HOUSING FINANCE AND HOUSING SUBSIDIES IN BARBADOS

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Aknowledgements

This report is part of a larger study prepared under contract with the Government of Barbados, Ministry of Public Works, Transport and Housing, on the Barbados Housing Market, with an emphasis on low and moderate income housing. The study was conducted in preparation of a potential project with the Inter-American Development Bank. The authors wish to thank the many people in Barbados who kindly assisted in the investigation and analysis of the housing sector, in particular Ms. Margaret Talma of the Project Management Unit of the Urban Development commission, and the local housing housing finance consultants David Millington and Shelley Lashley. The conclusions reached and views expressed are entirely those of the authors.

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KEY CONCLUSIONS

Barbados has a relatively well developed financial sector and an equally well developed housing finance sector. Nearly all institutions are open to lending as far down the income spectrum as fits their conventional criteria (in effect, the entire middle class). As importantly, there are several institutions which are actively seeking to expand market share by offering better service and new products. However, competition along the line of rates has not taken root after a long period of rates being administered by the Central Bank.

Also, none of this competition is explicitly oriented towards going further down the income range. Indeed, most of the efforts by the credit unions are oriented to moving further into mainstream mortgage lending to the middle class. While product improvements by lenders, including 95 percent LTV loans for 25 years and various arrangements designed to reduce transactions costs, do marginally expand the housing credit opportunities of lower-middle class families, there is no private (or public) entity seeking to radically expand those options for lower income levels. Nor are there special incentives for lending institutions to move down market apart from increasing market share.

It appears that there are few significant innovations left to be made with respect to housing credit for lower income households without introducing subsidies in combination with more efficient land development and housing standards, and reforms in the chattel housing sector. The chattel housing sector is heavily burdened by the legacy of past government intervention and can probably only be resolved with further major government programs and well targeted subsidies. The present low-income housing subsidy situation is clouded by the presence of deep and ill-targeted subsidies through the National Housing Corporation. Any new subsidy schemes will have to redefine the NHC programs, integrate useful elements from these programs into them and focus on improving the allocative and productive efficiency.

The largest of the lenders, the trust companies and the insurance companies, are well connected to the rest of the financial system and thus there is unlikely to be liquidity issues for the sector as a whole. There are presently no evident other needs for a secondary market mode of funding, since there are already wholesale funds available to most lenders at an all-in rate that is not much more than rate on government debt which an unsubsidized secondary market cannot match. If private lenders or investors would feel the need to make existing whole-sale lending operations more efficient and liquid, government could be requested to establish the necessary legal and regulatory infrastructure to facilitate, for example, the establishment of a privately-owned mortgage trust to acquire mortgages and issue mortgage bonds. There appear to be no social policy reasons to commit implicit or explicit government subsidies for secondary market development.

I BACKGROUND AND CONTEXT

This report on the housing finance sector and housing subsidy systems in Barbados is part of a larger report supporting the preparation for a housing sector and neighborhood upgrading program subject to formulation by the Government of Barbados (GOB) and the Inter-American Development bank (IDB). The program is expected to be focused on improving housing opportunities for low and moderate income urban households, but the potential policy agenda includes the entire housing sector. The goal of the program is to improve the cost efficiency and social effectiveness of housing delivery systems, whether subsidized or unsubsidized.

It is widely recognized today that housing finance is a key determinant of the efficacy of housing delivery systems. Just as the general financial system is the “brain” of the economy, directing sustaining resources in response to signals from producers, consumers and intermediaries, so does the housing finance sector support the efforts of households to provide themselves housing, whether basic shelter or luxury homes, and the efforts of producers to operate in that market. Inefficiencies in the housing finance sector have direct effects on the cost of providing housing and ultimately on the success of many individual households in achieving home-ownership.

The housing finance sector can also be a tool for redistributing wealth within a society, by using tax funds or other resources gained from the better-off households to subsidize the housing finance of the less well-off. Usually such efforts conflict with the overall efficiency of the sector and are generally not considered advisable.

Apart from housing finance subsidies, governments have used a variety of other direct and indirect subsidies to achieve their housing goals. These subsidies intend either to stimulate housing markets to provide housing for modest income households or directly provide housing to those who are unable to access housing through the market. However, many subsidy programs fail to reach their objectives or are unnecessarily costly to the economy and many governments in advanced and emerging economies alike are reassessing their existing subsidy programs.

This study examines the efficiency and effectiveness of the housing finance system and the different subsidy programs in Barbados. The report starts with an overview of the Barbadian economy and its recent history. After a brief description of the financial sector we first discuss the structure of the Barbados housing market before analyzing the housing finance sub-sector in more detail. The strengths and weaknesses of the housing finance sector are delineated, including the potential role of a secondary mortgage market mechanism. Recommendations are presented for measures to improve the efficacy of the housing finance sector, particularly from the point of view of encouraging access by lower income households. The last part of the report evaluates existing housing subsidy programs and proposes an integrated and simplified subsidy system that can reach a larger proportion of deserving households and addresses a variety of priority housing problems in Barbados.

In recent years several detailed studies have been undertaken of the financial sector and the housing finance system in Barbados. This study draws heavily on these previous works.

II ECONOMIC AND FINANCIAL ENVIRONMENT

A. The Economy

Barbados has a small population, only about 270,000 residents, and a small land mass, only 431 square kilometers. However, it has a relatively prosperous economy, with per capita GDP reaching about US$ 7200 in 1997.[1] Moreover this prosperity is more evenly distributed than in many other countries, with a well-established middle class encompassing an unusually large portion of the population. In both regards, Barbados seems to stand apart from many of its neighbors in the Lesser Antilles, where incomes are lower and there is more divergence in outcomes.[2]

One hundred years ago, Barbados was primarily an agricultural economy, built upon sugar cane production under a plantation system. This economy dated back to the 17th century, when large numbers of slaves were brought in to support the development of one of the world's first sugar economies. Slavery was abolished in 1834, but in contrast to some countries such as Trinidad and the Guyanas, large numbers of indentured laborers were not brought in from Asia to replace the African labor force. Social and political struggle, relatively peaceful but intense, eventually brought universal voting rights in 1950, followed by independence in 1966.

Independence coincided with the birth of the modern tourist industry, based on access to the island by inexpensive air and cruise ship transport. In the process, sugar's role fell drastically, contributing only 3 percent of GDP in 1994. Tourism's contribution meanwhile rose to 16 percent. Manufacturing has also contributed to the economic base. It maintained a share of GDP of between 9 and 11 percent since 1970, but the composition has changed radically from an emphasis on clothing and electronic components to financial services and "informatics," including keypunching and programming. Retail, government, and general business comprised half of the economy.

Not surprisingly in an economy based largely on services, educational attainment is relatively high, with literacy measured at over 98 percent. Barbados has one of the three main campuses of the University of the West Indies, which offers graduate degrees in many areas, including business management (but not finance).

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[1] This figure ignores the notably elevated cost of living on the island. The purchasing-power-parity version of GDP per capita would be significantly lower.

[2] An analysis of the reasons why Barbados has been so successful in these regards is beyond the scope of this study. It has been observed that the long history of relative stability in relationships between the British, both as plantation owners and governors, and the rest of the Barbadian population encouraged the deeper rooting of British institutions and norms. (Several sources note that the difficulty of invading the island kept it continuously under British rule and the flatness of the island discouraged the formation of a "maroon" society of escaped slaves.) For whatever reason, there is an emphasis on education, relatively civil and productive political discourse, an effective civil service, and a vibrant private business sector. Access to employment opportunities in Canadian, British and American labor markets seems to have also encouraged transfer of cutting-edge knowledge, as well as remittances and investments. Finally, the special aspects of Barbadian culture have increased the tourist potential of the island.

