaser</u>. In general, under the demand assumptions noted above, at official selling prices and financing terms, PLCHP units are affordable by households with incomes of around M$780 per month, which would place them at about the 30th percentile of the income distribution for urban peninsular Malaysia (UPM), but as low as the 15th percentile for urban Selangor, where these units are located. For SLCHP units, the corresponding monthly income of just under M$1,000 places the units at about the median percentile for UPM and at about the 30th percentile for Selangor. If the units were auctioned (i.e., sold for market price) and financed at market terms, they would be affordable only by the top quartile of either income distribution, with the exception of the publicly developed PLCHP unit (because of its lower market value).

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17. To save space net figures are presented, i.e. the net cost-benefit is the sum of the costs and benefits for each actor.

4.36 Conclusions. The major conclusion of this section is, holding location and design constant, private developers build better and more marketable low-cost units than public developers. However, in the absence of subsidies, even the most efficient builders cannot deliver houses affordable by the bulk of the population in the current regulatory environment. On the other hand, were regulatory provisions modified, it would be possible to reach far down the income scale with modest or no subsidies.

4.37 Overall, both the SLCHP and the PLCHP have high imbedded costs and subsidies. The SLCHP appears superior to the PLCHP on several counts: in particular, economic costs are significantly lower. But for all four examples, regulatory costs and subsidies are high, and thus the potential exists either to move further down the income scale by modifying program provisions or to reduce subsidies while addressing the same target group. In support of both strategies, new standards for the SLCHP are recommended in paras. 5.16-5.22.

Effects of Standardized Pricing

4.38 In Malaysia, there is significant variation in market conditions by state, but without corresponding variation in type of public housing output and, especially, pricing. Table 4.3, which presents data from the 1986 Property Market Report on the resale prices of low-cost units, illustrates that the market value of these units varies widely by location. The national average of resale midpoints is almost M$36,000. Reported prices range from a low of M$20,000 in Pahang and to approximately M$50,000 for some units in several states (see Table 4.3).

Table 4.3: Resale Price of Low Cost Units by State

(M $)

	Sales Price Single Story Low Cost Terrace House		
	Minimum Reported	Maximum Reported	Mid Point
Perlis	25,000	45,000	35,000
Kedah	25,000	25,000	25,000
Pulau Pinang	48,000	49,000	48,500
Perak	24,500	25,000	24,750
Selangor	20,000	35,000	27,500
Federal Territories	n.a.	n.a.	n.a.
Negeri Sembali	25,000	37,000	31,000
Melaka	25,000	47,000	36,000
Johor	n.a.	n.a.	n.a.
Pahang	20,000	35,800	27,900
Terengganu	n.a.	n.a.	n.a.
Kelantan	n.a.	n.a.	n.a.
Sabah	50,000	50,000	50,000
Sarawak a/	36,000	70,000	53,000
Mean	29,850	41,880	35,865
Std. Deviation	10,440	12,733	10,259
Minimum	20,000	25,000	24,750
Maximum	50,000	70,000	53,000

a/ Sarawak includes low cost and medium cost together.

Source: Property Market Reports 1986

4.39 Subsidy Levels. The effect of fixing house prices without reference to local market conditions is illustrated in Table 4.4 (which is based on components of Table 4.1) and Figure 5. Three structures built in different locations cost the developers the same amount to build in each location, but land costs and market values vary by location. The units are assumed to sell for M$25,000 in the two larger cities but only M$20,000 in the small city. The example given here assumes that the units are worth about M$50,000 in Kuala Lumpur, M$30,000 in a large city, and M$20,000 in a small town. Since the selling price is a uniform M$25,000, the program confers a M$25,000 subsidy to a buyer in Kuala Lumpur and M$5,000 in a large city, but none in the small town. Overall, then, the size of the subsidy received by the participant varies greatly with location. Presumably, the Government would prefer that the size of the subsidy vary with income, family composition, or some other circumstance related to need.

Table 4.4: Variation in Market Prices, Costs and Subsidies by Location

	Capital	Lg. City	Sm. City
Benefit to Tenant			
Market Price	$50,000	$30,000	$20,000
Less Selling Price	$25,000	$25,000	$20,000
Gross Subsidy to Tenant	$25,000	$5,000	$0
Affordability at Current Terms: (annual income)	$11,603	$11,603	$9,283
Affordability at Market Terms: annual income)	$26,717	$16,030	$10,687
Cost of Production			
Developer's:			
Land and Infrastructure Costs (Incl. Subsidies)	($19,950)	($11,950)	($8,200)
Construction Costs (Incl. Subsidies)	($14,100)	($14,100)	($14,100)
Regulation, Other Costs/Subsidies	($9,375)	($9,375)	($8,900)
Financial Cost to Developer	($43,425)	($35,425)	($31,200)
Of Which:			
Selling Price	$25,000	$25,000	$20,000
Profit (+) or Loss (-)	($18,425)	($10,425)	($11,200)
Financial Cost to Developer	($43,425)	($35,425)	($31,200)
Less Developer Regulatory Costs and Subsidies	$7,325	$7,325	$7,100
Economic Costs	($36,100)	($28,100)	($24,100)

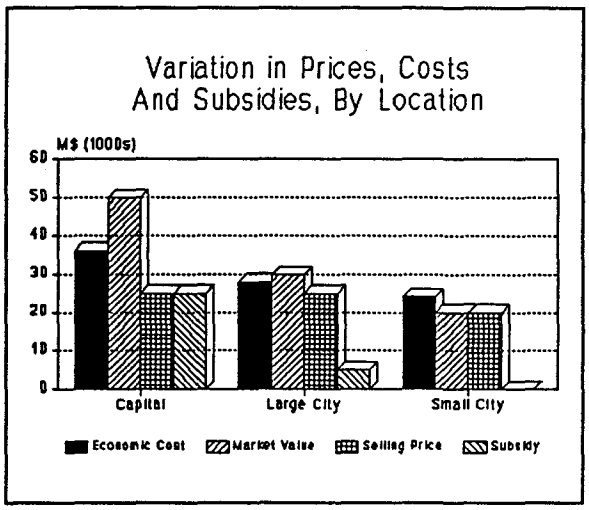

Figure 5

4.40 Affordability. Uniform pricing also ignores differing levels of affordability throughout the country. Analysis of affordability shows that, at current administered prices and financing terms, units are affordable to households at about the median for urban Malaysia. But because of the higher incomes in Kuala Lumpur and other large cities, the units in those areas are affordable to households at about the 30th percentile.

4.41 Site Selection. When the cost of land is not subsidized, the fixed sales price encourages developers to use inexpensive land, which generally means undesirable locations and results in low economic returns as measured by the market value of the completed unit.

4.42 Production Incentives. Table 4.4 and accompanying Figure 6 indicate that production incentives are also distorted by location. In Kuala Lumpur, the unit is an efficient use of society's resources (the market price of

M$50,000 is greater than the economic cost of the unit at M$36,100), but the fixed sales price requires the developer to sell at a loss of M$18,425. As discussed above, developers will only build such units when this is required to obtain approval of other, profitable investments.

4.43 Figure 6 shows that in this example, all three developers incur losses. But even more perversely, the financial losses decline as the economic desirability of such development becomes less favorable. In the small city, the economic cost of M$24,100 exceeds benefits of M$20,000 (a net loss of some M$4,100) but the developer's loss is only sixty percent of the loss suffered by the developer building the economically efficient unit in Kuala Lumpur (worth about M$14,000 more than the value of the resources used to build it). This does not mean that houses should be built only in Kuala Lumpur, but that efficient use of society's resources will require more flexibility in output and pricing.

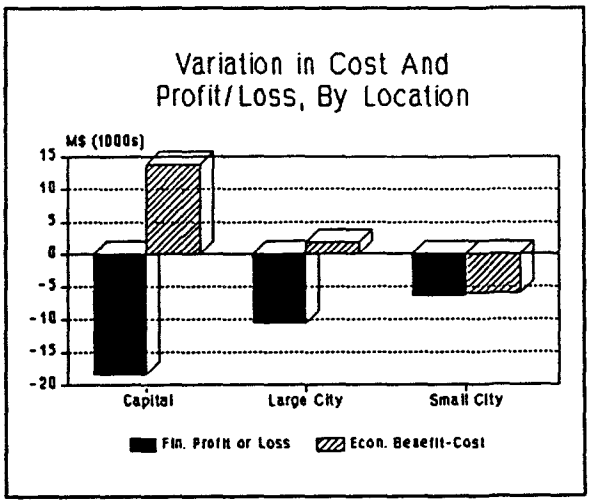

Figure 6

4.44 Recommendation. Although, from a production point of view, it would be ideal to obtain the full market value of newly constructed low-cost housing, this would probably be politically unacceptable. It is therefore recommended that the pricing policy for low-cost housing be changed to allow administered prices to vary with location on the basis of market values. Table 4.5 presents some hypothetical outcomes applying a flexible pricing strategy. In this case, several indexes or measures of project performance are more similar from place to place. Subsidies are similar in all three locations, in the range of M$5,000 to M$8,000. While there is greater variation in affordability at current terms, there is a much closer correspondence between affordability at current and at market terms; therefore, there is less divergence between who the units are targeted to and who is likely to actually receive them.[18/]

18. Experience in other countries suggests that when heavily subsidized, very high quality units are sold to lower-income households, one or more of three undesirable outcomes is observed. First, high income households will have strong incentives to misrepresent their income or otherwise find their way into the program; or at least, the costs of ensuring compliance with income cutoffs is high. Second, if the units are initially successfully targeted to low-income households, these families will sell out or sublet to upper-income households. This leaves them better off -- but it is an extremely inefficient method of income redistribution. Third, if households are successfully prevented from reselling or subletting, their welfare is correspondingly reduced.

Table 4.5: Counterexample of Program with Flexible Pricing

	Capital	Lg. City	Sm. City
Benefit to Purchaser			
Market Price	$50,000	$30,000	$20,000
Less Selling Price	$45,000	$25,000	$12,000
Gross Subsidy to Purchaser	$5,000	$5,000	$8,000
Affordability at Current Terms:	$23,548	$13,082	$6,280
Affordability at Market Terms:	$32,737	$19,642	$13,095
Cost of Production			
Developer's:			
Land and Infrastructure Costs	($19,950)	($11,950)	($8,200)
Construction Costs	($14,100)	($14,100)	($14,100)
Other Costs/Subsidies	($9,375)	($9,375)	($8,900)
Financial Cost to Developer	($43,425)	($35,425)	($31,200)
Of Which:			
Selling Price	$45,000	$25,000	$12,000
Profit (+) or Direct Subsidy (-)	$1,575	($10,425)	($19,200)
Financial Cost to Developer	($43,425)	($35,425)	($31,200)
Developer Regulatory Costs and Subsidies	$7,325	$7,325	$7,100
Economic Costs	($36,100)	($28,100)	($24,100)

4.45 A change in pricing policies would also greatly improve the correspondence between the signals to developers (their profitability) and the economic desirability of building each unit. In Kuala Lumpur, for example, where construction of a low-cost unit is economically efficient, production would be at least marginally profitable. The largest financial losses would be where production is least economically desirable.

4.46 Clearly, variation in pricing based on market values would reduce current variation in subsidies and production incentives by location, which appear perverse. The recommended pricing policy change, in conjunction with the reduced land-use and infrastructure standards recommended in Chapter 5, would also significantly improve affordability.

E. Housing Regulations and the Private Market

4.47 Currently, and for the foreseeable future, most Malaysian housing will be provided by the private market. Government policies influencing private developers consequently have powerful effects on housing conditions. To capture the effects of some of these policies on private sector housing production, some representative private investments under different regulatory and other conditions are analyzed here, using the present value framework described above.

4.48 Figure 7, derived for data in Table 4.6, summarizes present value results for four privately developed units. The first three units are exactly alike in all respects except for land-use and infrastructure standards. The first is a privately developed SLCHP unit built on private land (see Table 4.2) according to the high land-use and infrastructure standards currently preferred by local authorities. The second unit is built according to the new lower standards officially authorized by the Government and the third unit is built by a formal sector builder, but in a pre-existing built-up area, hence making use of more existing infrastructure. The fourth example of private development is a squatter unit, built on public land.

4.49 The first three units have the same market value and market values exceed costs, i.e., the units are economically efficient investments. This is also shown in Figure 7. The unit built in a pre-existing built-up area has lower costs by using existing infrastructure, but this would be counterbalanced by the higher cost of buying the serviced land.

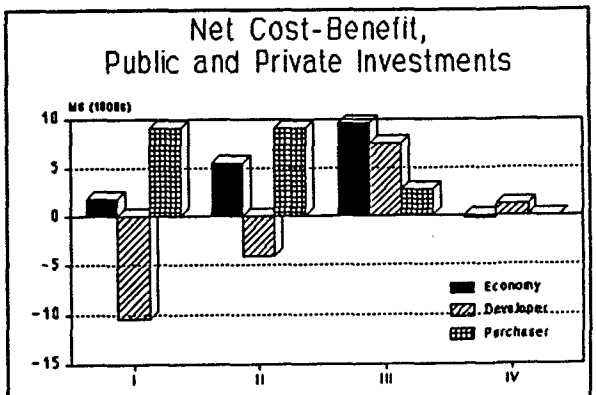

Figure 7

4.50 Even though all three units represent efficient uses of society's resources (market value greater than resource cost), in the first case the additional regulatory cost makes such an investment unprofitable for the developer (M$35,425 is greater than M$25,000). Changing from current to the lower SLCHP standards reduces the regulatory cost by M$3,000 (i.e., M$8,625 to M$5,625) in this example, but the unit remains financially unprofitable. (Chapter 5 shows that profitability could be achieved by improving the efficiency of land use by lowering even the SLCHP standards. This could save an additional M$6,000 or more per unit in such a development.) In both SLCHP units, the benefits to end-users (purchasers) exceed their financial costs by a considerable margin, so demand should be quite strong.

Table 4.6: Comparison of Public and Private Sector Housing Units
(M$)

Program:	SLCHP	SLCHP	Individual	Squatter
Developer:	Private	Private	Private	Informal
Land:	Private	Private	Private	Public
Structure:	Low Cost	Low Cost	Low Cost	Substdrd.
Planning Stds:	Current	SLCHP	N.A.	Unplanned
OVERALL COSTS AND BENEFITS:				
Resource Cost to Economy (1)	($28,100)	($24,500)	($20,400)	($5,170)
Current Market Value of Unit (2)	$30,000	$30,000	$30,000	$5,000
NET INCENTIVES AND DISINCENTIVES:				
Land (3)	$600	$360	$0	$1,920
Infrastructure (4)	$2,408	$2,408	$0	$0
Construction Subsidies (5)	$0	$0	$0	$0
Regulatory Costs (6)	($8,625)	($5,625)	($1,250)	($500)
Financing (7)	$4,017	$4,017	$3,962	$0
Taxes (8)	($1,702)	($1,702)	($2,042)	$0
Net Incentives and Disincentives:	($3,302)	($542)	$670	$1,420
COSTS AND BENEFITS TO EACH MARKET PARTICIPANT:				
Financial Cost to Developer (9)	($35,425)	($29,065)	($22,550)	($3,750)
Financial Benefit to Developer (10)	$25,000	$25,000	$30,000	$5,000
Financial Cost to End User (11)	($25,951)	($25,951)	($31,142)	($5,000)
Financial Benefit to End User (12)	$34,974	$34,974	$33,962	$5,000
AFFORDABILITY:				
Current Selling Price of Unit:	$25,000	$25,000	$30,000	$5,000
Affordable at an Annual Income of:	$11,603	$11,603	$14,266	$0
Market Price of Unit:	$30,000	$30,000	$30,000	$5,000
Affordable at an Annual Income of:	$16,030	$16,030	$16,953	$2,672

4.51 The third type of units are assumed to be privately built by individuals in pre-existing developments outside the SLCHP which are free from many regulatory costs.[19/] They are also assumed to be free from pricing regulations, i.e., it is sold at market prices. The benefits to individual developers exceed their financial costs (M$22,550 is less than M$30,000), so it is profitable for them to build such units. The builder of the individual unit captures more of the benefit for himself, in part because he can charge the market price, not the controlled price of M$25,000.

19. Regulation may have imposed costs on the original developer of the area, but these are treated as sunk costs in this analysis.