The tourism sector is diversified over the UK, the U.S., and Canada. The UK provides the largest number of visitors, but Canada provides a very large number relative to its population.

B. Recent Economic History

By any measure, Barbados is quite a prosperous place for a developing country. However, trends in that prosperity have been uneven and overall economic growth is seemingly modest. By the standard measure of GDP per capita, growth has been only about 1 percent per year since 1970, suggesting that real consumption should be about one-third higher in 1998 than in 1970. However, other measures of prosperity seem to suggest more rapid growth, including nearly a tripling in private car registrations and a 400 percent increase in electricity usage since 1970.[3] This expansion in economic well-being is also reflected in housing data, with number of dwellings with 3 or fewer rooms declining from 36 percent in the 1970 Census to 22 percent in 1990, and presumably to below 20 percent since then.

Barbados has not been immune to economic cycles, although it has generally avoided the severe ones that have afflicted some developing countries. There have been three recessions since 1970, coinciding with the worldwide recessions in 1972-75, 1981-82, and 1990-1992. Worldwide recessions directly impact Barbados through declines in tourism and demand for exports. The most recent recession was one of the most severe, with a cumulative decline in real GDP of 13 percent from 1989 to 1993.

Despite these economic cycles, Barbados has maintained a remarkable degree of monetary stability, with the Barbados dollar (BD) always being pegged to a strong currency, first the British pound and then at 2 dollars to each U.S. dollar (USD) since 1975. This has imposed a certain amount of discipline on government fiscal policy, as well as pain when fiscal policy was inconsistent with economic conditions. It has limited inflation to an average of 3 percent since 1985, and encouraged the continued deepening of the financial sector. While exchange rate uncertainties exist these do not dominate financial activities. Most importantly, interest rates do not have a large component of inflation expectations that could distort long-term lending rates, such as those for housing.

The recent recession was primarily caused by a precipitous decline in tourist arrivals with the advent of the Iraq-Kuwait tensions in 1990. Arrivals in 1992 were down 16 percent from those in 1989, and only a modest recovery was achieved in 1993. Only in 1997 did arrivals, and economic output, rebound to their former levels. This period of economic crisis saw the official unemployment rate rise from about 15 percent to over 25 percent, and now declining back down to 14 percent.

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[3] An official of the Central Bank commented that there is a long-running controversy with respect to measuring real GDP growth, but did not wish to attempt to summarize the issues.

Coinciding with the recession were large public deficits and a foreign reserve crisis. The combination of the two, forced interest rates to high levels, with short-term loan rates climbing to over 15 percent in 1992. Since then, lending rates have come down to around 11 percent and remain under downward pressure due to excess liquidity in the banking sector, despite a higher issuance of government debt.

A recent complication has been an important structural shift away from a variety of indirect taxes and towards a value-added tax (VAT). This has caused some dislocation as relative prices of goods and services have changed resulting in an uptick in reported inflation, as price increases under the VAT have not been matched by price decreases due to declines in indirect taxes. Measured inflation for 1997 was about 5 percent, up from only 2.4 percent in 1996, but it is expected to fall back to the 2 percent range in 1998. Since this additional inflation is not a monetary phenomenon, but is instead due to a shift in tax regimes, it should not be, and was not, reflected in a rise in nominal interest rates. Indeed, interest rates have continued under downward pressure, hovering in the range they occupied during most of the 1970s and 1980s.

The housing economy retreated during the recent recession as well. Demand for new housing dropped sharply, and both applications for electrical connections (a coincident measure) and approval of plans by the health and safety authorities (a leading measure) fell by 50 percent from 1989 to 1994. However, according to views expressed by various observers, the values of land and housing remained persistently strong.

C. Financial Markets[4]

In keeping with the status of Barbados as a middle-income country, the financial sector is relatively well-developed, though incomplete in several important aspects. The ratio of banking assets to GDP is about 90 percent, up from 56 percent in 1986. Domestic insurance assets were equal to about 20 percent of GDP, up from 13 percent 10 years before. Domestic government debt in 1996 stood at 50 percent of GDP, up from 25 percent. All of these figures indicate an economy with a reasonably well-functioning system of financial intermediation.

On the other hand, the equity and bond markets are underdeveloped. The Central Bank must rely on relatively awkward devices such as setting a minimum deposit rate and varying the liquidity reserve to regulate the money supply. Long-term government debt is sold by subscription rather than auction. There are no markets for hedging exchange rate risk and overseas capital outflows are subject to administrative approvals. Credit levels and lending rates were administered by the Central Bank until a few years ago.

[4] This section draws heavily on a recent report to the IDB by M.G. Zephirin, "A Diagnostic Study of the Financial System of Barbados," November 1997. The discussion here is intended primarily to help make this report self-contained and the earlier study should be referred to for greater understanding of the overall financial system.

There are 7 commercial banks with 40 branches. Two of the banks are branches of large Canadian banks, one is a 70 percent-owned subsidiary of another large Canadian bank, one is a branch of a British bank, one is a Caribbean-owned bank, one is owned by private Barbados-based entities and one is owned by the Barbados government.[5] Of these banks, the three largest held some 60 percent of the total assets in 1996, which suggests a significant degree of concentration, but not necessarily a worrisome one given the presence of 3 to 4 viable competitors.[6]

There is no deposit insurance offered by the government at the moment, but plans are underway to institute it. Notably, it appears that the only major bank that does not have a strong balance sheet nor a strong private parent is the government-owned bank, the Barbados National Bank (BNB). The BNB benefits from an explicit government guarantee at the moment and will continue to be perceived as implicitly guaranteed after the explicit guarantee ends. But, apparently in an effort to discipline BNB and to ensure stability of the deposit base, especially in the newer, smaller competitors, it has been decided that the adoption of a formal deposit insurance system is worth the costs and moral hazards created.

A closely related element in the financial system is the so-called trust company. These institutions encompass assets equal to another 12 percent of GDP, which puts the assets of the total banking sector over 100 percent of GDP. Trust companies operate as subsidiaries of the banks, and, although some apparently do some actual trust and estates work, the bulk of their activities and assets involve residential mortgages. In fact, substantively these entities appear to be a convenient mode of securing medium-term funding and making long-term loans that could be subsumed under the commercial bank format except for a quirk in the regulatory structure (as discussed below).

Substantial assets are also being held in formal retirement savings arrangements. The largest of these funds is the National Insurance Fund (NIF), which is a social security fund for non-civil servants.[7] The assets of the NIF were about 20 percent of GDP. These funds were channeled into a range of assets, including 66 percent in government debt (nearly all long-term), 20 percent in bank deposits, and 13 percent in non-government debt and equities.

As a supplement to the NIF, there are substantial private pension funds. Most of these funds are managed by the insurance companies in the form of segregated accounts which totaled 7 percent of GDP in 1996. These are invested in a mix of stocks, government debt, real estate, and mortgages.

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[5] The presence of Canadian banks throughout the Caribbean apparently reflects close trading links in fish and timber in the early 20th century. The major role played by Barclays reflects the colonial past, when the bank was used by the colonial government for its affairs.

[6] There are also entities called finance companies that seem to take deposits from the public and use them for consumer finance. Assets of these totaled only 1 percent of financial assets in 1996. Moreover, depositors were chastened by the failure of one of these institutions a few years ago.

[7] Apparently, the civil service pension fund (which is pay-as-you-go) is being phased out in favor of universal coverage by the NIF.

The last group of major actors in the financial system are the credit unions. As of 1997, there were 50 credit unions with total assets equal to about 7 percent of GDP. The majority operate in the traditional mold of small groups with relatively close bonds and unpaid officers. However, 13 of the credit unions have assets in excess of BD 2 million (USD 1 million). The three largest all hold assets over BD 25 million, have professional staffs, and hold 70 percent of the assets of credit unions.

All the financial institutions are regulated and supervised by the Central Bank of Barbados (CBB) except for the credit unions, which are regulated by the Registrar of Cooperatives. Most of the CBB regulatory structure seems to conform with international norms, including the standard of 8 percent capital, a 50 percent risk weight assigned to mortgage loans against owner-occupied housing, and the usual provisioning requirements (but see below on application).

The recent report to the Ministry of Finance by Maxwell Stamp and Company on “Reform of the Supervision and Regulation of Financial Institutions – Barbados” contains a number of recommendations with respect to regulation of banks and credit unions. The Maxwell Stamp report, the Zephirin report, and the recent report by KPMG Peat Marwick on the feasibility of a secondary mortgage market are indications of the continuing efforts by the Barbadian authorities to upgrade the financial sector.

III. AN OVERVIEW OF THE HOUSING MARKET[8]

Barbados has a well functioning land and housing market, which will be described in more detail in the main report. This section focuses on those aspects of the market pertinent for an understanding of the housing finance and subsidy programs.

A. Housing Stock and Housing Production

In general, the housing market seems to have been responsive to market forces over the last three decades, with a relatively strong flow of new units and a rather significant shift in the quality of the existing stock. As a result, overall housing conditions today are relatively good. In 1990 there were 75,210 occupied housing units in Barbados for 75,170 households and a total population of 260,490, or approximately 3.5 persons per unit. Close to 7000 units were unoccupied, including at least 400 abandoned or ruined structures. This high vacancy rate may be due to Barbadian families living overseas but maintaining a homestead on the island..

The great majority, 76 percent, of housing units are owner-occupied, up from 70 percent in 1970. Owner-occupation is slightly less in the coastal urban corridor than in the rest of the country. Close to 16 percent of the units are privately rented, 5 percent is government rented, while 3 percent is rent free.

The quality of housing is generally good and improving. Since 1970, the amount of living space per person expanded significantly. Not only did the average numbers of people per housing unit decline from 4.0 to 3.5, but also the share of the stock with 3 rooms or less fell from 40 percent to 22 percent.

The most dramatic trend in the housing market is the decrease in the proportion of timber houses and the increase in masonry ones. In 1970, a full 75 percent of all housing units in Barbados were classified as wooden. This share had fallen to 57 percent by 1980 and further to 40 percent in 1990. If this rate of decline continued in the 1990s, the share would now be about 25 percent.

This transformation to masonry structures may be related to two trends, 1) the heavy preponderance of masonry homes in new housing being built and, 2) the addition of a masonry portion to existing timber houses or the gradual replacement of wooden walls. The prevalence of new masonry homes can not be proven, but the most relevant data are probably those on approvals of new dwellings by the Town and Country Planning and Environmental Engineering Departments (EED). The EED data indicate that only 4 percent of all approvals of new housing between 1981 and 1996 was for wood units. Presumably, these data also reflect the decline in the number of chattel tenantries, with residents installing masonry sanitary blocks as they acquire title to a plot.

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[8] This section relies heavily on data compiled in the report, “Settlements and Shelter Development in Barbados”, prepared by Andrew Downes, Clyde Mascoll, and Cheryl Cadogan, February, 1996.

The second influence, the addition of a masonry portion or gradual replacement, is evident in the data on absolute levels of units by type. There were 44,096 wood units in 1970 and only 30,004 in 1990, a decline of 14,000 units. Meanwhile, the number of wood and masonry units was up by 13,400. Some of the wood and masonry units may be new (9 percent of EED approvals were of such type), but the large bulk represent upgrading of existing wood houses. Indeed, the gradual improvement and extension of owner-occupied houses is a major force in the production of housing services (EED approvals for renovation of housing units ranged from 350 to 600 per year since 1990).

The great majority of houses are connected to water and electricity. The sewer system is small but is being extended and presently most households have either a suckwell or a pit latrine (32 percent).

The Census data indicate that the overall housing stock grew at a rate of about 800 units a year between 1980 and 1990. This net increase of about 1 percent a year, certainly outpaced the growth in population, but just about equaled the growth in households. The overall population growth rate varied little during the last few decades and has averaged at 0.44 percent since 1970. However, the growth rate in the number of households has been considerably higher with an average of 1.4 percent during the period 1970 - 1980, and 1.1 percent from 1980 to 1990, due to a decrease in household size related to demographic and socioeconomic factors. While the average household size was 4 persons in 1970, it was only 3.4 persons in 1990 and estimated at 3.2 persons in 1997.

Since 1990, the number of households increased by approximately 7,550 and was estimated at 82,700 in 1997. The number of applications for new houses approved by the EED since 1990 appears to have slightly outnumbered the estimated increase in the number of households since 1990. However, the number of applications and approvals decreased noticeably during the recession years. Moreover, the number of approvals do not detail whether these new units were additions to the stock or replacements of existing houses. Also, there may have been some increase in the number of vacant units, both of the deteriorated or abandoned type and of two-residence (one overseas) households.

The great majority of new houses is constructed by contractors or builders directly for home-owners. Private developers and contractors acquiring and developing land and building for the market produce only a small proportion of new houses. During the period 1970-90 the public sector, particularly through the National Housing Corporation, provided 40 percent of new houses. This has decreased significantly since then (only 144 units have been produced since 1993) and the NHC has moved towards the production of serviced sites.

Apart from the construction of new homes, there is transfer activity in existing residential properties. According to figures from the valuation section of the Land Tax Department, an average of 900 transfers of residential properties per year were registered since 1987. However, according to the Land Tax Department, the majority of these transfers are related to property divisions within a family trust and do not represent market sales of existing houses. Indeed, real estate agents mentioned the lack of existing houses coming to the market in view of the high demand for modestly priced used homes. These facts would suggest that most households adjust their housing consumption by extending or improving their present house, or by acquiring a plot or a house from relatives or through inheritance, and not by transacting existing houses in the market.

Unfortunately, no systematic evidence was obtained on how the lower part of the housing market works, particularly the market for chattel houses and plots. The available evidence suggests that, in urban areas, the market in tenantry-plots is frozen by the accumulated impacts of government interventions, including rent freezes and "right-to-buy" legislation. These regulations have made it more advantageous for tenantry renters to continue to rent their plots because of the low rent compared to tax payments incurred by land-and home owners. Indeed, the tenantry survey conducted as part of this study shows that only slightly more then one third of urban tenantry house-occupants owns both the land and the house. A previous study by the Ministry of Public Works, Transport and Housing on tenantry conditions showed that only 50 percent of the households were interested in buying their plot. As a consequence, investments in affected tenantry houses remains low. Additionally, these regulations have discouraged the provision of additional plots that might have been made available for chattel houses (thereby allowing this special hybrid of owning and renting) and the spatial rearrangement of older chattel houses away from high value locations in the central areas of Bridgetown.

B. Land Markets and Infrastructure Provision

A number of observers have suggested that the land market is distorted by the (supposed) considerable share of available land that is part of large plantation holdings, allegedly often held by absentee owners. However, the high levels of subdivision approvals sought do not appear to support these claims. Also, there is little evidence in the production or cost figures for housing to support the proposition that constraints on access to land have had any negative effect yet on housing.

Other components of the larger study are looking into the present efficiency of land development and infrastructure standards and practices. We will base our estimates of land and development costs (see below) on the findings of these other studies.