4.52 For the representative squatter unit, the resource cost to the economy exceeds the value of the benefits, but because the builder appropriates free land, has low infrastructure costs, and does not pay taxes, the builder's financial cost is lower than the current market valuation of M$5,000. According to demand assumptions, squatter units are affordable by very low-income Malaysians.[20] In fact, because of the lack of middle-income formal production, many Malaysians well above the modest income of M$3,000 will be observed living in these units.

4.53 Taken together, Tables 4.2 and 4.6 highlight the fact that formal private developers are constrained relative to the informal sector more by regulation than helped by lower prices on government land, even when such land is made available. Even with subsidized land and efficient private builders, the SLCHP units are still not affordable by many Malaysians, although they are an improvement in the sense that they have reduced the cost of terrace houses. Squatter units are very cheap, but are not necessarily an efficient use of scarce resources (market value is less than the true economic cost of the unit). It is apparent, given the low prices and low quality of squatter units and the high costs of the supposedly low-cost units, that there is a large potential market currently imperfectly served by both the formal and informal sectors. It is this market segment that Chapter 5 addresses.

F. Summary

4.54 This chapter sought to examine what role Government interventions, policies and public programs played in the housing market. The instrument of public intervention in the housing market is measured as a subsidy or an imposed cost (tax) in the model used in the chapter. The methodology focuses on quantifying the impact of these interventions in the actual combinations in which they appear in the market. The analysis also groups these subsidies and costs to identify the incentives for housing suppliers, home buyers and public agencies involved in the process of housing construction.

4.55 The conclusion is that subsidies are deep but are ineffective in reducing costs or stimulating more low-cost housing production because they are offset by high regulatory costs and perverse incentives. The main subsidies are publicly supplied land, reduced infrastructure costs and below-market financing. In terms of magnitude, the largest subsidy in many publicly developed units is free or nominally priced land. The chief extra-regulatory costs are an unusually extensive, complicated and time-consuming regulatory system, allocation procedures which delay projects, the risk created by unfair competition from public developers, and high standards for land-use planning and infrastructure.

4.56 The chapter has shown that the incentives to producers are systematically biased in an manner which makes lower-cost units less profitable. These policy- and program-induced incentives largely determine

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20. Applying these assumptions is at best a very rough guide; in particular, financing will not be available, so ability to purchase will be constrained by the household's current assets.

what is produced which may, according to the analysis presented here, often be in conflict with what is economically desirable. From the point of view of consumers, the strongest demand is likely to be for the units with the largest subsidy to buyers, which again may conflict with financial profitability from the point of view of developers, economic rationality for the society, or both.

4.57 The equity implication of this analysis is that, despite large transfers to buyers through the housing sector, the distribution of subsidies is not related to any program goals or policies. In fact, to the extent that beneficiaries can be identified, the incidence is regressive, with a relatively small number of middle- and even upper-income Malaysians receiving large windfalls. Problems with the incentives and disincentives in the present programs and policies should be addressed on two fronts.

4.58 First, an explicit consideration of subsidy policy would be appropriate. Without specifying the mechanism, agreement should be reached on the purpose, level and target recipients for housing subsidies. Once that essentially political task is settled, a number of measures should be introduced to help implement the policy. The most important one is to set variable prices for low-cost units to take into account the large variations in subsidy created by substantial differences in the market values of the units throughout the country. This measure would also assist in making the economic and financial characteristics of a project more consistent by raising developer return in line with economic benefits. Agreed "best efforts" standards for allocation rules could also reduce costs. Savings from changes to land-use and planning regulations suggested in the next chapter can be thought of as a substitute for subsidies.

4.59 A second major area for reform of policies concerns the need to clarify the role of the public sector in the housing market. There is an element of "unfair" competition with the private sector but that seems less a threat to private developers than is the danger that high regulatory costs will keep private developers out of public programs and perhaps even out of the lower, more regulated, end of the market. The high cost of regulation in its present structure not only discriminates against private participation in the public programs but gives the informal market, squatting, such a large cost advantage over the cheapest formal production that no regular housing can be built to fill the gap. In support of reforms to lower regulatory costs to improve the private sector's ability to deliver low-cost housing (and to reduce costs), direct public sector involvement in this area should be eliminated or differential treatment of private and public developers curtailed. An important step is thus to make adjustments to incentives for the production of low-cost housing so that they are neutral in respect to public-private developers, as well as to project scale, location, and house value.

4.60 To review, this chapter began with several questions; their answers, in brief, are as follows:

- Are housing policies and public programs having a significant effect on prices and output in the sector?

  Yes. In particular, some regulations -- particularly those related to land use -- impose large costs on developers without any corresponding benefits to developers <u>or purchasers</u>. This constrains supply. At the same time, purchasers in some programs get large benefits -- especially low-cost financing and below market sales prices -- which pump up demand.

- What are the major subsidies, costs and risks associated with policies and programs? Who pays them?

  The major subsidies are finance and the sales price discount (through the controlled price). They currently seem to be borne by financial institutions and developers respectively. But in the longer run, financial subsidies will be borne by all users of capital, to the extent that interest rates elsewhere will be higher to pay this implicit tax. Also in the long run, at least some portion of the sales price discount will be passed on to other house purchasers not under controls.

  The major regulatory costs include land-use and other developmental regulations which drive up the cost of housing for Malaysian buyers. In addition to the observed increase in the cost of houses built, additional "costs" are imposed on the society in the sense that an unknown number of houses are <u>not</u> built because of the regulations, increasing overcrowding and squatting (to an unknown extent).

- Are the mechanism(s) by which these are transmitted to economic actors (e.g., developers, purchasers, landlords, tenants) transparent?

  In general the mechanisms are not at all transparent. Individual regulatory costs are rarely quantified, and almost never added up. Many are imposed by planners and others who are well meaning but are not currently aware of the large costs these regulations impose.

- What is the extent and level of these costs and subsidies?

  In the units studied, individual costs and subsidies can be on the order of one third of a unit's market value, or equivalent to about a year's income for a typical Malaysian.

  Finance and land subsidies can be deep (large when they occur) but not so wide (only selected households receive them). Regulatory costs are not only deep but also wide: they affect the majority of urban Malaysian households, directly or indirectly, including those <u>not</u> living in the (legal) units costing less than M$25,000 which are <u>not</u> being built.

- What incentives are created for housing suppliers and buyers?

  Given current rigidities, when a developer does obtain planning permission he/she maximizes profit subject to the regulations by building as few low-cost units as possible, and more medium and high cost units.[21] Buyers in favorable locations -- especially the capital -- are eager to purchase units at the standard price of M$25,000, but buyers in smaller cities and towns, and other outlying areas, face quite different incentives, leading to marketing problems.

- Are social equity objectives served by the present system?

  Equity is difficult to evaluate because it involves some value judgement, but the present system confers fairly large benefits on households in the programs in favorable locations, while everyone suffers to a greater or lesser extent from the regulatory environment. Housing costs appear to be high in relation to income at all income levels.

- What adjustments should be made?

  Regulatory standards should be lowered. To anticipate Chapter 5, a way must be found to give local authorities more of a stake in promoting more appropriate standards. In many cases they appear reluctant to apply even existing low-cost standards.

  Flexible designs and pricing could improve the efficiency and equity of the SLCHP.

  Further study of specific regulations, housing finance, and land policies could lead to even more specific recommendations. Such work would ideally not be a one-time exercise but become embedded in the policy process.

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21. This has resulted in some saturation at the high end of the market, as noted above, especially in Chapter 3.

5. STANDARDS AND SELECTED REGULATORY PRACTICES

A. Introduction

5.1 The supply of housing, and particularly the supply of low-cost housing, has been significantly affected by the physical standards and practices in use in the sector, such as the building code and land-use regulations. This chapter analyzes which particular design parameters have the largest impact on costs and ultimately on developers' profitability and suggests how the standards and practices should be revised. In addition to recommending a specific set of changes to the standards, the chapter estimates the cost savings and effect on housing output associated with implementing the proposed revisions. Since standards are established at the Federal level in Malaysia, but enforcement is a local authority responsibility, the chapter also explores what measures could encourage local authorities to modify their implementation practices.

5.2 The general approach taken here is to analyze all of the principal design parameters in a comprehensive and integrated framework. Standards are normally established on the basis of an abstract minimum "need" for each service or facility, and each regulation or standard seems reasonable considering only the narrow purpose or specific objective to which it is addressed. However, it will be shown that the standards often have an unintended effect on other project characteristics, such as scale, which may result in costly distortions. Taken together, all of the standards have a significant cumulative influence on costs which necessitates explicit consideration of the trade-offs involved. Thus, standards are important determinants of the type and location of housing ultimately produced.

B. Why Land-use is an Important Issue

5.3 Land development standards, as presently enforced by local authorities, constitute one of the major constraints encountered by developers in responding to the demand for low-cost housing. This is the general opinion of public and private developers, architects, planners, and government officials. Land-use analysis of low-cost residential projects (developed by private and public developers) shows that some standards and practices verge on the extravagant. For instance, the area per household provided for roads is up to four times larger than the area for roads in projects in other countries of Asia, Europe and America for a similar range of plot size (Figure 5.1). Using international practice as a yardstick, it appears that about 25% of the land developed for residential purpose is wasted. This waste is due in large part to excessive road areas, arbitrary setback regulations, and in lesser part to redundant community facilities.

5.4 Wastage of such a magnitude is a serious issue, as it not only results in higher housing costs, but also contributes, in the long run, to a reduction in the supply of land and, consequently, to an escalation of land prices. Additionally, it reduces densities and, therefore, increases the cost per dwelling of providing and maintaining infrastructure. Indirectly, lower

5.5 In analyzing how land-use standards affect the cost and the supply of low-income housing, a distinction should be made between (a) land-use standards, (b) infrastructure engineering practices, and (c) house design standards. Depending on location, land and infrastructure costs represent between 45% and 60% of the total cost of a low-cost unit (Table 5.1). Adjustments in both land-use standards and in engineering practices would significantly reduce costs and increase the supply of low-income housing with little reduction in the benefits to users, as discussed below. Housing design standards, by contrast, seem to be quite well adapted to consumer tastes and local building costs and provide, in general, an efficient use of space and building materials. While national policies which raise the price of building materials may also affect the cost of low-cost housing, these involve broader issues of economic policy which are beyond the scope of this report.

C. Effects of Standards on Low-Income Housing Supply

5.6 Under present conditions[1/], the public and private sectors are able to provide units below the M$25,000 official ceiling for low-income housing only in areas where the land cost is low (between M$10 and M$20 per sq.m.). However, most of the demand for low-income units is in more centrally located areas where the price of land is between M$20 and M$60 per sq.m.[2/] The present land-use practice implies that about 170 sq.m. of raw land is required to develop the minimum plot of 68 sq.m. At least one third less or about 110 sq.m. would be sufficient if land-use standards were in line with those used outside Malaysia.[3/] In other words, the land-use standards are precluding densities above 60 plots per hectare (densities of existing schemes are in general even lower as many plots are above the minimum sizes) where densities of about 90 plots per hectare are common in other countries for projects with similar minimum plot sizes as those used in Malaysia.

5.7 Since the standards, and implementation practices, require a relatively large quantity of land and substantial expenditure for infrastructure per housing unit, the cost of land becomes the main determinant of site selection for lower-priced housing projects. Areas where the cost of land is low enough to make such developments financially viable tend to be remote. As a result, private developers are inclined to increase space and finish standards in response to what they perceive to be weak demand for low-cost, higher-density housing in those less convenient locations. Although building costs and recently revised land-use standards would permit considerably cheaper units, it is unusual to find many units for sale for much less than the M$25,000 regulated ceiling

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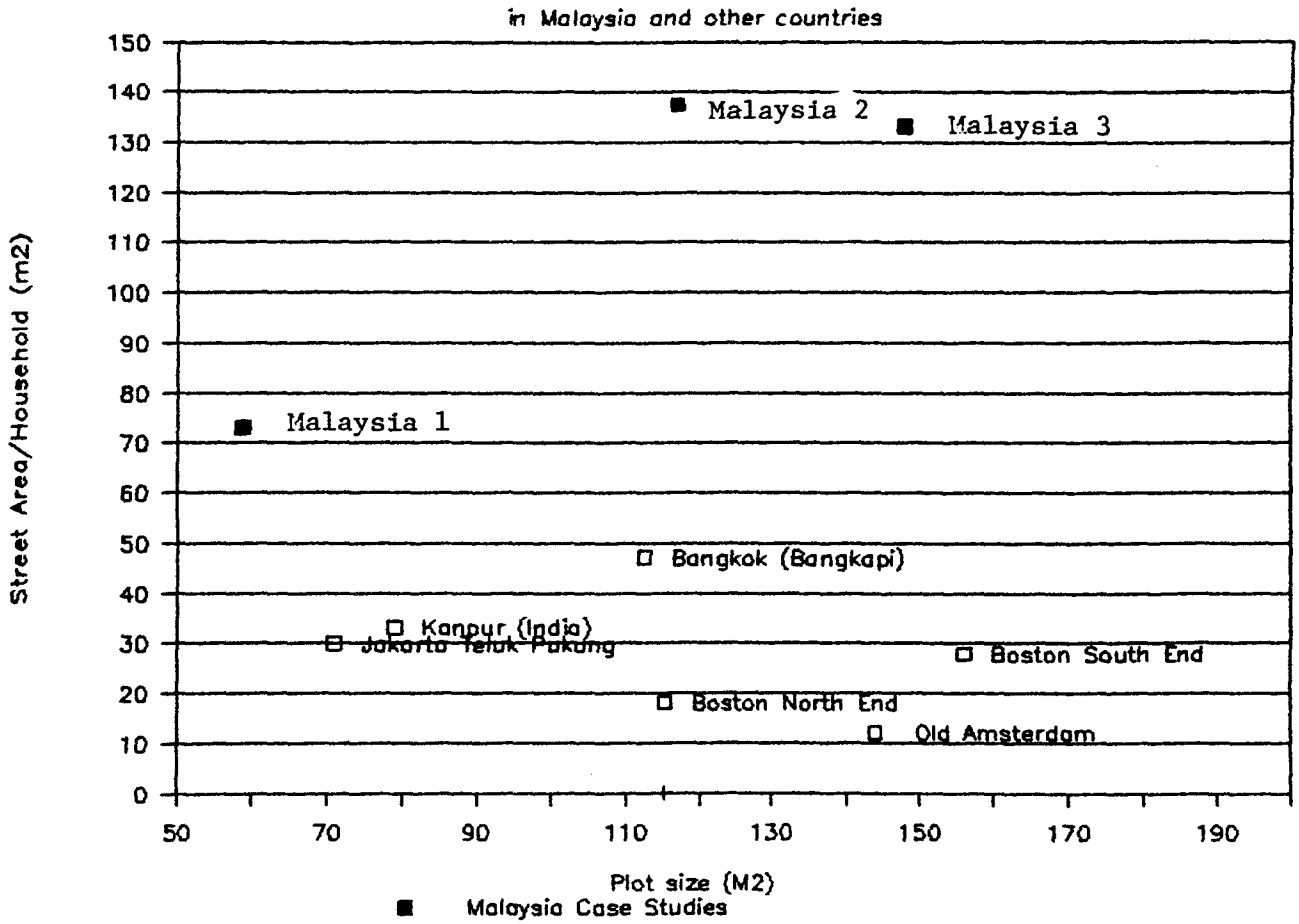
1. The minimum standards established by SLCHP guidelines are rarely used in practice because authorities are reluctant to adopt them. If the SLCHP minimum plot size and floor space were used, it would be possible to provide low-income plots in areas where land cost around M$60 sq.m. as explained in para. 5.17. While developers are currently supplying units at the ceiling price of M$25,000, they tend to use larger plots and larger floor areas than the minimum allowed by the guidelines (see example in Table 5.1).

2. Land cost includes the land purchase price, land-use conversion premium, and contribution fee for off-site infrastructure. Malaysia does not have a land-price map. The numbers reported here were supplied to the Bank mission by public and private sources.

3. In Indonesia, for instance, the public mortgage bank (BTN) would not finance plots in developments where the salable area is less than 60% of the total area. This would correspond to a raw land area of 113 sq.m. for a minimum plot of 68 sq.m.

price. Table 5.1 illustrates how developers do not necessarily avail themselves of the lower plot, floor area and construction standards permissible. In the private sector scheme of Table 5.1, the house construction cost is M$219 per sq.m. This corresponds to a much higher standard of construction than the M$154 per sq.m. used by public developers, and reflects the perception of what "will sell" in the particular location where the project is situated. If the private developer in this specific case had not felt a demand constraint, he would have used the lower standards permissible (plot size, floor area and construction costs) and increased his margin by charging the ceiling price.