C. Housing Requirements, Cost and Affordability

Given the projections of a further decline in the household size for the next decade (3.0 persons in 2005 and 2.8 persons in 2010)[9], the total number of households in Barbados is projected to be 91,000 in 2005 and 96,200 in 2010, an annual average increase of 1050 households over this period. A minimum of 1050 new housing units per year will, therefore, be required for the next ten years without considering the need for

[9] Projections from the Willms and Shier, 1997, study "Environmental Management and Land Use Planning for Sustainable Development for the Ministry of Health and the Environment, GOB.

improvement and replacement of existing houses. The need for the latter is difficult to estimate without a further analysis of the quality of the stock. There are, however, records on the number of major improvements on housing units. During the latter part of the 1980s the number of approvals given by EED for renovations of dwelling units was in the order of 900 to 1000 per year, or slightly more than 1 percent of the housing stock. This number decreased in the early 1990s, particularly during the years of the recession. While we do not know whether this level of major renovations is adequate to maintain the quality of the stock, it seems reasonable to assume a requirement of at least 1000 major renovations per year.

The present income distribution, coupled with projections of income growth and inflation (and its effect on interest-rates) will provide some insight in the type of housing required. A separate demand study is conducted on this topic. For this part of the study a simple analysis of affordability based on estimates of present incomes, housing costs and cost of finance suffices.

The Barbados Poverty Study, conducted in 1997, calculated a median income of close to B$28,000 and a 0.41 gini-co-efficient for the country. The following income distribution was estimated for the entire population.

Household Income Distribution in B$, 1996/97

Percentile	Mean Income
Mean income for entire population	38,450
10^{th} percentile	9,240
20^{th} percentile	14,460
30^{th} percentile	18,720
40^{th} percentile	23,270
50^{th} percentile	27,970
60^{th} percentile	33,020
70^{th} percentile	39,100
80^{th} percentile	47,210
90^{th} percentile	59,830
100^{th} percentile	111,720

These figures are in line with present salaries of civil servants such as primary school teachers and policemen , who are generally considered to earn incomes around the median. For example, police officers earn between B$26,500 - 27,275 and qualified teachers between B$24,500 - 36,000. The minimum wage is presently B$7,29 per hour or B$15,163 per year.

In comparison, the cheapest two bedroom timber house that could be produced in the private sector on a 3000 sq.ft. lot (the present standard), would cost approximately

B$60,000 to B$63,000 depending on location[10]. Legal cost and tax payments would add approximately B$4000. A B$55,000 mortgage (assuming a 10 percent down payment on a B$61,000 house) at 9 percent for 20 years would require approximately B$500 in monthly payments. If 25 percent of income would be allowed for mortgage payments a qualifying household would have to have an income of at least B$24,000[11]. The lowest cost new timber house could, therefore, not be afforded by the 40th percentile of the household income distribution.

While the costs of new housing have increased over the last ten years, these have remained below increases in the overall Consumer Price Index. According to the Index of Housing Costs compiled by the Ministry of Public works, Transport and Housing, the cost per square foot for the construction of a small masonry structure increased 26.8 percent between 1988 and 1995, while over the same period the CPI rose by 31 percent. Further evidence can be found in the estimates adduced in Downes et al. (Table 3.2), that small homes about doubled in price from 1980 to 1995, just about in line with the CPI. Interestingly, these figures and the estimates in Downes et al. for land do suggest an upward tendency in the real cost of land, which is partly offset by a decline in real construction costs.

However, real incomes have declined since the economic downturn of the 1990s. For example, civil servants' salaries were decreased by 8 percent in 1993. As a result, housing became less affordable. The below median income household that could afford a simple two or three bedroom low-cost house in the past, can no longer do so, yet expectations on the type house such household ought to be able to acquire have not changed, according to the developers and prefab home producers. A modest and well targeted subsidy may draw more below-median households into the ownership market and provide an incentive for households to invest in home-improvements.

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[10] Quotation by Marshall's for their timber prefab houses (2 bedroom D$37,000).

[11] The December 1995 Economic Review of the Government of Barbados shows that households spent on average 16.9 percent of the household budget for housing. This figure was up from 13.1 percent in 1978/79.

IV. HOUSING FINANCE

One of the components of housing affordability is the cost and availability of housing credit. This section will discuss the present housing finance system in Barbados, with a special focus on the availability of credit to lower income households.

The housing finance sector has progressed from very modest beginnings in the 1970s to being one of the more vibrant sectors today. As of 1997, it appears that outstanding housing lending is about 16-17 percent of GDP, a level that it has held throughout most of the 1990s (see Table 1). This is a modest amount by developed country standards of 40-50 percent of GDP, but far more than most poorer developing countries. Equally importantly, the sector appears to be relatively competitive and to have access to an elastic supply of funds, and thus its expansion is primarily consumer driven, not subject to government allocations or monopoly restrictions.

A. The Major Mortgage Lenders

There are five significant types of lenders operating as primary mortgage lenders today. These will be briefly discussed.

Trust Companies. The largest group of primary mortgage lenders is referred to as the "trust companies." While always recognized by this term, the actual names of the trust companies can vary significantly, from the largest, the Barclays Finance Corporation, to names such as CIBC Trust and Merchant Bank. In fact, they seem to vary with respect to the extent that they engage in trust administration and other miscellaneous financial activities. What all of these entities have in common is that they take only time deposits, do not offer current accounts, and are active in making residential mortgage loans. What they also have in common is that they are exempted by the CBB from a statutory (cash) reserve of 5 percent and an additional liquidity reserve of 20 percent (formerly 6 and 23 percent respectively until May 1, 1997). This advantage is worth over 1 percent in gross margin on their portfolio, i.e., it permits a rate of about 1 percent less on housing loans than on an equivalent loan through a commercial bank (depending on the rates on deposits paid by trust companies, which are slightly higher than those by commercial banks).

The trust companies had BD 344 million in residential mortgages outstanding at the end of 1996. This constituted 54 percent of the entire mortgage stock. The three largest participants in that market, Barclays (about BD 135 million), CIBC (about BD 105 million), and Royal Bank of Canada (about BD 70 million), held 90 percent of the total. The trust companies as a group have expanded their share of the overall mortgage market, from 40 percent in 1986. As seen in Table 1, it is the trust companies who have persistently expanded the real level of mortgage lending in Barbados. Notably, they have done this despite the tax advantages of the life insurance companies (which pay only a 5% tax rate), the BMFC (which pays only a 12.5 % rate) and the credit unions (which pay no taxes and have tax subsidized deposits).

The trust companies raise their funds by taking term deposits for periods as short as 6 months. Traditionally, they specialized in longer terms, generally over 1 year. But, since 1990-92 when deposit interest rates rose sharply, depositors prefer terms of 1 year or less. Trust company may seek additional funding from their parent bank, provide excess funds to the parent bank, or use excess liquidity for other activities.[12] Some reports commented that the trust companies also originate mortgages for pension funds or other parties, but none of the companies interviewed said that they serviced loans for anyone other than their own account.

Current rates offered to the public on term deposits are 4 to 5 percent for 1 year. Apparently, the trust companies raise a substantial amount of funds from institutional investors, including insurance companies, pension funds, and the NIF and pay a premium for such funds. For example, one of the largest trust companies reported paying interest equal to 5.77 percent on its customers' deposits in 1996, at a time that quoted rates were 5.0-5.5 percent. The bulk of the funds do come from institutional sources, primarily the insurance companies, the pension funds that they administer, and the National Insurance Fund (the "Social Security" system).

The same trust reported an average yield on its loan portfolio of 11 percent in 1996 (when basic mortgage rates were at 10 percent), suggesting a gross margin of about 5 percent (in this case generating a 28 percent after-tax return on equity). This is consistent with the target margin of 4 percent or so mentioned by some commentators for basic mortgages, recognizing that a portion of the portfolio is invested in bridging and commercial loans that earn 2 percent more than the prime rate (which was 10 percent for the period). It was noted that the trust companies experienced a different state of affairs when deposit rates hit 9 percent in 1992, while loan rates were capped at 11 percent.