Figure 5-1: Plot Size & Street Area per Household



5.8 Private developers are reluctant to move to higher-priced land under the present land-use legislation (a) because for every additional dollar paid for raw land they would have to reduce floor space to stay under the M$25,000 cost ceiling, and (b) because their profits are directly linked to the amount of floor space built per unit of land (see developer profit analysis in para. 5.26). The public sector, on the other hand, is responding to different financial incentives. It selects sites where land is available at lower cost or where it is already in government hands. The public sector is better able than the private sector to sustain the financial cost implied by the slow sales or large inventories of plots in distant locations where demand is sluggish. The various subsidies in public sector housing allow a certain disregard for consumers' preferences. The equivalent inattention to demand characteristics would be fatal for a private firm.[4/]

5.9 Any revision of land-use standards should not aim at reducing costs by indiscriminantly changing all standards. The revisions should be designed to increase the supply of low-cost units by responding, as closely as possible, to market preferences and by removing the cost distortions created by some of the legal minimum standards. The removal of those distortions would have the effect of stimulating developers to produce more low-income plots where the demand is the greatest and not necessarily where land is the cheapest.[5/]

5.10 If land-use standards were revised, private developers would likely build more units below the M$25,000 ceiling because: (a) they would be able to develop land in more expensive areas where the demand for low-cost housing is greater; (b) they would be able to build a larger area of floor space per unit of land and therefore make more profits.[6/] The present land-use practices, penalize small plots, but, as discussed below, some adjustments of key land-use parameters could make small plots more profitable to developers than larger plots.[7/] Developers will use the new standards for low-cost housing when (a) those standards allow the highest return possible per unit of land, and (b) when the "housing bundle" corresponds to the perceived demand in that location, and therefore reduces the risk of slow sales or large inventories.

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4. In addition to the superior financial ability of the public sector builders to hold inventory, the objectives and incentives facing managers may be quite different in the public and private sectors. Many public programs are judged on an output or "need fulfilling" basis and poor sales can be dismissed as a problem of affordability on the part of those who really need the housing. No private developer could stay in business on this basis.

5. For example, while it is clear that buyers highly value interior floor-space, additional setback on corner lots or extra wide back-alleys may have little utility. The most efficient and responsive supply of housing will occur when developers are able to make trade-offs among a number of standards to meet the mix they perceive is wanted by buyers. In such circumstances, one would expect the developer to be rewarded by quick sale and good return on the project.

6. Most of the developer's margin is in house construction because this is the area where production is repetitive and where small investments in tools, equipment and site management bring the most gains in productivity.

7. For instance, if the percentage of salable area were increased from 40% to 60% by suppressing redundant roads, 88 houses instead of 59 could be built on an area of 1 hectare; assuming a M$30 margin on a sq.m. of construction (about 15% of the cost) and a standard 60 sq.m. house, the profit per hectare of land developed would be M$158,000 as compared to M$106,000 under the present practice, or an increase of about 50% in profit. This increase in profitability is not achieved at the expense of the consumer, only redundant road space is suppressed.

5.11 A further reduction in cost could be achieved by increasing the design efficiency of site plans. Even under the present legislation, better land-use efficiency could be achieved by more judicious use of land and locational pricing methods. Many existing schemes are showing a lack of site planner "tradecraft". Most builders have developed efficient designs for house plans and construction but site planning efficiency itself seems to be often neglected. A number of design practices show a lack of concern for land-use efficiency. For instance: the use of short blocks and of streets serving access on only one side, the practice of having differently priced plots on both sides of the same street, the location and access of commercial plots, etc. Bad site design habits were probably formed in the past when land was perceived as cheap and plentiful, but they now result in additional costs with no corresponding benefits. The Town and Country Planning Department and the National Housing Department (JPN) have experimented with better site plan designs and have demonstrated that under the present rules it is possible to use land in a more efficient manner than is the current practice. However, those better designs are isolated cases and seem so far to have had little impact on the overall quality of site plans.

5.12 The minimum floor space (42 sq.m.) and minimum plot area (68 sq.m.) in the new government guidelines on low-cost housing standards (i.e., the SLCHP standards, Table 5.2) seem appropriate for Malaysia. The new standards, floor space and plot area, are not much above the encountered in informal squatter settlements. Any further reduction of those standards would result in an obvious reduction in the quality of life of low-income households. However, the new land-use standards (other than floor space and plot area) and infrastructure design standards could be further reduced without any loss to households. Such a revision of standards would require the agreement of the local authorities since they are ultimately responsible for issuing land subdivision and building permits, and, of course, for infrastructure maintenance, the cost of which is directly affected by engineering standards. Keeping constant the current house design standards and the current minimum plot size (68 sq.m.), it would be possible to provide a unit below M$25,000 even in high-cost land areas (Figure 5.2), provided the following conditions were met:

(a) land-use standards were adjusted to reflect more closely the priorities of the target population;

(b) local authorities agreed to issue permits for schemes which conformed with the new standards;

(c) local authorities modified infrastructure engineering practices to recognize some trade-off between capital and maintenance costs; and

(d) developers and site planners improved site design methods and land pricing practices.

Examples of possible trade-offs among land-use parameters which would reduce cost while improving the profitability of supplying low-cost plots are provided in paragraph 5.26 and further developed in Annex 3.

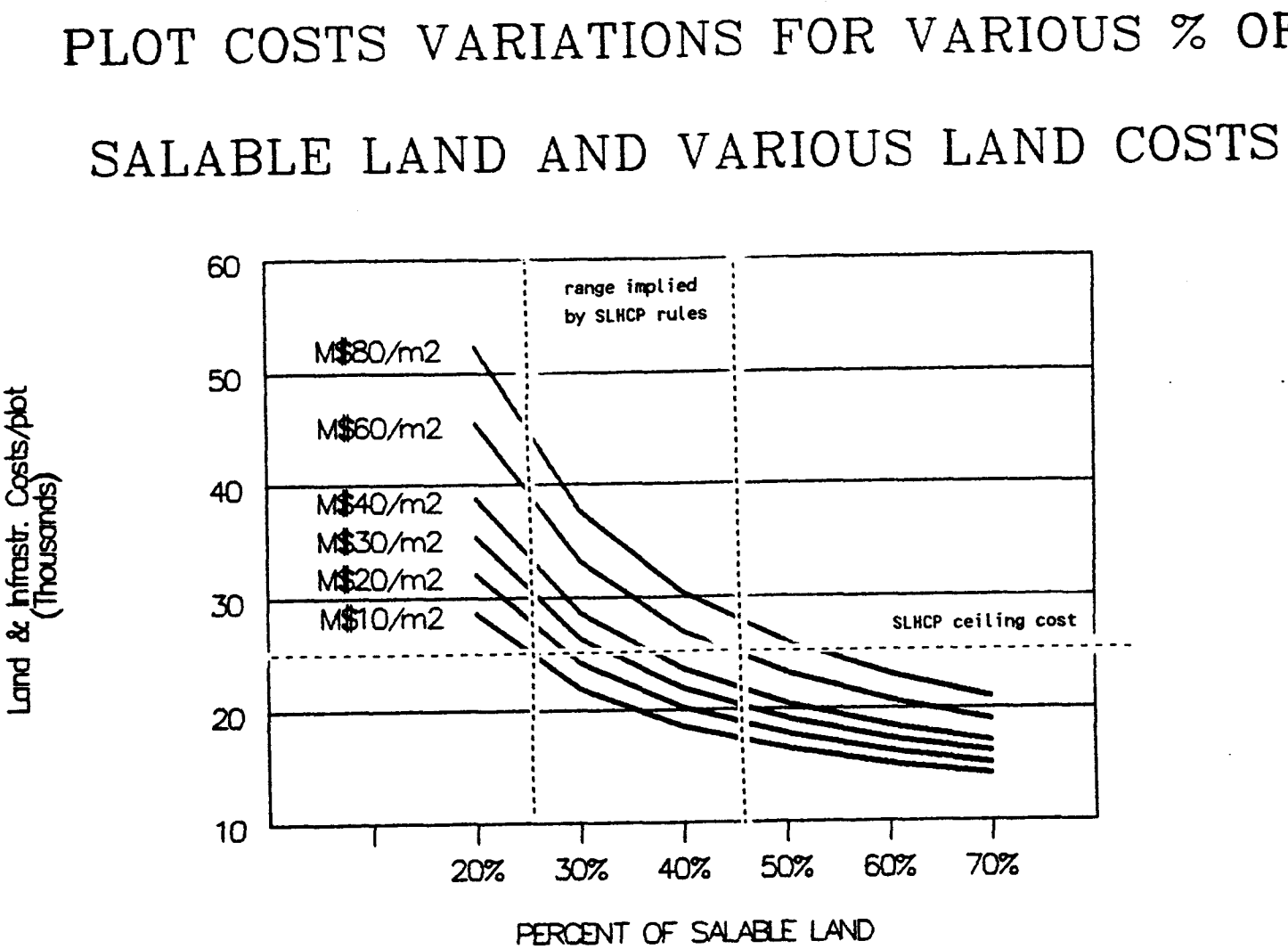
Table 5.1: Typical Building and Land Development Costs

	Total Costs per Dwelling	Unit Costs Indicators	Design Indicators	Minimum Standards Allowed
House Construction Cost	13,635 M$	54.54%		
Floor area			62.2 m2	41.81 m2
Cost/m2		219 $/m2		
Land Cost	2,732 M$	10.93%		
Area of smaller plot			84 m2	67.63 m2
% salable			43.93% _1/	
Land area/plot			190 m2	
Cost per net M2		33 $/m2		
Cost per Gross M2		14 $/m2		
Infrastructure Cost	8,633 M$	34.53%		
Cost per net m2		103 $/m2		
Cost per Gross m2		45 $/m2		
Total Development Cost	11,365 M$	45.46% (land +infrastructure)		
Cost per net m2		136 $/m2		
Cost per Gross m2		60 $/m2		
Total per Dwelling Unit	25,000 M$	100.00%		

Sources:
Private Sector Residential Project in Klang (Selangor State).
Sale Price per Unit is the one advertised by the developer in mid 1987

_1/ the percentage of salable area corresponds to the percentage of the whole scheme which contains also larger plots. If the plots were all minimum plots this percentage would be lower.

Figure 5-2: Plot Cost Variations



D. Land-Use Standards of the Special Low Cost Housing Program

5.13 When the Special Low Cost Housing Program was launched at the end of 1986, it was acknowledged that the existing land-use standards made it difficult to reach the M$25,000 per dwelling target envisaged in the program. As a result, the Ministry of Housing and Local Government (MHLG) then prepared guidelines which should have been used by local authorities for the approval of schemes constructed under the SLCHP. The new guidelines contain provisions to (a) streamline the land development approval process, and (b) reduce minimum standards to make them more affordable. In particular, the new guidelines have established the minimum plot size at 68 sq.m. and the minimum floor space at 42 sq.m. Service back lanes have been reduced to 4.5 m. However, a number of road standards and set-back regulations appear to be still too costly in comparison with the benefits they are supposed to bring. The new guidelines and their cost implications are reviewed in detail in Annex 3.

5.14 The local authorities, up to now, have been reluctant to follow the guidelines, and most of the site plans which were prepared under the new rules have been rejected. Under Malaysian law, housing matters and land-use control are strictly a state and local authority responsibility and there is no direct legal mechanism to enforce the new guidelines drafted by MHLG. However, there are a number of reasons why local authorities may wish to adopt modified standards.

5.15 The local authorities' reluctance to allow the standards suggested under the new MHLG guidelines can be explained by the following factors:

(a) Many local authorities may not accord high priority to the provision of low-income housing in their territory. Maintaining high local land development standards is often considered to be in the best interests of the local community. The subsequent growth of squatter settlements within the local authority boundary may be perceived as a law enforcement problem rather than the direct consequence of a lack of affordable land development standards;

(b) Lowering road standards would result in a loss of Federal grant money. Local authorities receive a grant from the Federal Government for road maintenance. The amount of the grant is based on the length of streets for any right of way wider than 30 feet or a pavement wider than 20 feet. This grant is fungible and does not have to be spent on road maintenance, hence it is an attractive local source of income. When a new area is being developed, the local authority has a strong vested interest in ensuring a maximum length of streets that are at least 30 feet wide. This financial incentive may partially explain the excessive amount of street space encountered in residential projects in Malaysia as illustrated by Figure 5.1.

(c) From the local authority's point of view, any amount of capital cost (spent by the developer) is justified to reduce maintenance cost (borne by the local authority). Local authorities have a strong incentive to reduce maintenance costs of infrastructure to a minimum, even if to do so requires a disproportionate capital expenditure. For instance, local authorities often require that service back-lanes be designed to handle truck traffic. This practice is a typical example of unreasonable trade-off between maintenance and capital costs. The mandatory service back-lane alone is using about 10% of the residential land in a typical site (see Annex 3 for the sensitivity of various standards).

(d) Several additional administrative bottlenecks are increasing the risks to developers and therefore increasing the cost of low-income housing; these are: (i) lack of coordination with the water authority for site connections to the water main; (ii) a complex and time consuming beneficiary selection system which contributes to keeping

a large inventory of completed houses vacant for months,[8] and (iii) uncertainty, arbitrariness and fragmentation of the site plan approval process, which cause delays in construction works, generates additional design costs, and prevents innovation.

E. New Standards for the Special Low Cost Housing Program

5.16 The new guidelines for the SLCHP are a step in the right direction in adjusting Malaysian standards toward more affordable and appropriate levels. For the reasons discussed above, the new standards have not yet been widely or fully applied. However, an analysis of the new standards shows that their implementation, as presently drafted, will not in itself significantly address the reasons for the minimal output of low-income housing. Before additional effort is made to apply them it would be advisable to make further modifications. The new standards contain four major areas of concern: (a) the overall percentage of salable land is too low, (b) the manner by which land for community facilities is provided is inequitable and discourages large, low-income residential developments, (c) the area to be provided for streets and parking is too high, and (d) set-back regulations[9] impose a much too rigid constraint on the use of plots and results in regressive internal cross-subsidies.

5.17 Percentage of Salable Land. The new rules impose maxima or minima on 43 design standards encompassing plot size, set-backs, street dimensions, community facilities, oxidation ponds, etc. (see detailed standards in Annex 3). The cumulative effect of the new standards on land-use in residential area limits the percentage of land which can be sold to a range of from 28% to 47% (Table 5.2). This is far below many residential schemes around the world which have salable areas of from 60% to 70%. The low percentage of salable space in Malaysia causes the total shelter cost to be highly sensitive to the price of land. For instance, using all minimum standards allowed, it would be possible to build a house at a cost below M$25,000 only in areas where the cost of land is less than M$60 per sq.m. (Figure 5.2). But if the percentage of salable land was increased to 65%, it would be possible to build the same house for M$20,000. The low percentage of salable land also reduces the developer's profit margin per unit of land as shown in para. 5.26. The small percentage of salable land is to a large extent due to the excessive amount of street space and to the cost recovery system of community facilities in large-scale projects.

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8. Because of the quota system in plot allocation (para. 3.24), beneficiary selection is not made by the developer but by the local authority. The criteria for selection by the local authority, among those not already owning a house, is based primarily on ethnic origin rather than credit worthiness. The list of beneficiaries provided by the local authority has commonly to be revised several times when the mortgage bank rejects candidates because they fail to meet credit criteria. The increase in interest cost during construction incurred because of delays in plot allocation can become a significant part of the final cost to the developer, and discourage him from producing more units subject to allocation quotas.

9. Set-back regulations restrict the use of land on an individual plot by not allowing construction within a fixed distance from the property line. When plots are small, below 200 sq.m., the constraints created by set-back regulations are important. For instance, under the new guidelines, only 57% of the total minimum plot area is usable for construction. In the case of corner plots, this percentage is further reduced to 27%.

5.18 Provision of Community Facilities. The percentage of land allocated to community facilities, the cost of which must be recovered from households, is different for large-scale and small-scale projects (Table 5.2) because certain types of community facilities have to be provided by the developer only when a population threshold is reached. For instance, a primary school must be provided in schemes with populations of over 5,000 persons. Each one of the nine types of community facility required has its own threshold. These relatively simple arithmetic rules create a number of distortions in the cost of developed land and in the provision of community facilities themselves. Under these rules, if a given area is developed through a number of small schemes, below about 500 plots each, the land to be used for community facilities would be purchased by the local authority using general taxation revenue. If the same area is developed through a few large residential schemes, about 2,000 plots per scheme, the cost of land for community facilities will be borne by the developer and therefore passed on directly to the future plot owners in the initial price of the dwelling.

5.19 This system, although common in the land-use legislation of many countries, has two major drawbacks: (a) it distorts the price of land development, as the unit cost of developed land in a large scheme would appear higher than in a small scheme; and (b) it makes the source of financing of land for community facilities dependent on the scale of residential schemes. For a given area developed at a fixed population density, if the schemes are small, the local authority will have to use its own resources to finance community facilities; if the schemes are large, the cost of community facilities would be recovered directly from the plot buyers through increased development costs. Developers therefore tend to avoid large developments to stay below the threshold where community facilities have to be provided. This leaves the local authorities with the burden of finding other sources of financing. The low standards for primary schools found in urban areas, where 50 or even 60 children per classroom are common, shows that the local authorities have difficulties in finding adequate alternative resources to build community facilities.

5.20 The provision of community facilities based on population thresholds tends also to discourage developers from providing small plots. For a given piece of land, the smaller the plot size, the higher would be the density, and as a consequence the larger would be the requirements for community facilities, therefore the lower will be the amount of salable area. In considering alternative site plans, a developer would have a strong incentive to select an alternative with larger plots because it would lower the density and would keep the size of the scheme below the most expensive community threshold standards.

TABLE 5.2: SUMMARY LAND USE OF A RESIDENTIAL SCHEME USING SPECIAL LOW-COST HOUSING PROGRAMME GUIDELINES

A. PLOT SIZES	1 Floor	2 Floors	
Minimum Plot Size	81.75	67.63	m2
Minim. Size of Corner Plots (facing streets on 2 sides)	158.40	140.10	m2
B. FLOOR SPACE			
Minimum Floor Space	41.81	41.81	m2
Maximum Floor Space allowed on minim.plots	48.31	76.74	m2

Size of Development:	Large Scale		Small Scale	
	1 Floor	2 Floors	1 Floor	2 Floors
C. LAND USE				
Area of minimum plots	20.52%	18.78%	34.56%	33.57%
Area of corner plots	7.23%	5.98%	12.18%	10.70%
Total Residential	27.75%	24.76%	46.74%	44.26%
Religious facilities	5.39%	5.82%	3.66%	4.20%
Kind., Playl. & Playgrounds	9.57%	10.34%	4.40%	5.04%
Community Hall	8.70%	9.40%	0.00%	0.00%
Schools	14.62%	15.79%	0.00%	0.00%
Oxydation ponds	3.44%	3.71%	5.79%	6.64%
Parking	1.10%	1.19%	1.86%	2.13%
Streets and footpaths	29.42%	28.99%	37.55%	37.73%
TOTAL	100.00%	100.00%	100.00%	100.00%
D. LAND USE INDICATORS				
Minimum plots/ha	25	28	42	50
Corner plots/ha	5	4	8	8
Number of Plots/ha	30	32	50	57
Floor Area Ratio (FAR) (with minimum floor space)	0.12	0.13	0.21	0.24
Population density 5 person/hh	148	160 p/ha	250	286 p/ha

Note: The land use table correspond to a site layout where all plots are minimum plots or minimum corner plots. If plots of a larger size were mixed, the land use percentages would be different.

5.21 High Percentage of Street Area. The percentage of street area for small-scale development, around 38%, is very high. This high percentage reflects an exaggerated concern for vehicular traffic within residential areas. The careful design of intersections between residential access roads and arterial roads is a more effective way to improve traffic safety and speed than the enlargement of all residential streets. In some residential developments in Malaysia, speed breakers have to be provided to reduce the speed of vehicles which is permitted by the excessive width of residential streets. The use of service streets at the back of every plot also significantly enlarges the percentage of street area.[10/] The cost of redundant street area is very high, as it has the triple effect of consuming additional land, increasing civil works cost, and increasing the speed and quantity of storm water run-off, thus requiring higher design standards for the whole downstream drainage network.

5.22 The Effect of Set-back Regulations. A number of set-back regulations[11/] which are part of the new guidelines tend to increase the cost of development for low-income plots (Figure 5.3). Set-back requirements of 4.5 m. along vehicular roads when applied to the minimum plot size of 67 sq.m. imply that corner plots would have an area of at least 140 sq.m. However, because of set-back regulations, only 38 sq.m. of the total 140 sq.m. of the corner plots are buildable. Because of this restriction on the buildable area, the market value of corner plots is hardly more than the value of an ordinary plot half its size. With the area of corner plots usually representing about 20% of the total salable area and the sales price of these plots only about half the market value of a similar quantity of residential land not subject to the set-back rules, the current regulations result in a significant loss of potential revenues. This loss is spread among all plots and results in an internal cross-subsidy flowing from the minimum plots to the larger corner plots (Table 5.3). Set-back regulations, when applied to small low-income plots, reduce design flexibility and thus may prevent developers from responding to consumer preferences. For instance, under the current set-back rules, a minimum plot of 68 sq.m. would allow a buildable area of 37 sq.m. (54%) when it is 4 m. wide, but this same buildable area would be reduced to 25 sq.m. (37%) when the same plot is 6 m. wide. The set back regulations therefore are implicitly discouraging developers from exploring the best possible alternative plot design to meet households preferences.

F. Key Parameters to be Considered in Revising Standards

5.23 Standards should be designed to insure a responsive supply. One of the key considerations in revising standards for low-income housing is to insure that the standards selected would be compatible with a responsive and smooth housing delivery system. The legislator's intention in establishing minimum standards is to protect the consumer and the community. However, when standards

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10. A 5 m. wide back lane increases the road area by about 10%, a 3 m. back lane by 7%. Local authorities often require up to a 20 feet (6 m.) back lane. In residential development in the United States where a back lane is sometimes used, its width is usually around 2.6 m.

11. Set-back regulations originated in nineteenth century Europe out of concern for the provision of sunlight to residential buildings along narrow streets. In the context of low-rise residential projects such as those under consideration in Malaysia, the objectives of set-back regulations are not clear.

are so restrictive that they stifle supply, they cannot possibly benefit the community nor the consumer. The same could be said for demand; if minimum standards are culturally unacceptable or unaffordable to the consumer, no benefits could possibly be derived from them.

5.24 Standards should reflect the financial ability of the community which is going to pay for them. Standards should (a) correspond to the most attractive housing quality/price alternative for the target group, and (b) constitute the best alternative use of land for the developer. When those two requirements are met, it is possible to look for additional trade-offs which would further increase benefits to consumers and society.

5.25 The resulting cost of the total package of standards should be considered. Land-use standards establish geometric rules which are simple when considered individually but complex in the way they interact with each other in determining land development costs.[12] It is difficult to predict the effect of changes in standards on the total cost of development when standards are considered individually. To reform standards, it is therefore necessary to consider the whole range of parameters which are to be regulated. For instance, the 43 parameters controlled by the guidelines should be considered simultaneously. Figure 5.2 and the data presented in Tables 5.2 and 5.3 take all the regulated parameters into account to calculate the effect on cost of changing one or two parameters at a time.

5.26 Standards should be affordable to insure demand, but they should also be compatible with developers' profitability to insure a steady supply. Some land use regulations are often unintentionally increasing the financial incentives to developers to build middle-income rather than low-income housing, thus decreasing the potential supply of low-income housing. Developers will build low-cost housing only when this is the most profitable way of developing the land they have assembled. It is often assumed that low-cost dwelling units necessarily imply low profits, and that developers would produce low-cost housing only when forced to do so through regulations, quotas, compulsory cross subsidies, or direct government subsidies. As shown in the example below, it is possible to revise standards in such a way that both affordability and developer's profitability would be increased. In this example, the adjustment of some land-use standards would simultaneously increase developers' profit by 35% and increase each house floor space by 26%, sale price per dwelling unit and plot size staying constant. This example is not intended to provide a new set of standards which should be applied in Malaysia, it is only intended to illustrate a methodology which could be used to revise standards.

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12. For instance, a service back lane increases circulation area by the sum of its own area plus the area equal to the product of its width by the width of streets perpendicular to it. The development cost of a service back lane is therefore not limited to the cost of providing the back lane, but also includes the increase in cost for land and civil works in adjacent streets.

Figure 5.3: Set-back Regulations Under the Special Low Cost Housing Program

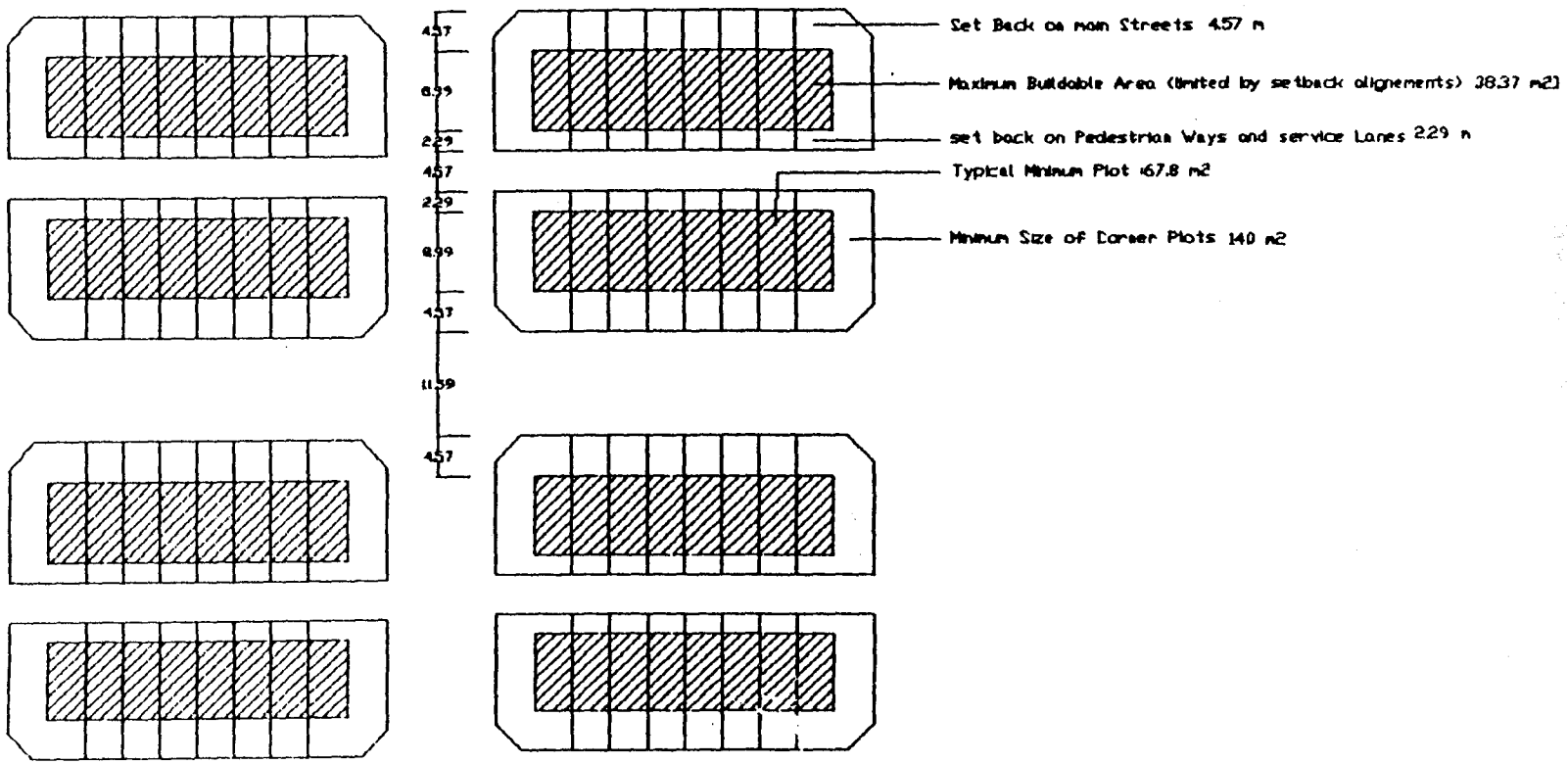


TABLE 5.3: COST OF LAND DEVELOPMENT IMPLIED BY MINIMUM STANDARDS UNDER A SERIE OF UNIT COSTS ASSUMPTIONS

Unit Costs Assumptions:	(M$/m2)
Cost of land	20.00
Land use conversion premium	5.00
Land preparation	12.00
Infrastructure cost	26.00
Contribution for Infrastructure	7.00
Development Cost/gross m2	70.00 M$/m2
Unit Cost of Superstructure	200.00 M$/m2

	Large Scale, 2Floors (M$/m2)	Small Scale, 2 floors (M$/m2)
Percent of Salable land	24.76%	44.26%
Cost per m2 of salable land	283 M$/M2	158 $/M2
Cost of a minimum plot (land+infra)	19,122 M$/plot	10,696 $/plot
Cost of a corner plot	39,610 M$/plot	22,155 $/plot
Total cost of Supertructure:	8,361 M$/house	8,361 $/house
Total Cost of minimum plot:	27,483 M$/plot+house	19,057 $/plot+house
Total cost of Corner plot:	47,971 M$/plot+house	30,517 $/plot+house
Assuming corner plots to be priced	10% above minimum plots:	
Cross subsidy flowing from Minimum Plots to Corner Plots:	17,740	9,554
Sale Price of Minimum Plot to Absorb Costs of Corner Plots:	30,213	20,527
Floor Area Ratio (FAR)	0.13	0.24

Assuming 15% profit margin on construction
5% profit margin on land & infrastructure

Developer profit per hectare	75,173 $/hectare	106,822 $/hectare

Assuming Market Price=Cost+Profit Margin

5.27 The floor area ratio (FAR) and the percentage of salable land are the most important indicators which should be monitored when modifying standards. Those two indicators are directly linked to the developer's profitability. Table 5.4 shows an example of the difference in profit per hectare for middle-income schemes and for low-income schemes. Under the present SLCHP guidelines, the developer's profit per hectare would be 15% less for a low-income plot selling for M$19,200 than for a middle-income plot selling for M$ 42,000. This low profitability is due to the low floor area ratio (0.23) implicit in the guidelines. The table shows a set of four iterations where the floor area ratio is raised from the initial 0.23 to 0.42. The corresponding difference in profit as compared to a middle-income plot varies from -15% to +20%. It should be pointed out that the last two iterations are showing both an increase in profit (+17% and +20%) and in floor space (53 sq.m. instead of the original 42 sq.m.) while the selling price of the plot stays constant. In this case the savings made on more efficient land-use were reinvested in floor space, thus raising the floor area ratio and consequently the profits per hectare. From the household point of view, redundant road area was converted into 11 sq.m. of additional floor space, equivalent to an extra room. In this example, an increase in the developer's profitability resulted also in an increase in households' benefits. The higher floor area ratio is due in part to the larger salable area which increased from about 44% under SLCHP guidelines to the proposed 55%. The changes in individual standards which would permit to achieve 55% salable land are presented in Table 5.5. More detailed land-use parameters corresponding to the results presented in Table 5.4 are presented in Annex 3, Tables 4 and 5. The typical site layout corresponding to this increase in salable land is shown in Annex 3, Figures 1 and 2. Many other factors affect profitability, in particular the time required for construction and for selling the units. Those other factors have been kept constant in the preceding example.

Table 5.4: Developer Profitability and Land-Use Standards

		SLCHP	<---------Iterations------->			
	units	Guideline	(1)	(2)	(3)	(4)
Plot Area	m2	68	68	68	68	68
Floor Space per plot	m2	42	42	48	53	53
% Land Salable	%	44%	55%	47%	55%	55%
Site Floor Area Ratio		0.23	0.29	0.33	0.41	0.42
House+Plot Sale Price	M$	19,200	17,100	19,300	19,300	19,300
Profit per hectare increase or decrease as compared to the profit/ha for middle income plots selling for M$ 42,000		-15%	-4%	2%	17%	20%

Note: See Annex 3, Tables 3 & 4. Figures 1 & 2 in Annex 3 show layout for SLCHP and iteration (3).