The three largest trusts had operating costs that averaged 1.5 percent of loans outstanding. However, a significant portion of these are fixed costs. All are exhibiting positive economies of scale and, at current margins, have significant incentives to grow their book of loans.[13]

The trusts are well capitalized and appear to be well managed. The capital ratio of the four largest trusts is 7 percent, while the minimum capital needed for residential mortgage lending is only 4 percent. One large trust has a ratio of only 5.2 percent, but it also has one of the more conservative operating policies. All of the large trusts are very profitable at the moment, but this was not the case during the recent recession, when margins were squeezed, early repayments increased and loan origination activity plummeted.

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[12] There was a variety of attitudes among the trust companies with respect to integrating funding with that of the parent bank. However, all agreed that they had access to parent bank resources as needed.

[13] For example, the three largest trusts reported slightly lower operating expenses in 1996 over 1995, while reporting 12 percent higher revenues.

Insurers. The next largest type of lender are the insurance companies, particularly Barbados Mutual Life Assurance Society and Life of Barbados. The Mutual has over BD 1 billion in assets under management (from operations all around the Caribbean), both for their own portfolio and for private pension funds. Life of Barbados has more policyholders in Barbados but only BD 323 million in assets, including for pension funds. All of the insurance companies together report to the CBB holdings of about BD 800 million in Barbados-based non-pension-fund assets, of which BD 160 million are in residential mortgages. The insurers have had between 25 and 30 percent of the mortgage market since 1980, according to the economic cycle, with a low of 25 percent in 1996 and some recovery in 1997.

It is commonly stated that mortgages made by insurance companies are ancillary to the sale of insurance products and that insurance companies are somehow not regular participants in the market. This is contested by the insurance companies, which note that they are looking for long-term debt instruments for both their investment portfolios and consider mortgages to be an attractive asset. Apparently, although they use their network of agents to market their loans and do require a life insurance policy for the amount of the mortgage, they routinely make loans in the same manner as the trust companies do, to the general public. Moreover, they are only looking for a relatively small margin of 2-2.5 percent over competing returns in government bonds (they acknowledge the presence of additional returns from the sale of associated insurance products). Moreover, while there are indications that the Mutual deals primarily with a higher income clientele, Life of Barbados seems to operate in the same market as the trust companies.

BMFC. Another type of lender is the Barbados Mortgage Finance Company (BMFC). The BMFC is a unique institution, sponsored by the GOB and funded in an *ad hoc* manner by GOB-related institutions. It is commonly stated (but incorrectly) that housing finance began in 1970 with the BMFC, founded in 1968 by the Commonwealth Development Corporation and the GOB.[14] In 1978, the GOB, in the form of the BNB, acquired 99 percent of the BMFC and it is legally a part of BNB today. However, it appears to operate fairly independently of the BNB, which is desirable considering the burden on BNB of an accumulation of results of bad lending practices.

As of the end of 1996, the BMFC had BD 101 million in mortgages outstanding, which gave it one of the largest single portfolios of housing loans. Although small compared to regular mortgages, it also has one of the largest portfolios of chattel mortgages. But it has been hampered in its operations by its reliance on loans from GOB-related institutions, at slightly concessionary interest rates, and from a tight limit on its own margin, all originally designed to provide its target market of moderate income households with below-market rates. At the same time, BMFC labors under the adverse provision that all of its borrowers must take out mortgage indemnity insurance by ICB, even when the amount of the loan is less than 75 percent of the value of the house. The

[14] The fact is that the insurance companies had a significant portfolio of mortgage loans in 1970 and have remained larger lenders than BMFC to the present. In addition, several commentators noted the availability of housing loans prior to the BMFC through solicitors acting as agents for wealthier clients looking for investments.

one-time premium is set at 1.5 percent of the amount of the loan, a considerable additional cost for the borrower. The net effect is to discourage borrowers with low loan-to-value ratios and encourage borrowers to borrow at the maximum of 90 percent. Because of these constraints, it has seen its market share fall steadily since the 1970s.

BMFC has always been identified with lending to the more moderate income part of the market. This is illustrated by the average loan outstanding in their portfolio in 1996 of BD 43,000, in contrast to an average of B$82,000 for trust companies.[15] Also, BMFC issues chattel mortgages for "movable" houses on leased land for a maximum period of 15 years and ranging from B$10,000 to 40,000 (it has close to 300 chattel mortgages on its books). However, after several years of stagnant portfolio growth, the BMFC raised its maximum loan amount to BD 175,000, making it more competitive with the trusts. Under the present lending terms this maximum would be affordable by a household in the top 10 percent of the income distributon. Thus, in 1995, the average new loan size for regular mortgages was BD 96,000 in comparison with an average of BD 101,000 for the trusts. In addition, BMFC is no longer charging a lower interest rate (but it claims to charge lower fees). Thus, it appears that BMFC has regained forward momentum, but only by expanding into the prime middle-class markets on a market-rate basis.

An aspect of the BMFC that is somewhat difficult to analyze is its funding. Apparently, it operates on a reverse pricing process. Traditionally, it attempted to be under the market as set by the trusts and then set its rate on the funds from its lenders at 2 percent under its rate. Normally, if the BMFC rate were 1 percent under the trusts, this would suggest that its lenders were receiving a rate of 3 percent less than the trust rate. Judging from the pricing practice (only 2 percent spread) of the insurance companies for their managed pension funds, this would be about 1 percent less than the market rate for such wholesale funds. In this context, it is not surprising that, as was noted by the Manager, aside from the HCF (which even grants it a margin of 2.5 percent), other funders, such as BNB, NIB and ICB are reluctant to provide additional funds. As a result, BMFC charges today the same rate as the trusts, 9 percent, which allows it to offer lenders such as the NIF a more acceptable return of 6.5 to 7 percent.

An explicit advantage of BMFC is a special tax rate of 12.5 percent (40 percent is the normal rate for banks) that is provided by law for lenders that meet certain criteria related to lower-income lending. This provision only applies to BMFC and helps to keep its return on equity reasonable, despite its narrow spread. The low tax rate saves BMFC the equivalent of nearly 1 percent in interest rate.

Banks. The next largest type of lender is probably the commercial banks. According to CBB-reported data, the banks themselves hold about BD 35 million in long-term mortgage loans (separate from their construction or home improvement lending), placing them slightly ahead of the credit unions. However, the bulk of these loans, some BD 25 out of BD 35 million, are the result of the trust-type lending operation at the Bank of Nova Scotia being folded into the commercial bank. Thus, it appears that, as commonly

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[15] This difference is exaggerated by the fact that the BMFC portfolio is older, since it has grown at a much slower rate since 1980 than the portfolios of the trusts.

held, commercial banks generally leave the making of long-term housing loans to their trust departments and do not compete with them.

On the other hand, the banks are the most common source of home improvement loans. As noted above, the traditional housing construction practice is to acquire land and incrementally build a substantial house, using personal savings and perhaps a series of shorter-term (5-7 years) home improvement loans. These loans are generally at relatively high effective rates (they are usually called "unsecured" but one commentator said that a first or second mortgage was usually taken). It is claimed that many people would rather pay more for a series of shorter-term credits than face the prospect of a heavy debt repayment for a very long time (despite the option to accelerate repayments).

An intriguing question about the banks is why they do not conduct more of their long-term lending business through their trusts, since the trusts have the advantage of not having to set aside statutory and liquidity reserves. There is no regulatory stricture against doing this. The answer appears to be that, if the banks started to do that, the CBB would remove the exemption or otherwise make its disapproval known. It is preferable for all parties to have housing borrowers benefit from the current arrangement.

Credit Unions. That brings us to the smallest, but a fast growing, portion of the housing loan market, the credit unions of various cooperative societies. Credit unions are governed by the Co-operative Societies Act (1993) and supervised by the Registrar of the Co-operatives Department of the Ministry of Industry, Commerce and Business Development.

At of the end of 1997, there were 50 credit unions (up from 25 in 1978), listing total assets of BD 283 million, of which 70 percent was held by the three largest and 45 percent by the largest, the Barbados Public Workers Credit Union. The amount of total assets was up 30 percent in the two years since 1995. The credit unions have grown at a rapid rate since 1983, primarily under the impetus of a tax deduction for savings deposited in a credit union. This deduction was capped at BD 600 a year initially, but expanded to BD 1200, then BD 1800, and, as of 1997, to BD 3000. In addition, the credit unions benefit from tax exemption. Such advantages probably more than compensate for the additional risks of placing deposits with them and their low economies of scale in operations.

Mortgage lending is a fairly new line of business for credit unions. The Teacher's Union made the first legal mortgage in 1987 and before that HCF provided funding to credit unions only for chattel mortgages. Unfortunately, the credit unions have only recently started to report the composition of their loan portfolios to the Registrar of Cooperatives and there are still some discrepancies in reported figures. At the end of 1997, the Registrar showed a total amount of B$36.8 million in outstanding mortgage loans (481 loans) for all credit unions, of which B$21.5 was held by the Barbados Public Workers' Union. This figure was more than double that of the previous year, showing the rate of growth in the sector. According to data reporting lending activities from March to December of 1997, BD 14 million was made in loans for real estate, suggesting an annual amount of BD 19 million. Based on the detailed breakout provided by one of the larger institutions, more than half of this may be for longer-term mortgages for construction or home purchase and the bulk of the rest for home improvements. This would imply a volume of long-term lending for the year around BD 10 million, placing the sector as the smallest of the participants.

Mortgage loans require house collateral and have a maximum loan amount of approximately 4 to 6 times the amount saved in shares and savings accounts depending on the period of savings and length of membership (the loan multiple for other loans is three times the amount of savings and shares held). The repayment period is decided on the basis of an analysis of the household budget and the size of the loan, but has a maximum of 20 years. Credit unions also issue chattel mortgages for new chattel houses for which the bill of sale is registered in the special chattel mortgage registry.

Bridgetown credit union, the second largest in Barbados, mentioned, however, that they seldom issue whole mortgage loans. Most of the new housing loans are for the acquisition of land and for the construction of the house. After construction of the house is finished the household may take out a mortgage at a trust company and pay back the outstanding credit union loan, freeing up an easy option for borrowing in the future. Since not all financial institutions participate in the credit bureau (see below), customers can easily move debt among different financial institutions.

The credit unions raise their funds mostly through savings deposits or the sale of shares. Fixed deposits often carry higher rates than at commercial banks, but dividends on shares are mostly kept low. On the other hand, share investments are often given a higher borrowing multiple then savings deposits. More recently, some of the larger credit unions have accessed wholesale funding sources. The Public Workers' and the Teachers Credit Unions have taken long-term loans from the National Insurance Fund, the Housing Credit Fund, or the Caribbean Development Bank. This has allowed them to confidently offer mortgages for terms up to 20 years, like the trusts. However, it is not clear that these loans are profitable, given the limited spread available. Indeed, the City of Bridgetown credit union thought the spread of 2 percent too small for it to borrow in the wholesale market. In addition, these funds are limited, due to the reasonable concern of the institutional lenders not to be too large a part of the liabilities of any given institution, with disastrous effects if their credit is withdrawn. The result has been a stop-and-go availability of long-term mortgage funds to members. An additional concern related to a sudden infusion of mortgage funds to credit unions is their capacity to manage the credit risk (see below). Some credit unions that had access to wholesale funds in the early 1990s, including the League itself, expanded their mortgage portfolios carelessly and when real salaries decreased in 1994 a large proportion of their mortgage loans became delinquent.

An analysis of the loan portfolios shows that approximately six of the fifty credit unions are insolvent. These are mostly small community or church-based institutions. A related problem is that of credit risk. Underwriting practices are often weak and so are collection and delinquency procedures. Also, provisions for bad debt are often inadequate. On approximately 8 percent of the total loan amount outstanding in the credit unions, payments are three or more months overdue and 14 percent is one to three months overdue. Figures differ considerably among credit unions, however. Much depends on the professionalism of management and the quality of the Board according to the Registrar.

In 1997, new PEARL (performance, earnings, asset quality, rate of growth, liquidity and structure) performance standards were introduced in order to promote the safety and soundness of the industry (see Appendix). There have also been discussions on the adequacy of supervision of the industry, in particular the supervision of the largest institutions, which function increasingly like regular banks, and the lack of a self-regulatory mechanism. Unfortunately, the movement has been caught up in a rift between factions which has set back the professional development of the membership and fund-raising for support and training activities. It appears likely, however, that the present problems will be resolved soon which will allow the Co-operative and Credit Union League to focus its energy on becoming a strong self-regulatory and support body. In addition, a joint committee could be established to assist in the supervision of the larger credit unions, including members from the Central Bank's supervision department and the Registrar of Co-operatives' office.

Another related aspect of credit unions that should be clarified is the declining emphasis on a common bond between members. In principle membership in a credit union is based on a common workplace (25), church affiliation (12), or geographic location (10). However, relatives of any member can become members as well. It is clear that today, most Barbadians can easily become a member of a large credit union and benefit from the tax advantages and other advantages related to housing lending. This strategic position and the adaptability of its loan products make the credit union movement a strong candidate for the role of widening the mortgage market to accommodate all classes of borrowers. Recent growth in assets and in housing lending is based, however, on the credit unions marketing themselves to the middle class, the traditional market of other lenders, rather than making greater inroads with the supposed traditional market of lower and lower-middle income households.

Lastly, since access to workplace related or other types of credit unions is so widespread, it is uncommon for employers to provide direct financing to their employers for house-construction or purchase, a custom in many developing countries.

B. Special Government Housing Finance Programs

In addition to the regular formal sector lenders, there are several government entities, all associated with the Ministry of Public Works, Transport, and Housing, that are offering credit on a below-market basis to lower-income households. There is also a liquidity facility that makes loans to qualifying lending institutions for targeted housing lending.

The General Workers' Housing Loan Fund of the National Housing Corporation. This fund was set up as early as 1947 to enable sugar workers to become home-owners. In 1958, access was extended to the general workers' population. The fund provides mortgage and unsecured land and housing loans of up to B$60,000 (up fromB$20,000 before 1996, and B$40,000 in 1996) to individuals with incomes not higher than B$ 2,525 per month (which is approximately at the 55th percentile of the income distribution). Interest rates are 12 percent for 7 year loans and 9 percent for loans with terms up to 15 years. Repayments are made at source. Over the past year the total amount of disbursed loans was over B$3 million for 109 loans, an average loan amount of approximately B$28,000. Most approved loans are issued within the year of application and there are no cumulative waiting lists for loan applicants. There are close to 500 active accounts of which 180 are in arrears and, approximately 1100 older, inactive small accounts from before 1986.

NHC Loans with Promissory Notes. A new category of loans for home-improvements and renovation, collateralized by a simple promissory note, was initiated in October 1997. The maximum loan amount is B$5,000, with an interest rate of 12 percent and a maximum repayment period of three years. Qualifying criteria are similar to those of the General Workers' Fund. Approximately 460 loans had been made until the end of January 1998 for a total amount of close to B$2 million. Arrear rates are high for such a new program and run at 10 percent of outstanding loans. Most of the loan recipients are employed in the private sector.