5.28 The selection of low-cost land-use standards. The target values for the floor-area ratio and for the percentage of salable land should be selected before deciding on the value of the other parameters. The most appropriate values are the ones which would insure that low-cost housing would have a safe profit margin over alternative residential uses in areas where the demand is high. When these values are established, say 55% for salable land and 0.37 for the floor-area ratio, it is possible to set detailed standards for roads, utility areas and community facilities. Trade-offs would have to be made among various standards, and an infinite combination of values is possible, the only constraint being that the sum of the non-residential use should not be more than 45% (in the case where 55% has been selected for salable area). Hard choices might have to be made in allocating land between parks, schools and roads. But those choices would also stimulate the use of innovative designs for site layout. The new guidelines have already shown the way in that direction in advocating that part of the area for school sites and buffer zones of oxidations ponds should be designed to allow their use as public recreational space.

5.29 The selection of appropriate engineering standards. The reduction of unit cost would also require a systematic review of all engineering design standards, to insure that no unreasonable trade-off is made between capital cost and maintenance costs. Local authorities should be encouraged to explore ways to improve the productivity of their maintenance tasks. For instance, the use of modern equipment for the maintenance of sewer pipes can result in important savings in land (reduction in the width of back lanes) and civil works. If necessary, a program should be set up to help finance the modernization of maintenance tasks.

5.30 Creating incentives for local authorities. The development of new low-income areas within a local authority's boundary should produce additional resources. Those additional resources should come from, (a) a modified road grant system, (b) property tax, and, eventually, (c) a maintenance fee. To insure the support of local authorities, low-income areas should produce the same amount of revenue per unit of land as middle-income areas, while the amount of tax collected per household should of course be smaller. This would be possible if the density in low-income areas were significantly higher than in middle-income areas, i.e., if the percentage of salable area and the floor-area ratio were higher. The formulae through which the road grant system is calculated and the property tax collected should be reviewed. It would be necessary to insure that the formulae for the grant and the tax result in the same revenue whether the area is low-income or middle-income.

5.31 Improving and disseminating better site plan design practices. Private and public developers would have to improve the quality of site plan designs to fully capture the potential benefits (lower costs and higher profits) which the amended standards would provide. This process could be accelerated if schemes could be designed to demonstrate that higher land-use efficiency which could be achieved, and the consumer acceptability of different design patterns. Simultaneously, the local officials responsible for site plan approval would have to familiarize themselves with these new designs in order to avoid penalizing any design innovation by a lengthier approval process. Better site planning methods, linking design, planning and costs should be disseminated through

professional associations such as the Malaysian Institute of Town Planners. The participation of a qualified professional familiar with the current land subdivision legislation should be mandatory for the submission of planning approval for large site plans.

5.32 The financing of land for large community facilities. The financing of land for large community facilities (schools, main places of worship, etc.) should not depend on scheme size, but on a development tax on all land in the process of being developed. All residential developments should pay a fair share of the cost of community facilities irrespective of their size or density. This would avoid the penalization of residential schemes where low-income plots are dominant. The tax could be made progressive by taxing the larger consumers of land at higher rates. This method would have the added benefit of giving a higher cost to raw land and therefore to encourage the use of innovative site design techniques to save land. The cost recovery and the provision of land for small community facilities, such as parks, playgrounds and small worship places, should be made using the existing formula, although the value of the parameters setting the space standard could be reviewed to stay within the agreed target for salable land and floor area ratio.

Table 5.5: Adjusted Standards to Achieve 55% Salable Land

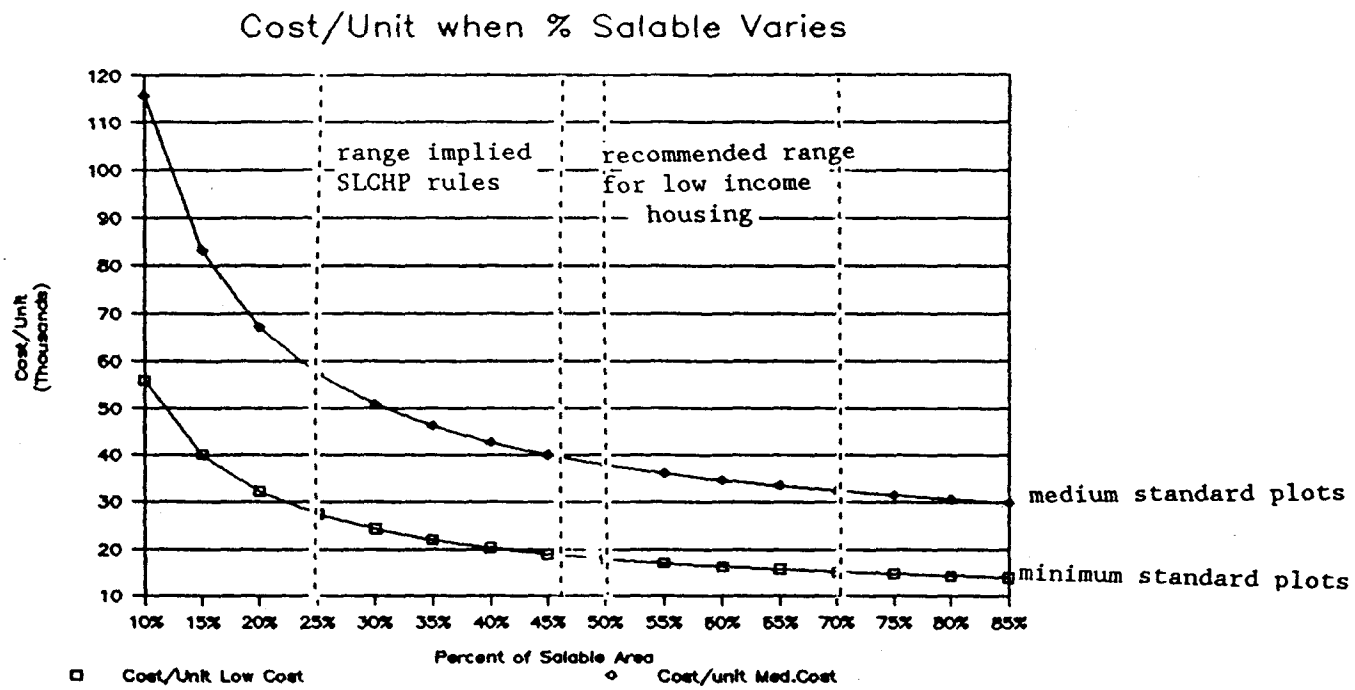
	Under Present SLCHP guidelines		Possible Way of Reaching 55% salable	
	m2/plot	%	m2/plot	%
A. Residential Area (salable area)				
Plot Size	68	44.26%	68	55.11%
B. Community Facilities				
Parking	3.72	2.42%	0	0.00%
Surau	7.33	4.77%	7	5.67%
Kindergarten	1.29	0.84%	1.29	1.05%
Playlot	7.51	4.89%	5.5	4.46%
Oxidation Pond	11.59	7.54%	10	8.10%
Total Com. Facilities	31.44	20.47%	23.79	19.28%
C. Road Area				
Roads serving community facilities	12.86	8.37%	7.45	6.04%
Roads serving plots	41.32	26.90%	24.14	19.57%
Total Roads	54.18	35.27%	31.59	25.61%
Total Area Required per Plot	153.62	100.00%	123.38	100.00%

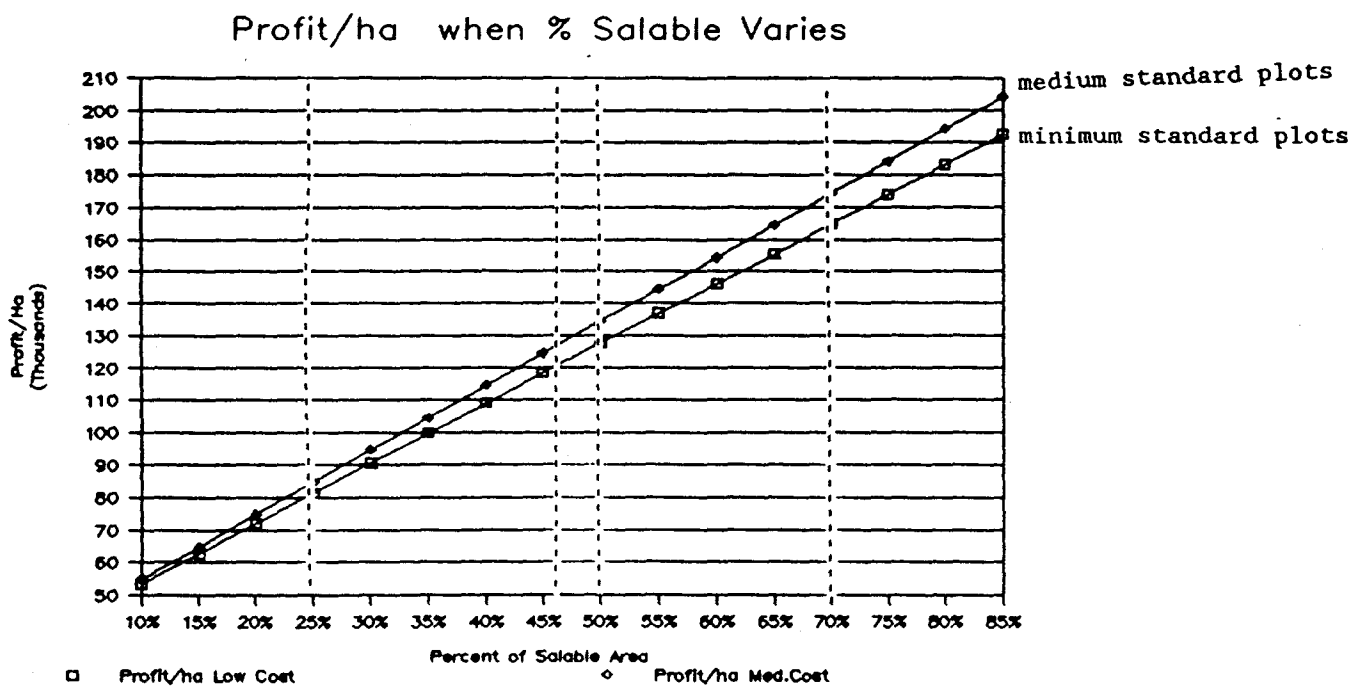
Detailed calculations of road area for 100 plots

Roads Serving Community facilities		
Street width	10 m	7 m
Block width	40 m	40 m
Block length	79 m	59 m
Street Area	1,286 M2	745 M2
Road area as % of Community Facilities	29.03%	23.86%
Roads Serving Plots		
Road area as % of plots	37.80% (1)	26.20% (2)

Note: (1) see Figure 1 Annex 3 , (2) see Figure 2 Annex 3

Figure 5.4: Relationship between Profit and Salable Area





G. Summary

5.33 This chapter has examined how the project level standards and practices in Malaysia affect the cost and output of new housing. The analysis concludes that land-use is the most important aspect because standards, in combination with present practices, lead to inefficient use of land, which in turn, makes low-cost projects either risky from a marketing point of view because prospective buyers find the sites poorly located or less profitable than other uses for which the developer could put the land.

5.34 These standards and practices, which increase the cost per dwelling by using more land than necessary, also increase the capital and maintenance costs of infrastructure and ultimately drive up the price of all urban land for all users. The effect of the standards is to make the cost of land the principal determinant in selecting a site for low-cost housing rather than to weigh various combinations of costs and benefits to determine the most attractive overall housing project attractive to prospective buyers and financially attractive to the supplier.

5.35 In identifying the standards which need to be changed, the key factor is not floor space or minimum lot size, both of which are highly valued by prospective buyers. Instead, this chapter finds road space and set-back regulations to be the major causes of the extremely small portion of salable land which determines developer costs and ultimately profits. High infrastructure standards in respect to maintenance and the threshold system of financing community facilities also provide incentives against the provision of low-cost housing for poorer households.

5.36 While the revised standards issued for the SLCHP are a step in the right direction, until local authorities allow the standards to be widely implemented, they will have little effect. This chapter ends by suggesting that a revision of standards and practices aimed at reducing costs without reducing benefits to buyers should be formulated along the following lines. First, make it at least as profitable for developers to build low-cost housing as other types of housing by allowing more flexibility in the regulations for a number of project characteristics or standards to reduce costs on a given piece of land. Second, set standards using two general criteria, the percentage of salable land and the floor-area ratio rather than the more than forty separate standards presently applied. Third, provide incentives to local authorities through the Federal Government's system of grants to encourage the approval of projects which have appropriate standards and for which maintenance and capital costs have been properly balanced. Fourth, finance community facilities in an equitable fashion so as not to distort the housing market.

MALAYSIA

THE HOUSING SECTOR: GETTING THE INCENTIVES RIGHT

Estimating the Long-Run Price Elasticity of Housing Supply

1. The Basic Model

Estimating the parameters of the long-run housing supply function can provide useful information on the degree to which the housing supply system is able to respond to shifts in demand. The model that we use to estimate housing supply parameters is derived from a simple competitive model of the housing market, in which equilibrium quantities of housing produced and housing prices are determined simultaneously by the intersection of housing demand and supply curves.

The system that determines housing output and prices consists of three equations: a demand curve, a supply curve, and an identity. Following convention, one may specify both the supply and demand equations in terms of loglinear functions. Housing demand is, in the simplest model, determined by household income, housing prices, and the general price level. Housing supply is determined by housing prices, and by input costs. In equilibrium, housing demand and supply are equal to each other; this establishes an identity between the supply and demand equations. The simplest such system consists of the following equations:

Demand

$$\ln Q_d = a + Ey \ln y + Eph_d \ln p_h + Ep_{od} \ln p_o \qquad (1)$$

Supply

$$\ln Q_s = b + Eph_s \ln p_h + Epc \ln p_c \qquad (2)$$

Equilibrium

$$\ln Q_d = \ln Q_s$$

where,

Q_d - quantity of housing demanded
Q_s - quantity of housing supplied
y - household income
p_h - price per unit of housing
p_o - price of "other" goods
p_c - price of construction inputs

and the major parameters to be estimated are the constants a and b and the following behavioral parameters:

Ey - Income elasticity of demand for housing
Eph_d - Price elasticity of demand for housing
Eph_s - Price elasticity of supply of housing.

Estimating parameters of the model

If one observes directly the variables in the system, it is possible to estimate its parameters using standard econometric techniques for the estimation of systems of simultaneous equations. Equations (1) and (2) can be estimated using two-stage least squares, for example, where the quantity and price of housing are endogenous variables. In certain circumstances, however, it will be advantageous to estimate the model's parameters from a reduced form of the system rather than the two structural equations. The reduced form of the system is gotten by setting Equations (1) and (2) equal and solving for the observable variable, p_h, the price of housing. Doing so results in the following specification, which expresses nominal housing prices as the dependent variable, and includes other nominal prices and nominal income as independent variables:

$$\ln p_h = \frac{b - a}{Eph_d - Eph_s} + \frac{Ec}{Eph_d - Eph_s} \ln p_c - \frac{Ey}{Eph_d - Eph_s} \ln y - \frac{Ep_{od}}{Eph_d - Eph_s} \ln po \quad (3)$$

In principle the results of estimating the structural equations and the reduced form should give comparable results, although the reduced form will not permit the underlying parameters of supply and demand to be estimated without bringing to bear additional outside information.

In the case of the current exercise, there are reasons for preferring to estimate the parameters of the system based on the reduced form equation, despite the fact that underlying parameters cannot be directly estimated. There is, for example, a general problem with developing country housing production statistics in that production magnitudes are often not well known. Sometimes this is a result of underreporting of informal housing which is undocumented. This is likely to be a particular problem in Malaysia and Thailand, for which equations are estimated below, though somewhat less of a problem in Korea. Moreover in the case of Malaysia, while the government reports statistics on formal housing production, the figures are calculated on the basis of housing starts which are then assumed to result in housing completions and thence sales after a stipulated lag. For figures reported in the main text, for example, the government has typically assumed that houses are completed in 18 months (later assumed to be two years) from their reported initiation. Even with relatively thorough reporting of housing starts, and because of the high rate of construction of informal housing in Malaysia this is far from the case, the assumption of a fixed period between the beginning and the end of construction is likely to be erroneous, and erroneous in such a way that attempts at estimating the structural equations of the housing market would almost certainly produce biased parameter estimates. This is so because the time period between initiation of construction and completion is likely to be an endogenous variable, such that any errors in measuring the actual rate of dwelling completions and/or sales will be correlated with the other variables included in the system. For example, during periods when the price of housing is particularly high relative to household incomes, sales may be slow and dwelling completions will lag. Thus the rate of completion, or the level of throughput of the system, will tend to be positively related to income and negatively related to housing price, each of which is a variable in

the system. But because the system by which dwelling completions are estimated assumes a fixed period of construction, errors in measuring completions will be correlated with levels of the variables included in the system. When this is the case, parameter estimates will be biased.

Notwithstanding this problem, unless outside information can be brought to bear on the estimated reduced form equation, it will not be possible to estimate the parameters of the structural equations. Fortunately, the literature concerning housing demand in developing countries has become quite advanced in the past several years, so that it is possible to estimate the price and income elasticities of housing demand in most developing countries with considerable confidence on the basis of broad and robust findings concerning demand parameters in a variety of countries. Consequently, the procedure followed here is to estimate the reduced form equations, and to subsequently identify the key underlying parameter of this investigation, the price elasticity of housing supply, based on parametric estimates of housing demand parameters in the literature.

Specifically, if one estimates Eq.(3) in terms of the following equation:

$$\ln p_h = A + B \ln p_c + C \ln y + D \ln p_o \quad (4)$$

an estimate of the price elasticity of housing supply is obtained from the following relationship:

$$\hat{Eph}_s = \frac{\hat{Ey} + \hat{C}\hat{Eph}_d}{\hat{C}} \quad (5)$$

where the parameter C is estimated econometrically as the elasticity of housing price with respect to household income and the two parameters Ey and Eph_d are estimated on the basis of external evidence.

In this report, information on the price and income elasticities of demand for housing is taken from a cross-country study of housing demand conducted by Malpezzi and Mayo at the World Bank.[1] The simplest of their cross-country models is a log-linear demand model which expresses housing expenditure by renters and owners as a function of income and the relative price of housing, where the latter variable was constructed using data from Kravis, Heston and Summers (1982).

Defining R as rent, y as household income, and p_H as the relative price of housing, Malpezzi and Mayo estimated the following models for renters and owners in developing countries:

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[1] See Stephen J. Malpezzi and Stephen K. Mayo, Housing Demand in Developing Countries, World Bank Staff Working Paper No. 733, 1986, which reviews the literature on housing demand and presents empirical evidence on housing demand parameters in some 15 developing country cities.

Renters:

$$\ln R = -5.39 + \underset{(0.18)}{1.60} \ln y + \underset{(0.15)}{0.15} \ln p_H$$

$R^2 = 0.90$
d.f. = 13

(standard errors in parentheses).

Owners:

$$\ln R = 3.57 + \underset{(0.35)}{1.38} \ln y + \underset{(0.50)}{0.65} \ln p_H$$

$R^2 = 0.76$
d.f. = 11

where rent, and income are city means converted to 1981 U.S. dollars[2], and pH is the Kravis-Heston-Summers price index, with the U.S. relative price normalized at one.

The implications of these models, which were confirmed with alternative specifications, are straightforward. In the very long run, housing consumption is income elastic. Price elasticities are smaller in absolute value than income elasticities, although confidence intervals are quite wide for the former. Long-run income elasticities are estimated to be slightly higher for renters (1.60) than for owners (1.38). This means that as cities' economies develop over the very long run, that owner and renter consumption patterns increase at a similar pace, ceteris paribus. However, because renter price elasticities are estimated to be higher than owner elasticities, the net effect of both incomes and prices rising with economic development is that owners' consumption increases faster than renters' consumption over most of the range of the data. Price and income elasticity estimates from these models are used below in a parametric fashion to identify the price elasticity of housing supply based on Equation (5).

The Data

Data for estimating the models described above were collected for Malaysia, Thailand, and Korea. In the case of each country data were collected on the following variables, whose sources are listed:

- Price of housing

  Malaysia - price series on single family terrace houses (including both new and existing houses), constructed by the mission

[2] Note that in a log-linear expenditure equation the coefficient of price is equal to one plus the price elasticity; thus the price elasticity is the estimated coefficient minus one, or -0.85 and -0.35 for owners.

based on data presented in volumes of the Property Market Reports published by the Ministry of Finance.

Thailand - shelter price series, a component of the consumer price index; Department of Business Economics, Ministry of Commerce.

Korea - price series on sales prices of housing; Ministry of Construction.

- Income

Malaysia - based on national income accounts estimates of personal consumption expenditures divided by estimates of household size; from Department of Statistics.

Thailand - same procedure as Malaysia; from Department of Statistics.

Korea - same procedure as Malaysia; from Department of Statistics.

- Construction materials index

Malaysia - based on the producers' price index for "crude materials"; from Department of Statistics.

Thailand - index of building materials cost; from Department of Business Economics, Ministry of Commerce.

Korea - index of building materials cost; from Department of Statistics.

- Consumer price index

Malaysia - Self explanatory; from Department of Statistics.

Thailand - Self explanatory; from Department of Business Economics, Ministry of Commerce.

Korea - Self explanatory; from Department of Statistics.

Results of the Model

Table A.1 presents the estimated parameters of Equation (4), from which the housing supply price elasticity may subsequently be calculated. As the table indicates, the results of the reduced form equations indicate a uniformly high degree of statistical goodness fit. In the case of Malaysia and Korea, the two countries believed a priori to have more restrictive regulatory environments affecting the housing market, the coefficients of income are highly significant in either equation, indicating that controlling for construction costs and for

the general price level, income shifts are associated with increases in the price of housing. In Thailand, by contrast, the coefficient of income is insignificant. These results are consistent with the arguments presented in the text concerning the unresponsiveness of the housing supply system in Malaysia. The fact that similar results obtain for Korea and radically different results for Thailand should be seen as giving further support to the arguments advanced in the text concerning the unresponsiveness of the Malaysian supply system and the likely cause -- that of a restrictive and time consuming regulatory environment. While there is room for improvement in the statistical estimation of these reduced form equations, particularly with regard to including additional variables characterizing housing inputs and taking account of the possibility of serially correlated error terms in the estimating equations, it is believed that the results presented here provide strong support for the hypotheses advanced in the text.

Table A.1 - Results of Reduced Form Supply Elasticity Estimates
(Equation 4)

Variable	Malaysia	Thailand	Korea
Constant	-1.778	0.556	5.367
LN Income	1.563 (0.320)	0.140 (0.134)	1.673 (0.334)
LN Construction Costs	-0.074 (0.138)	-0.600 (0.087)	-0.808 (0.493)
LN CPI (Other Costs)	-0.120 (0.492)	1.343 (0.213)	-0.280 (0.733)
R^2	0.989	0.996	0.988
Degrees of freedom	11	13	12

Note: Standard errors are shown in parentheses

The results presented in the table may be used to derive housing supply elasticities, based on substituting the coefficients of the income variables into Equation 5, along with estimates of the price and income elasticities of housing demand. As indicated above, the literature provides strong evidence of the similarity of these parameters in a wide range of developing countries. Consequently supply elasticities have been estimated here on the basis of what the literature suggests is a reasonable set of values for long-run price and income elasticities of housing demand. Point estimates of the housing supply elasticity are presented in Table A.2, based on an assumed value for the price

elasticity of demand of 0.5 and for two values of the income elasticity that are representative of the Malpezzi/Mayo results presented above (1.0 and 1.5). For comparison, supply elasticity estimates for the United States based on a similar reduced form estimation procedure are also provided in the Table. Figure A.1 illustrates the sensitivity of estimated housing supply elasticity estimates to a wider range of estimates of housing demand parameters -- price elasticities ranging from 0.0 to -1.0, and income elasticity estimates ranging from 0.5 to 2.0. As the figure indicates, the conclusions that parameters for Malaysia and Korea are similar, and that parameters for Thailand are quite different than those of the other two countries are extremely robust over a wide range of plausible demand parameters.

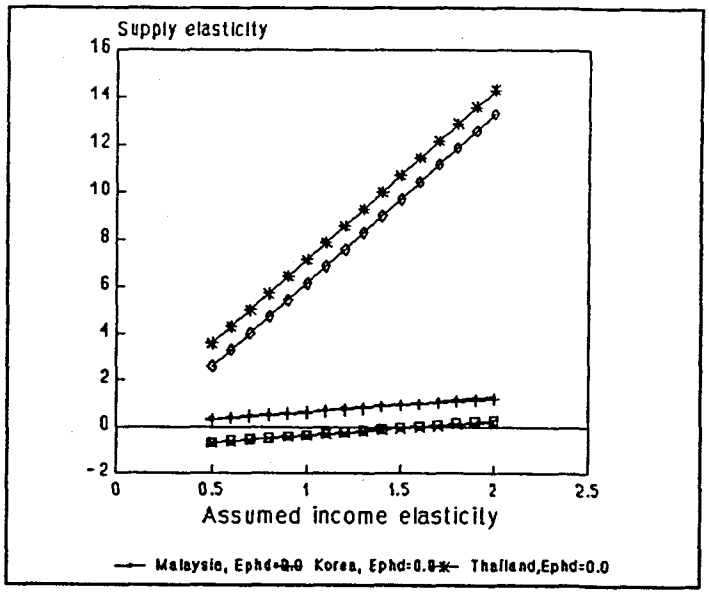


Table A2 - Estimated price elasticity of housing supply*

		Ey=1.0	Ey=1.5
Restrictive regulatory environments			
	Korea	0.10	0.40
	Malaysia	0.14	0.46
Nonrestrictive regulatory environments			
	Thailand	6.64	10.21
	U.S.A.	22.03	40.04

* The source of estimates and their derivation is given in the discussion above in this annex. The source of estimates for the U.S. is calculations from Table 4 in James R. Follain Jr., "The Price Elasticity of the Long-Run Supply of New Housing Construction," Land Economics, 55, May 1979, pp. 190-199; and is based on a somewhat different functional form than that used to estimate parameters for the three Asian countries.

PRESENT VALUE MODEL -- SUMMARY OF INPUT DATA

Version: 1.1
Run Date: 22-Nov
Run Time: 04:34 PM

LOCATION:	Selangor	Selangor	Selangor	Selangor	K.L.	Perlis	Selangor	Selangor	Selangor	Test	Selangor	K.L.	Selangor	Selangor
PROGRAM:	PLCHP	PLCHP	SLCHP	SLCHP	SLCHP	SLCHP	SLCHP	Private	Private	Renter	SLCHP	SLCHP	Individua	SLCHP
LAND:	Public	Public	Public	Private	Private	Private	Private	Private	Squatter	Case	Private	Private	Private	Private
DEVELOPER:	PKNS	Private	Private	Private	Private	Private	Private	Private	Private		Private	Private	Private	Private
STRUCTURE:	Low Cost	Low Cost	Low Cost	Low Cost	Low Cost	Low Cost	Med Cost	Low Cost	Low Cost		Low Cost	Low Cost	Low Cost	Med-Hi Co
TENURE:	Sales	Sales	Sales	Sales	Sales	Sales	Sales	Sales	Squatter		Sales	Sales	Sales	Sales
PLANNING STDS:	Current	Current	Current	Current	Current	Current	Current	Current	Current	Current	Low Std	Current Sq. Clear	Unplanned	Current
INPUTS AND INTERMEDIATE CALCULATIONS														
Target Income	$750	$750	$750	$750	$750	$750	$750	$750	$750	$750	$750	$750	$750	$750
Selling Price	$25,000	$25,000	$25,000	$25,000	$25,000	$20,000	$70,000	$25,000	$5,000	$25,000	$25,000	$25,000	$30,000	$85,000
Market Value	$20,000	$30,000	$30,000	$30,000	$50,000	$20,000	$70,000	$30,000	$5,000	$30,000	$30,000	$50,000	$30,000	$85,000
Annual Market Rent	$2,538	$2,538	$2,538	$2,538	$2,538	$2,538	$3,600	$2,538	$600	$2,538	$2,538	$2,538	$2,538	$3,600
Rent to Value (=)	0.127	0.085	0.085	0.085	0.051	0.127	0.051	0.085	0.120	0.085	0.085	0.051	0.085	0.042
Controlled to Market Rent	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Legal Sales Price to Market Price (=)	1.25	0.83	0.83	0.83	0.50	1.00	1.00	0.83	1.00	0.83	0.83	0.50	1.00	1.00
Background Inflation	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Real Increase in Land Price	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Real Increase in Structure Prices	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Real Increase in Rents	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Real Discount Rate	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Deposit Amount	$0	$0	$2,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Deposit Period	0	0	18	0	0	0	0	0	0	0	0	0	0	0
Value of Condemned Unit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$5,000	$0	$0
Fixed Search & Move Costs	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
S&M Costs: % of Income	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Total Transactions Cost (=)	$1,023	$1,023	$1,585	$1,023	$1,023	$1,023	$1,023	$1,023	$1,023	$1,023	$1,023	$6,023	$1,023	$1,023
Extra Transactions Costs (=)	$0	$0	$563	$0	$0	$0	$0	$0	$0	$0	$0	$5,000	$0	$0
Plot Size	800	800	800	800	800	800	1100	800	400	800	800	800	800	1400
Total Land/Plot Size	2.50	2.50	2.50	2.50	2.50	2.50	2.20	2.50	1.20	2.50	1.50	2.50	1.20	2.00
Acquisition Price of Land/sq ft	$0.00	$0.00	$0.00	$4.00	$8.00	$2.00	$4.00	$4.00	$0.00	$5.00	$4.00	$8.00	$5.00	$4.00
Market Price of Land/sq ft	$4.00	$4.00	$4.00	$4.00	$8.00	$2.00	$4.00	$4.00	$4.00	$5.00	$4.00	$8.00	$5.00	$4.00
Conversion Premium/sq ft	$0.50	$0.50	$0.50	$0.50	$0.50	$0.50	$0.50	$0.50	$0.00	$0.50	$0.50	$0.50	$0.00	$0.50
Premium Reduction (%)	100%	100%	60%	60%	60%	60%	60%	0%	0%	0%	60%	60%	0%	60%
Economic Land Cost (=)	$9,000	$9,000	$8,600	$600	$600	$600	$726	$0	$1,920	$0	$360	$600	$0	$840
Financial Land Cost (=)	$0	$0	$400	$8,400	$16,400	$4,400	$10,164	$9,000	$0	$11,000	$5,040	$16,400	$4,800	$11,760
Site Development Costs	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,500	$3,000	$1,000	$3,000	$3,000	$3,000	$1,000	$5,000
Infrastructure Costs	$5,600	$5,600	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$1,000	$2,000	$2,000	$2,000	$500	$3,000
Site Development Subsidy (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Infrastructure Subsidy (%)	10%	10%	10%	10%	10%	10%	10%	10%	0%	10%	10%	10%	0%	10%
Prof. Services Subsidy (%)	0%	0%	5%	5%	5%	5%	5%	0%	0%	0%	5%	5%	0%	5%
Economic Cost of Plot (=)	$17,600	$17,600	$14,000	$14,000	$22,000	$10,000	$16,390	$14,000	$3,920	$16,000	$10,400	$22,000	$6,300	$20,600
Financial Cost of Plot (=)	$8,040	$8,040	$3,950	$11,950	$19,950	$8,200	$11,964	$13,800	$2,000	$15,800	$8,590	$19,950	$6,300	$15,210