The Urban Housing Loan Programme of the UDC. Another home-lending program has recently been launched by the UDC. It uses almost the same qualification criteria as the two programs mentioned above and issues legal and chattel mortgages up to a maximum of B$60,000, with the bill of sale providing the security for a chattel mortgage. The interest rate is 7 percent, which would be increased to 10 percent in case the loan is in arrears for more than 90 days. The maximum lending period is 15 years. The housing structures for which the loans are sought must carry insurance. It is the intention to review loan beneficiaries and their incomes every two years and to adjust the term of the loan according to the repayment capacity. No loans have so far been issued under this scheme.

Tenantries' Loan Scheme. BNB offers a special government Tenantries' Loan Scheme for old age pensioners or persons earning less than BD100 per week living in tenantries and desiring to buy their land and/or house under the Tenantry Freehold Purchase Act. The maximum loan amount is B$8,000, interest rates are subsidized at 6 percent and the maximum term is 10 years. However, the response to this scheme has been marginal with only 54 loans made to date and the delinquency rate is high at 22 percent. Certainly, the BNB is not advertising the program widely. However, the main reason for the this lack of interest appears to be the overall lack of interest of tenantry owners in acquiring their property under the conditions of the tenantry laws, since present rental conditions are favorable and the chances of eviction are low. Also, regulated land costs in plantation tenantries are so low (B$0.10 per sq.ft.) that people do not need a loan to acquire their plot. If the program is to cover the urban tenantries as well, it ought to be given more publicity and be offered by all lending institutions and not only by BNB. Alternatively, and preferably, it should be folded into a comprehensive new subsidy program.

While the amounts involved in these government programs are relatively small, the total number of participants is significant. Yet, this part of the housing finance sector appears to receive no scrutiny and lacks a systematic supervisory or regulatory framework. Underwriting procedures and capabilities are weak and no systematic information was available as to the volume of such lending or the exact ways the funds are rationed. It appears desirable to document and evaluate the activities of these entities and integrate them into a coordinated plan to assist lower-income households.

*Housing Credit Fund***.** Another notable government institution in housing finance is the Housing Credit Fund (HCF), administered by the Ministry of Public Works, Transport, and Housing as well. The HCF was set up in 1983 to administer funds from a USAID Housing Guaranty loan of US$ 10 million, which involved requirements that loans would only be used for tenantry lots, new housing or home improvements benefiting households at or below a median income level of BD 16,000 a year. The income limit has recently been raised to BD 45,000, which is approximately at the 75th percentile of the household income distribution. Income and other restrictions do not apply to reflows.[16] HCF has also received recoveries from a project of the NHC that was funded by the Venezuelan government. Loans are made to participating institutions for qualifying clients. The intention of the HCF financing program were to induce participating institutions to extend their lending practices to low-income customers. Loans for timber structures were stimulated for the same reason. Current assets are BD 68 million, most of which are in the form of long-term loans to the BMFC, with some small funding of the trust arm of the smallest bank, the Caribbean Commercial Bank, and a large credit union and the credit union league. It also has acted as a development financing arm for the NHC.

The HCF is not an active player in the mortgage market, mostly by virtue of the 20 year terms on its loans to BMFC and the below-market rate at which it extends credit. On the other hand, it has a very small staff and thus is not an expensive burden.

C. Mortgage Products

The following is a brief summary of the predominant mortgage terms and conditions offered by lenders in the market.

[16] It is notable that the original program design called for primarily lending for new houses for households under the median income. This proved to be too difficult and most of the funds went into short-term loans to such families for home improvements, and were then recycled out into refinancing for BMFC loans for houses at higher income levels. (See H. Adelman, Final Report, “Review of Barbados Private Initiatives in Housing,” January, 1988.)

Maturity	10 years to 20-25 years (or years to retirement age) 15 years maximum period for chattel mortgages
Payment-to-Income Ratio	33 percent of gross income
Loan-to-Value Ratio/ Mortgage Insurance	75 percent standard 90-95 percent with mortgage indemnity insurance
Interest Rate	9 percent, subject to change according to market conditions. 12 percent for chattel mortgages
Mortgage Instrument	Discretionary adjustable rate mortgage

This package of features comprises the standard loan offerings. There are several interesting variations around them, however.

Payment-to-Income Ratio. The credit unions do not apply a standard payment-to-income limitation. Instead, they develop a household budget with the client and will allow a repayment that is up to 75 percent of that amount deemed in excess of the basic budget. It is not known how this criteria compares with the conventional one.

Loan-to-Value Ratio. Several lenders reported that most of their business was in loans exceeding the limit of 75 percent of loan-to-value. However, at least one lender does not routinely offer such loans, and when it does so, it uses other underwriting criteria and does not require mortgage insurance. The trust companies are required by the regulators to carry mortgage insurance on high LTV loans.

Several lenders now offer 95 percent LTV loans, but one of them noted that there are few takers. At a 9 percent interest rate, a household can borrow about 3 times their annual income. However, people usually are buying a house costing more than 3 times their annual income, and can not qualify for a loan for a full 95 percent of the value. On the other hand, some parties are talking about 100 percent LTV loans; there is no information on how popular these are. It may, however, be difficult to find insurance companies to provide mortgage insurance on a 100 percent mortgage. For example, ICB mentioned that it would be very unlikely for it to engage in 100 percent LTV insurance even if under pressure from the government to do so.

Mortgage Indemnity Insurance (MII) is offered by local private insurance companies and by the state-owned Insurance Corporation of Barbados (ICB). All BMFC mortgage loans, irrespective of LTV ratios, have to be insured by ICB, while trust companies only have to insure mortgages with higher than 75 percent LTV ratios.

Insurance rates do not vary much among different insurers. One lender quoted a one-time charge of 4.75 percent of the amount between 75 and 90 percent for 90 percent LTV loans, and 7.75 percent of the amount over 90 percent. ICB's rates range from B$5 to 8 per B$1000 depending on the LTV ratio. While quoted rates did not differ much, there was a discrepancy between the reported extend of the coverage by the insurance companies and some of the lending agencies. ICB's insurance covers the outstanding principle amount, and all additional amounts due in the case of a foreclosure, e.g., accrued interest, legal expenses, penalties. One lender mentioned that coverage through its insurance company only was for the difference between the amount at a 75 percent LTV level and current principle amount and that additional costs due in case of foreclosure where not included.

Interest Rate. In contrast to the practice in the US, but consistent with practices in Canada and the UK, the lender is free to vary the interest rate unilaterally. Experience with this is actually scarce in Barbados, because the GOB had been setting the interest rate by regulation until 1992. Since then, lenders have been free to act, but they have persisted in changing the rate only in increments of 1 percent and only by consensus of the lenders (the trust companies are the price setters, with the other lenders following their lead). See Table 2 for the interest rates applicable since 1980.

There is no requirement that the rates on existing loans be changed simultaneously with those on new loans, but it appears that most lenders consider that not doing so would cost them goodwill with their borrowers. For similar reasons, lenders frequently do not enforce their right to charge an additional three months interest in cases of early prepayment.

The current interest rate of 9 percent is higher than that for a 1-year adjustable mortgage in the US, but the difference is not extraordinary.[17] As of March 1998, the effective rate in the US would be about 7.8 percent (fixed rate loans are at only 7 percent, but it can be expected that the adjustable rate loans will be lower than that in the future). Medium term government debt in Barbados is at 7 percent, also about 100-120 basis points higher than medium-term US government debt. At current inflation rates of about 2 percent in both countries, 9 percent constitutes a 7 percent real rate, in line with real rates (ignoring the tax deductibility of interest) when set by the CBB in the 1980s. The stated spread sought by lenders of 4-5 percent over the cost of deposits (or 2-2.5 percent over government bonds) is higher than in the US, but in line with or less than in most developing countries.