PRESENT VALUE MODEL -- SUMMARY OF INPUT DATA

	LOCATION:	Selangor	Selangor	Selangor	Selangor	K.L.	Perlis	Selangor	Selangor	Selangor	Test	Selangor	K.L.	Selangor	Selangor
	PROGRAM:	PLCHP	PLCHP	SLCHP	SLCHP	SLCHP	SLCHP	SLCHP	Private	Private	Renter	SLCHP	SLCHP	Individua	SLCHP
	LAND:	Public	Public	Public	Private	Private	Private	Private	Private	Squatter	Case	Private	Private	Private	Private
	DEVELOPER:	PKNS	Private	Private	Private	Private	Private	Private	Private	Private		Private	Private	Private	Private
Version: 1.1	STRUCTURE:	Low Cost	Low Cost	Low Cost	Low Cost	Low Cost	Low Cost	Med Cost	Low Cost	Low Cost		Low Cost	Low Cost	Low Cost	Med-Hi Co
Run Date: 22-Nov	TENURE:	Sales	Sales	Sales	Sales	Sales	Sales	Sales	Sales	Squatter		Sales	Sales	Sales	Sales
Run Time: 04:34 PM	PLANNING STDS:	Current	Current	Current	Current	Current	Current	Current	Current	Current	Current	Low Std	Current Sq. Clear	Unplanned	Current
Unit Size (sq ft)		705	705	705	705	705	705	1000	705	250	705	705	705	705	1000
Structure Cost/sq ft		$20	$20	$20	$20	$20	$20	$25	$20	$5	$20	$20	$20	$20	$30
Materials Subsidies		$500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction Finance Subsidies		$1,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Construction Subsidies		$2,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Economic Cost of Structure (=)		$14,100	$14,100	$14,100	$14,100	$14,100	$14,100	$25,000	$14,100	$1,250	$14,100	$14,100	$14,100	$14,100	$30,000
Financial Cost of Structure (=)		$13,600	$14,100	$14,100	$14,100	$14,100	$14,100	$25,000	$14,100	$1,250	$14,100	$14,100	$14,100	$14,100	$30,000
Depreciation Rate		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	5.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Maintenance (% of structure cost)		4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	5.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Management Fees (%)		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	0.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Annual Real Infrastructure Costs		$150	$150	$150	$150	$150	$150	$150	$150	$50	$150	$150	$150	$150	$150
Annual Financial Infra Costs		$50	$50	$50	$50	$50	$50	$50	$150	$0	$50	$50	$50	$50	$50
Additional Infra Reduction (%)		25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	0.0%	0.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Recurrent Infra Subsidies (=)		$113	$113	$113	$113	$113	$113	$113	$0	$0	$0	$113	$113	$0	$113
Cost of Land Use Restrictions		$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$0	$6,000	$3,000	$6,000	$1,000	$6,000
Cost of Building Standards		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cost of Permits		$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$500	$1,000	$1,000	$1,000	$250	$1,000
Direct Cost of Sale Restrictions		$1,625	$1,625	$1,625	$1,625	$1,625	$1,300	$4,550	$1,625	$0	$1,625	$1,625	$1,625	$0	$5,525
Loan Term		25	25	25	25	25	25	25	25	25	25	25	20	20	25
Loan to Value Ratio		100.0%	100.0%	95.0%	95.0%	95.0%	95.0%	95.0%	90.0%	0.0%	90.0%	95.0%	95.0%	90.0%	95.0%
Interest Rate		5.5%	5.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	11.0%	11.0%	8.5%	8.5%	8.5%	8.5%
Market Fixed Rate		11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%
Grace Period		2	2	0	0	0	0	0	0	0	0	0	0	0	0
Grace Interest Capitalized?															
Stamp Tax (% of SP)		0%	0%	1%	3%	3%	3%	3%	3%	0%	3%	3%	3%	3%	3%
Investment Tax Credit		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Tenant Income Tax Rate		30%	30%	12%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
Capital Gains Tax Type		Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal
Capital Gains Tax Rate		5%	5%	5%	5%	5%	5%	5%	5%	0%	5%	5%	5%	5%	5%
Property Tax Rate		0.400%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Quit Rent		$50	$50	$50	$50	$50	$50	$50	$50	$0	$50	$50	$50	$50	$50
Landlord/Developer Tax Rate		30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%

PRESENT VALUE MODEL -- SUMMARY OF INPUT DATA

Version: 1.1
Run Date: 22-Nov
Run Time: 04:34 PM

LOCATION:	Selangor	Selangor	Selangor	Selangor	K.L.	Perlis	Selangor	Selangor	Selangor	Test	Selangor	K.L.	Selangor	Selangor
PROGRAM:	PLCHP	PLCHP	SLCHP	SLCHP	SLCHP	SLCHP	SLCHP	Private	Private	Renter	SLCHP	SLCHP	Individua	SLCHP
LAND:	Public	Public	Public	Private	Private	Private	Private	Private	Squatter	Case	Private	Private	Private	Private
DEVELOPER:	PKNS	Private	Private	Private	Private	Private	Private	Private	Private		Private	Private	Private	Private
STRUCTURE:	Low Cost	Low Cost	Low Cost	Low Cost	Low Cost	Low Cost	Med Cost	Low Cost	Low Cost		Low Cost	Low Cost	Low Cost	Med-Hi Co
TENURE:	Sales	Sales	Sales	Sales	Sales	Sales	Sales	Sales	Squatter		Sales	Sales	Sales	Sales
PLANNING STDS:	Current	Current	Current	Current	Current	Current	Current	Current	Current	Current	Low Std	Current Sq. Clear	Unplanned	Current
KEY MODEL OUTPUTS: Incentives and Disincentives														
Land Subsidy	$9,000	$9,000	$8,600	$600	$600	$600	$726	$0	$1,920	$0	$360	$600	$0	$840
Infrastructure Subsidy	$560	$560	$1,450	$1,450	$1,450	$1,200	$3,700	$200	$0	$200	$1,450	$1,450	$0	$4,550
Recurrent Infra. Subsidy	$958	$958	$958	$958	$958	$958	$958	$0	$0	$0	$958	$958	$0	$958
Total Infra. Subsidy	$1,518	$1,518	$2,408	$2,408	$2,408	$2,158	$4,658	$200	$0	$0	$2,408	$2,408	$0	$5,508
Materials Subsidy	$500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Labor & Other Con. Subsidy	$2,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction Finance Subsidy	$1,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Construction Subsidies	$4,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Building Standards	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Land Use and Infrastructure Stds	($6,000)	($6,000)	($6,000)	($6,000)	($6,000)	($6,000)	($6,000)	($6,000)	$0	($6,000)	($3,000)	($6,000)	($1,000)	($6,000)
Planning Permission	($1,000)	($1,000)	($1,000)	($1,000)	($1,000)	($1,000)	($1,000)	($1,000)	($500)	($1,000)	($1,000)	($1,000)	($250)	($1,000)
Sale Restrictions	($1,625)	($1,625)	($1,625)	($1,625)	($1,625)	($1,300)	($4,550)	($1,625)	$0	($1,625)	($1,625)	($1,625)	$0	($5,525)
Rental Regulations										$0				
Total Regulatory Costs	($8,625)	($8,625)	($8,625)	($8,625)	($8,625)	($8,300)	($11,550)	($8,625)	($500)	($8,625)	($5,625)	($8,625)	($1,250)	($12,525)
End User Financing Subsidy	$11,962	$11,962	$4,017	$4,017	$4,017	$3,213	$11,247	$3,805	$0	($218)	$4,017	$3,485	$3,962	$13,657
Acquisition Tax	$0	$0	($250)	($750)	($750)	($600)	($2,100)	($750)	$0	($750)	($750)	($750)	($900)	($2,550)
Registration Tax	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Investment Tax Credit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Property Tax	($951)	($951)	$0	($951)	($951)	($761)	($2,664)	($951)	$0	($951)	($951)	($951)	($1,142)	($3,235)
Capital Gains Tax	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)	$0	($514)	($0)	($0)	($0)	($0)
Tax on Rental Income										($4,321)				
Total Taxes	($952)	($952)	($250)	($1,702)	($1,702)	($1,361)	($4,764)	($1,702)	$0	($6,537)	($1,702)	($1,702)	($2,042)	($5,785)
Extra Transactions Costs (Tenant)	($0)	($0)	($563)	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($0)	($5,000)	($0)	($0)
Economic Cost of Unit:	$31,700	$31,700	$28,100	$28,100	$36,100	$24,100	$41,390	$28,100	$5,170	$37,302	$24,500	$36,100	$20,400	$50,600
Affordability at Economic Cost of the Unit	$13,597	$13,597	$11,695	$11,695	$15,995	$9,652	$18,977	$11,695	$1,409	$49,444	$9,853	$15,995	$7,837	$24,395
Current Selling Price of Unit:	$25,000	$25,000	$25,000	$25,000	$25,000	$20,000	$70,000	$25,000	$5,000	$2,538	$25,000	$25,000	$30,000	$85,000
Affordability at Current Selling Price:	$9,319	$9,319	$11,603	$11,603	$11,603	$9,283	$32,489	$10,993	$0	$19,902	$11,603	$12,548	$14,266	$39,451
Price of Unit if Developer Sells at Breake	$33,465	$37,465	$30,025	$38,525	$54,525	$35,300	$22,004	$40,375	$3,920	$4,089	$28,565	$54,525	$12,950	$25,885
Affordability at Breakeven Price:	$14,550	$16,755	$12,705	$17,350	$26,783	$15,554	$8,615	$18,397	$997	$44,071	$11,937	$26,783	$4,441	$10,554
Market Price of Unit:	$20,000	$30,000	$30,000	$30,000	$50,000	$20,000	$70,000	$30,000	$5,000	$30,000	$30,000	$50,000	$30,000	$85,000
Affordability at Current Market Prices (i.	$10,687	$16,030	$16,030	$16,030	$26,717	$10,687	$37,403	$16,030	$2,672	$19,902	$16,030	$28,255	$16,953	$45,418

MALAYSIA

THE HOUSING SECTOR: GETTING THE INCENTIVES RIGHT

Land Use and Design Standards for Low-cost Housing

MINIMUM LAND USE AND DESIGN STANDARDS FOR LOW COST HOUSING
From the Special Low-Cost Housing Programme

	Single Storey Feet	Double Storey Feet		Single Storey meters	Double Storey meters	
PLOT STANDARDS						
Width	16	14	feet	4.88	4.27	meter
Length	55	52		16.76	15.85	
Area	880	728	Sq.F	81.75	67.63	m2
Minimum Floor Space	450	450	Sq.F	41.81	41.81	m2
Number of floors	1	2		1	2	
* % Min. of plot built-up	51.14%	30.91%		51.14%	30.91%	
Set Back on ped Way	7.5	7.5	feet	2.29	2.29	m
Set Back on Roads	15	15		4.57	4.57	m
* Buildable area for plots facing Roads & Ped W.	520	413	Sq.F	48.31	38.37	m2
* Maximum Floor Space	520	826	Sq.F	48	77	m2
* Standard Plot Max.FAR	0.59	1.13		0.59	1.13	
* Minimum Width of Corner plots	31.00	29.00	feet	9.45	8.84	meter
* Minimum size of Corner Plots	1705	1508	Sq.F	158.40	140.10	m2
* Corner plot Max FAR	0.30	0.55		0.30	0.55	
STREET STANDARDS						
Back Lanes	15	15	feet	4.57	4.57	meter
Road ROW Main Access	66	66	feet	20.12	20.12	meter
Distributor	40	40		12.19	12.19	
Internal	30	30		9.14	9.14	
Pedestrian way	15	15		4.57	4.57	
Maximum length of Ped.Way	250	250	feet	76.20	76.20	meter
SAMPLE BLOCK Boundaries Roads right of ways:						
North road: Int.	30	feet		9.14	meter	
South Road: Main	66	"		20.12	"	
East Road: Dist	30	"		9.14	"	
West Road: Dist.	40	"		12.19	"	
Inside Roads are Pedest.Way	15	"		4.57	"	
Back Lanes	15	"		4.57	"	
Number of rows: 6						
Block dimensions:	6	6	rows	6	6	rows
* Length	268	270	feet	81.69	82.30	meter
* Width	510	492		155.45	149.96	
* Total area	136,680	132,840	Sq.F	12,698	12,341	
* Total Area (Acre, Hectare	3.14	3.05	Acre	1.27	1.23	Hectare
* Number of plots	78	90		78	90	
* Number of Corner plots	12	12		12	12	
* Number of Minimum plots	66	78		66	78	
* % of corner plots	15.38%	13.33%		15.38%	13.33%	

COMMUNITY FACILITIES STANDARDS

Parking				
Plot/parking space	4	4	4	4
Area per parking space	160	160 Sq.F	14.86	14.86
Parking space/plot	40	40 Sq.F	3.72	3.72
Religious Facilities				
Muslim resident/surau	800	800 pers	800	800
Proportion of Muslims	50%	50%	50%	50%
Area of one Surau	0.5	0.5 acre	2023	2023 m2
Sureau area/plot	79	79 Sq.F	7.33	7.33 m2
Muslim Resident/Mosque	2600	2600 pers	2600	2600 pers
Area of one mosque	1.2	1.2 acre	4855	4855 m2
Mosque area/plot	58	58 sq.F	5.42	5.42 m2
Non muslim resident /place of worship	2600	2600 pers	2600	2600 pers
Area of place of worship	1.2	1.2 acre	4855	4855 m2
place of worship area/plot	58	58 Sq.F	5.42	5.42 m2
Kindergarten				
Residents/kindergarten	2500	2500 pers	2500	2500
Area of kindergarten	6000	6000 Sq.F	557	557 m2
kindergarten area/plot	13.92	13.92 Sq.F	1.29	1.29 m2
Playlots				
Resident/Playlot	500	500 pers	500	500 pers
Playlot area	0.16	0.16 Acre	647	647 m2
Playlot area/plot	80.85	80.85 Sq.F	7.51	7.51 m2
Playground				
Resident/playground	2000	2000 pers	2000	2000 pers
Area of playground	2.00	2 Acre	8092	8092 m2
playground area/plot	253	253 Sq.F	23.47	23.47 m2
Multipurpose Community Hall				
Resident/community hall	200	200 pers	200	200 pers
Area of Community Hall	0.25	0.25 Acre	1012	1012 m2
* Community Hall/plot	316	316 Sq.F	29.33	29.33 m2
Primary school				
Number of student/school	800			
Population student ratio:	0.16			
* Resident/p.School	5000			
Area of primary School	6	6 Acre	2.43	2.43 Ha
* p.school area/plot	303	303 Sq.F	28.16	28.16 m2
Secondary school				
Number of student/school	1000			
Population Student ratio	0.1			
* Resident/S.School	10000			
Area of secondary school	9	9 Acre	3.64	3.64 Ha
* s.school area/plot	227	227 Sq.F	21.12	21.12 m2
Oxydation ponds				
Number of residents:	2000	Standard:B		
* Number of plots	345			
* Area required for pond	0.99	0.99 Acre	0.4	0.4 Ha
* Area per plot	125	125 Sq.F	11.59	11.59 m2

ANNEX 3
Table 2

SUMMARY LAND USE FOR A SCHEME CONTAINING ONLY MINIMUM PLOTS AND CORNER PLOTS

	Large Scale >2500 persons	Medium Scale about 1000	Small Scale about 500 peoples
Residential	24.76%	37.02%	44.26%
Parking	1.19%	1.78%	2.13%
Community facilities			
Surau	2.35%	3.51%	4.20%
Mosque	1.73%	0.00%	0.00%
Worship	1.73%	0.00%	0.00%
Kindergarten	0.41%	0.00%	0.74%
Playlots	2.41%	3.60%	4.30%
Playgrounds	7.52%	0.00%	0.00%
Community Hall	9.40%	14.05%	0.00%
Primary School	9.02%	0.00%	0.00%
Secondary School	6.77%	0.00%	0.00%
Oxydation Pond	3.71%	5.55%	6.64%
TOTAL	71.01%	65.52%	62.27%
Streets serving plots	19.16%	28.66%	34.26%
Streets serving facil.	9.83%	5.83%	3.46%
TOTAL AREA	100.00%	100.00%	100.00%
Population density	186 people/ha	278 people/ha	332 people/ha
Plot density	32 plot/ha	48 plot/ha	57 plot/ha
Floor Area Ratio (FAR)	0.13	0.20	0.24

TABLE 3: DEVELOPER PROFITABILITY AND LAND USE STANDARDS

ANNEX 3
Table 3

11-Apr-89	Middle Income Alternative Plot Type	SLCHP Guidelines Standard plot	SLCHP Guidelines Corner Plot	Iteration (1) Standard plot	Iteration (1) Corner Plot	Iteration (2) Standard plot	Iteration (2) Corner Plot	Iteration (3) Standard plot	Iteration (3) Corner Plot
A. Unit Sale Price (units)	A	B	C	D	E	F	G	H	I
Sale Price of Construction M$/m2	225	200	200	200	200	200	200	200	200
Sale Price of Land M$/m2	30	30	30	30	30	30	30	30	30
Infrastructure Sale Price M$/m2	45	40	40	40	40	40	40	40	40
B. Plot Geometry Regulations									
Plot area m2	139	68	< 142.37 >	68	< 142.37 >	68	< 99.85 >	68	< 99.85 >
Plot Frontage m	6	4.27	< 8.94 >	4.27	< 8.94 >	4.27	< 6.27 >	4.27	< 6.27 >
Plot length m	< 23.17 >	< 15.93	>< 15.93 >	< 15.93	>< 15.93 >	< 15.93	>< 15.93 >	< 15.93	>< 15.93 >
Front Set back m	5	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67
Back set back m	3	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Side set back m	0	0	4.67	0	4.67	0	2	0	2
Max.Ground Buildable Area m2	< 91.00 >	< 37.38	>< 37.38 >	< 37.38	>< 37.38 >	< 37.38	>< 37.38 >	< 37.38	>< 37.38 >
Actual Builded Area m2	82	21	21	21	21	24	25	26.5	30
Number of floors	1	2	2	2	2	2	2	2	2
Floor space/ plot m2	< 82 >	< 42	>< 42 >	< 42	>< 42 >	< 48	>< 50 >	< 53	>< 60 >
Plot Floor Area Ratio	< 0.59 >	< 0.62	>< 0.30 >	< 0.62	>< 0.30 >	< 0.71	>< 0.50 >	< 0.78	>< 0.60 >
C. Site Land Use Regulations									
Percentage of corner plots			15.00%		15.00%		15.00%		15.00%
% of Salable land	45%		44%		55%		49%		55%
Site Floor Area Ratio	< 0.27 >		< 0.23 >		< 0.29 >		< 0.33 >		< 0.41 >
C. Costs per Dwelling Unit									
Cost of Superstructure M$	< 18,450 >	< 8,400	>< 8,400 >	< 8,400	>< 8,400 >	< 9,600	>< 10,000 >	< 10,600	>< 12,000 >
Cost of Plot M$	< 23,167 >	< 10,755	>< 22,517 >	< 8,655	>< 18,120 >	< 9,714	>< 14,264 >	< 8,655	>< 12,708 >
Total Cost per Dwel.Unit M$	< 41,617 >	< 19,155	>< 30,917 >	< 17,055	>< 26,520 >	< 19,314	>< 24,264 >	< 19,255	>< 24,708 >
D. Profits Percentages Assumption									
Profit/m2 of Construction	15%		15%		15%		15%		15%
Profit/m2 of Land	10%		10%		10%		10%		10%
F. Average Profit/ha by Site									
Profit/Ha M$	< 164,595 >		<140,453 >		<157,549 >		<167,559 >		<192,541 >
Profit incentive(disencentive)			<(24,142)>		< (7,046)>		< 2,964 >		< 27,946 >
as a % of alternative profit			< -15%>		< -4%>		< 2%>		< 17%>
G. Additional Indicators									
Profit per Plot		< 2,335	>< 3,512 >	< 2,125	>< 3,072 >	< 2,411	>< 2,926 >	< 2,455	>< 3,071 >
number of plots/ha		< 47.53	>< 8.39 >	< 59.06	>< 10.42 >	< 57.23	>< 10.10 >	< 64.24	>< 11.34 >
Total number of plot/ha			< 55.92 >		< 69.48 >		< 67.33 >		< 75.57 >
Average household size	5								
Population Density People/Ha			< 280 >		< 347 >		< 337 >		< 378 >

Note: Calculated outputs are shown as <...>. ====== Indicates a change in parameter over previous iteration
Parameters in column B and C line 18 to 46 correspond to minimum standards explicitly or implicitly contained in SLHCP guidelines

TABLE 4: DEVELOPER PROFITABILITY AND LAND USE STANDARDS

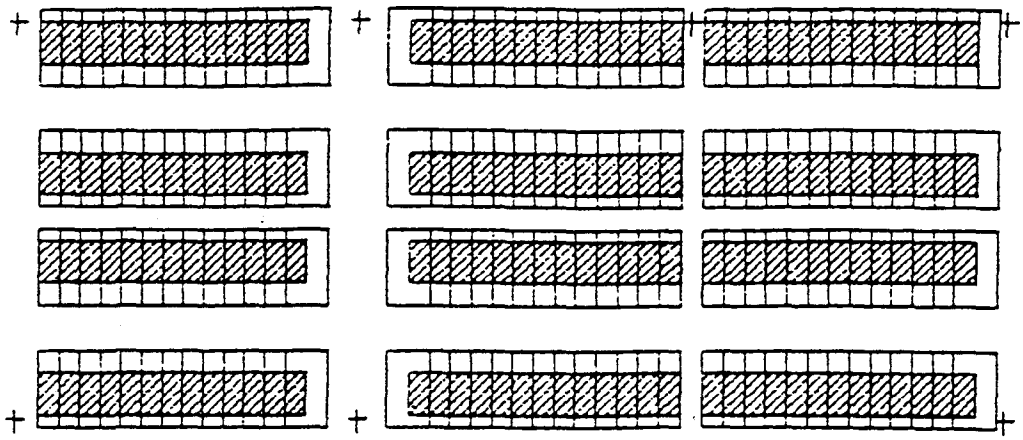
ANNEX 3
Table 4

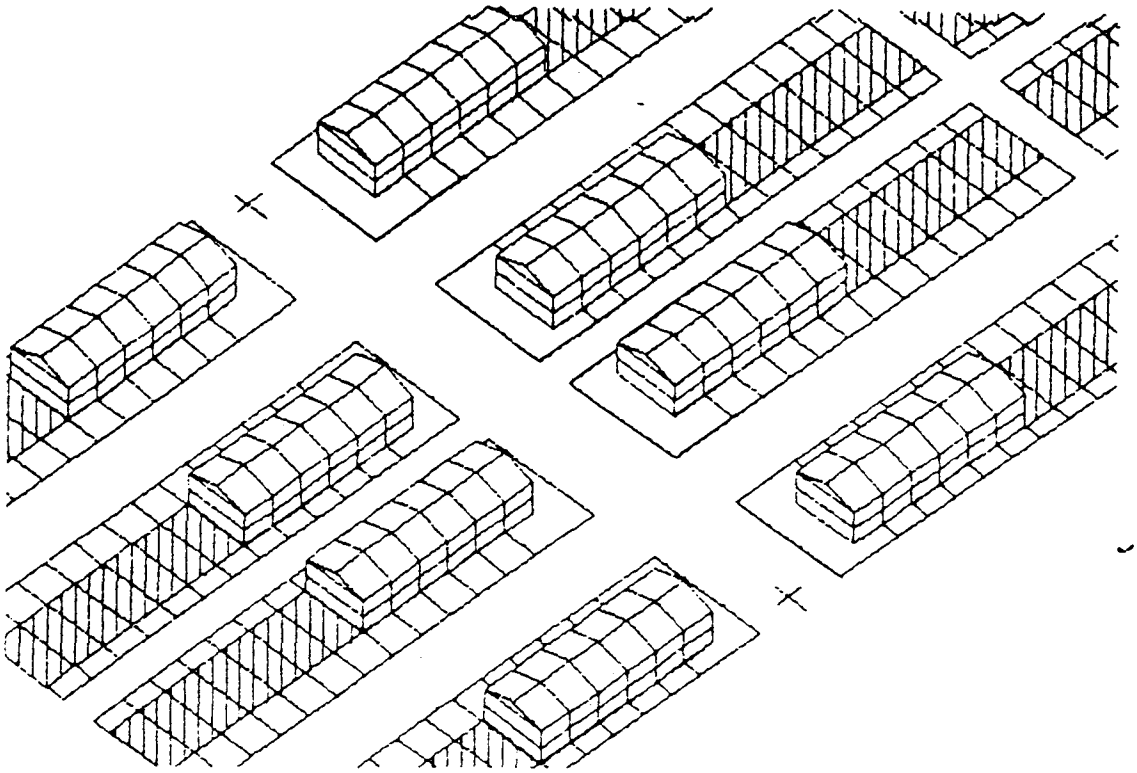
11-Apr-89	Middle Income Alternative Plot Type	SLCHP Guidelines Standard plot	SLCHP Guidelines Corner Plot	Iteration (4) Standard plot	Iteration (4) Corner Plot	Iteration (5) Standard plot	Iteration (5) Corner Plot	Iteration (6) Standard plot	Iteration (6) Corner Plot
A. Unit Sale Price (units)	A	B	C	D	E	F	G	H	I
Sale Price of Construction M$/m2	225	200	200	200	200	200	200	200	200
Sale Price of Land M$/m2	30	30	30	30	30	30	30	30	30
Infrastructure Sale Price M$/m2	45	40	40	40	40	40	40	40	40
B. Plot Geometry Regulations									
Plot area m2	139	68	< 142.37 >	68	< 90.67 >	68	< 68.00 >	68	< 68.00 >
Plot Frontage m	6	4.27	< 8.94 >	6	< 8 >	6	< 6 >	6	< 6 >
Plot length m	< 23.17 >	< 15.93 >	< 15.93 >	< 11.33 >	< 11.33 >	< 11.33 >	< 11.33 >	< 11.33 >	< 11.33 >
Front Set back m	5	4.67	4.67	3	3	3	3	3	3
Back set back m	3	2.5	2.5	3.5	2.5	3.5	2.5	3.5	2.5
Side set back m	0	0	4.67	0	2	0	0	0	0
Max.Ground Buildable Area m2	< 91.00 >	< 37.38 >	< 37.38 >	< 29.00 >	< 35.00 >	< 29.00 >	< 35.00 >	< 29.00 >	< 35.00 >
Actual Builded Area m2	82	21	21	26.5	33	26.5	33	24.5	33
Number of floors	1	2	2	2	2	2	2	2	2
Floor space/ plot m2	< 82 >	< 42 >	< 42 >	< 53 >	< 66 >	< 53 >	< 66 >	< 49 >	< 66 >
Plot Floor Area Ratio	< 0.59 >	< 0.62 >	< 0.30 >	< 0.78 >	< 0.73 >	< 0.78 >	< 0.97 >	< 0.72 >	< 0.97 >
C. Site Land Use Regulations									
Percentage of corner plots			15.00%		15.00%		15.00%		15.00%
% of Salable land	45%		44%		55%		55%		50%
Site Floor Area Ratio	< 0.27 >		< 0.23 >		< 0.42 >		< 0.44 >		< 0.38 >
C. Costs per Dwelling Unit									
Cost of Superstructure M$	< 18,450 >	< 8,400 >	< 8,400 >	< 10,600 >	< 13,200 >	< 10,600 >	< 13,200 >	< 9,800 >	< 13,200 >
Cost of Plot M$	< 23,167 >	< 10,755 >	< 22,517 >	< 8,655 >	< 11,539 >	< 8,655 >	< 8,655 >	< 9,520 >	< 9,520 >
Total Cost per Dwel.Unit M$	< 41,617 >	< 19,155 >	< 30,917 >	< 19,255 >	< 24,739 >	< 19,255 >	< 21,855 >	< 19,320 >	< 22,720 >
D. Profits Percentages Assumption									
Profit/m2 of Construction	15%		15%		15%		15%		15%
Profit/m2 of Land	10%		10%		10%		10%		10%
F. Average Profit/ha by Site									
Profit/Ha M$	< 164,595 >		<140,453 >		<196,985 >		<203,335 >		<183,713 >
Profit incentive(disencentive)			<(24,142)>		< 32,390 >		< 38,739 >		< 19,118 >
as a % of alternative profit			< -15%>		< 20%>		< 24%>		< 12%>
G. Additional Indicators									
Profit per Plot		< 2,335 >	< 3,512 >	< 2,455 >	< 3,134 >	< 2,455 >	< 2,845 >	< 2,422 >	< 2,932 >
number of plots/ha		< 47.53 >	< 8.39 >	< 65.48 >	< 11.55 >	< 68.75 >	< 12.13 >	< 62.50 >	< 11.03 >
Total number of plot/ha			< 55.92 >		< 77.03 >		< 80.88 >		< 73.53 >
Average household size	5								
Population Density People/Ha			< 280 >		< 385 >		< 404 >		< 368 >

Note: Calculated outputs are shown as <...>. ====== Indicates a change in parameter over previous iteration
Parameters in column B and C line 18 to 46 correspond to minimum standards explicitly or implicitly contained in SLHCP guidelines

Site Plan Corresponding to SLCHP Guidelines /a

44 % of Salable Land
20.5 % Community Facilities
35.5 % Roads
FAR: 0.23

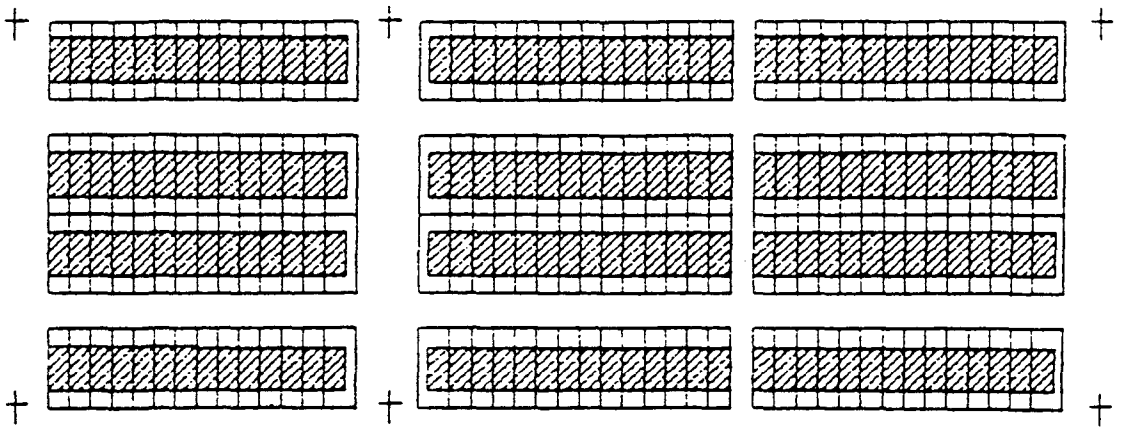


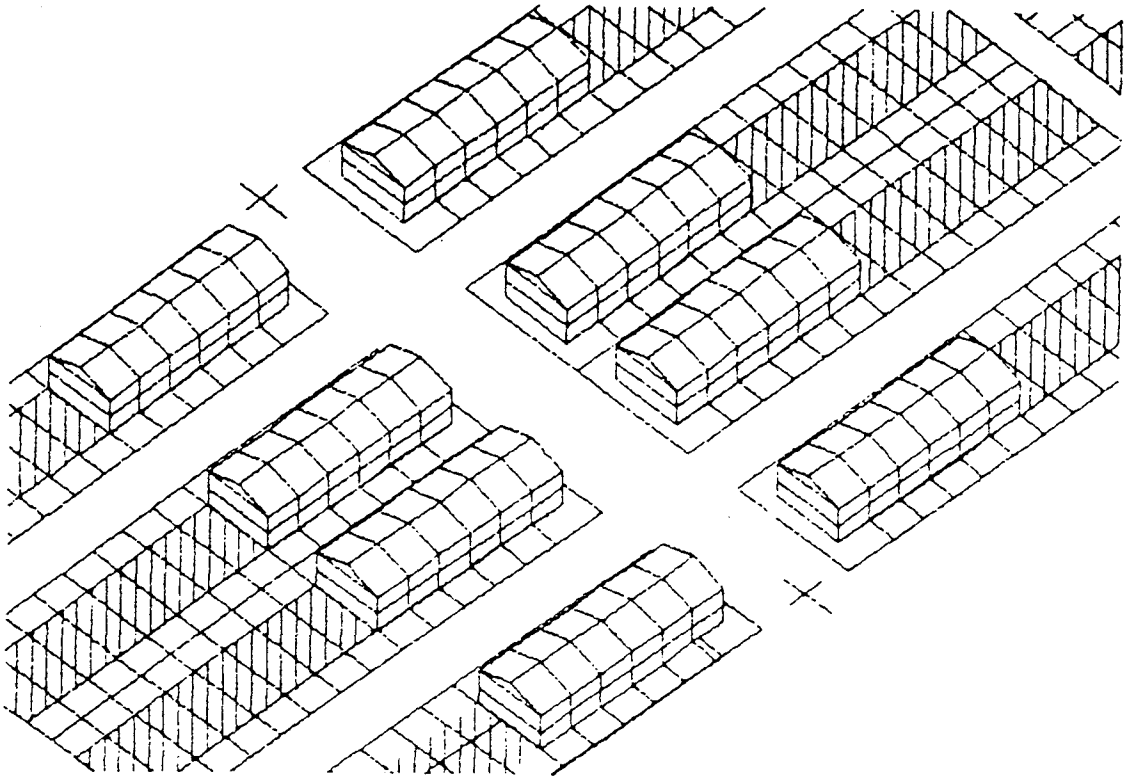


/a Discussed in text para. 5.27 and Table 5.4.

Site Plan Corresponding to Iteration (3) /a

55 % of Salable land
19.4 % Community Facilities
25.6 % Roads
FAR: 0.41





/a Discussed in text para. 5.27 and Tables 5.4 and 5.5.

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