Mortgage Instruments. The only mortgage instrument used for both regular and chattel mortgages, is the simple fully amortizing discretionary adjustable rate mortgage. Some lenders are willing to work out a custom repayment scheme in cases where income is expected to rise significantly over time (e.g., a young professional). Otherwise, there has not been much experimentation with alternative mortgage products which might reduce the initial payments to deal with the tilt problem. Such conservatism seems warranted in a low-inflation environment where the economy is subject to sudden economic crisis (being small and dependent on tourism). However, some price competition along the

[17] Some observers focus on the spread over the extraordinary low rates on Treasury Bills in mid-1997, but that appears to have been a temporary aberration, with the latest Bill rates over 5.5 percent again.

lines of temporary discounts from the normal rate would improve affordability and possibly market position.[18]

D. Risk Management

An examination of a housing finance system can not be complete without consideration of how key risks of mortgage lending are managed. These risks include credit risk, liquidity risk, interest rate risk, prepayment risk, and exchange rate risk.

Credit risk. It appears that mortgage lenders have reasonable legal and political support in their efforts to recover from defaulting borrowers. As expected, this situation facilitates access to housing, because lenders appear to include very little in the way of a charge for credit risk and they are relatively comfortable making loans at relatively high payment-to-income and loan–to-value ratios, when they feel that they have access to good quality collateral.

The foreclosure and auction sale is not painless, however. When contested, obtaining vacant possessions requires a series of court hearings that can take up to a year. In the case of a loan for 90 percent of the value of the house, the accumulated interest, lawyers fees and sale expenses can put a lender into a loss position easily. Despite this, most lenders, stated that they had taken a loss only a handful of times, even during the wrenching economic crisis in the beginning of this decade.[19] The credit unions were the hardest hit by the crisis and several unions, including the credit union league, suffered major losses from which they are still recovering.

The resolution of this apparent contradiction lies in the special methods of default management employed by the lenders. All lenders indicated that they do not expect consistent on-time payment, month after month. Most first take special notice of a delinquency after 3 months, at which time they contact the borrower personally and also send initial legal papers. In most cases, the borrower gets back on track, possibly with some adjustment in the term of the loan. In those few cases in which further efforts are needed, court proceedings may be initiated. However, every effort is made to accommodate temporary problems affecting the borrower or to facilitate the sale by the borrower or uncontested foreclosure.

The underlying presumption is that the borrower truly wants to resolve the situation, simply because his home, often built by himself, is too important to simply give up. Yet the borrower knows that the legal system will deprive him of it if he does not reach an agreement with the lender. In some countries, borrowers simply do the arithmetic as to whether their house is worth more than the loan and accumulated interest and, if not,

[18] In the US it is common to offer below-market rates on an adjustable rate mortgage for the first couple years, in return for slightly higher rates later.

[19] Barbados has just emerged from a period which should have been very adverse for loan recovery. From 1991-1993, interest rates rose from 9 to 11 percent, nominal wages of civil servants were cut by 8 percent, the tax deductibility of mortgage interest was suddenly ended, real GDP per capita declined by 15 percent, and unemployment rose hit 25 percent.

decide to fight to stay on as long as possible as a cost-free tenant. So far in Barbados, such an attitude is rare. Yet, pressure by government to move to 100 percent mortgages in order to make housing more affordable would appear unnecessary risky(see above).

On the other hand, the lender is not in a hurry to hold a public auction, except in extreme cases. Since past experience is that house values rarely go down in Barbados, he would rather wait than force recovery. Regulations and accounting rules also make this approach more palatable. Provisions for bad loans are required only when the lender (or auditor) judges that the collateral is not worth the amount of the principal due. This is rarely the case. Moreover, if the lender does take possession of a house and can not sell it for its "market value" (i.e., when the market is depressed, prices do not decline; rather, transactions do not occur), it is allowed by regulation to retain ownership of the property indefinitely.

The net result of these circumstances is that delinquency rates are relatively high but foreclosure rates are relatively low and instances when sale proceeds do not exceed at least the principal due are very rare. Lenders can name only a very few cases where claims have been made against Mortgage Indemnity Insurance coverage and all of those cases have involved divorces where neither party has enough concern about resolving the problem in some other manner. It is unclear how much is lost to rescheduling or when foreclosures do not cover all expenses and interest. Overall, credit risk was not considered a significant concern in the banking sector, although at least one lender had just set up a debt recovery unit to deal with a perceived trend towards greater risks. In the credit union system it is, however, one of the major concerns (see above).

Liquidity Risk. As noted above, the trust companies have good access to a broad funding base and thus indicate little concern for their liquidity, despite lending for twenty years with one year funding. The insurance companies and the BMFC have long-term funding sources. The only problem faced by the BMFC is the slightly below-market nature of its funding base, which limits its access to funding when needed. It is only the credit unions that face significant potential for instability in their funding sources if they were to expand their mortgage portfolio since they have limited access to long-term funds.

It is worthwhile to consider under what circumstances the funding base of the trust companies might fail, since they are the largest type of lender. There are at least two possible scenarios. First, the market could lose confidence in the parent bank. If this was because of weakness in the bank's operations in Barbados, it is reasonable to expect that the parent bank in Canada or Britain will buttress the bank. If the bank is indigenously owned, there is no comfort available, even from deposit insurance, for the large institutional depositors. In this case, the CBB may have to step in to provide funding, perhaps backed by mortgage collateral.

Alternatively, in the case of the international banks, the main entity could suffer a sudden catastrophic loss and lose the confidence of the market. In this case, it would seem most likely that the relevant regulatory body will step in to prop up the bank. Meanwhile, the local trust company, which is usually separately registered in Barbados, should still be considered sound, unless it had significant assets on loan to its parent bank. In any case, it appears to be unlikely that the trust companies are subject to significant liquidity risk.

As for the credit unions, they can manage their liquidity risk by funding most mortgage originations out of long-term institutional loans. In the longer-run, the credit unions may be able to convince the government to set up some kind of deposit insurance system that could provide greater protection from instability in their normal deposit base.

Interest Rate and Prepayment Risk. By adopting the discretionary adjustable rate mortgage design common in Britain, Barbados lenders have eliminated most if not all of their interest rate risk. The downside of this is that borrowers are not offered the option of fixing their rate and instead are taking on the interest rate uncertainty. In principle, the insurance companies could offer fixed rate loans, just as they buy long-term fixed rate government debt. However, it appears that the public is not willing to pay the premium required for lenders, even insurance companies, to take on the interest rate risks.

Exchange Rate Risk. Barbados has had an extraordinary history of exchange-rate stability, first with respect to the British pound and then to the US dollar. However, there is no guarantee against future changes in the exchange rate. Moreover, even if the rate does not change during some economic crisis, there is the question of whether capital controls will limit an investor's ability to retrieve funds in such circumstances. For both of these reasons, the use of foreign funds by lenders or borrowers introduces a significant element of risk.

Barbados could move towards reducing that risk by developing a more open regime governing capital flows and encouraging a free exchange rate market. In principle, such moves would provide greater assurance of timely repatriation of funds and also more direct measures of capital market pressures, as well as encourage greater use of off-shore financial funding. However, such a route raises the stakes for economic managers of sudden shifts in confidence. It is not obvious that the island should pursue full financial integration as long as sufficient direct investment is available from foreign entities (although it probably can afford to allow Barbadians more access to foreign investments).

Pending such changes, there is small scope for attempting to develop wholesale funding instruments designed to raise foreign funds. It is unlikely that the all-in cost of funds from such sources will be less than domestic funds at most times. Even funding through international donors is not necessarily cheaper (although usually longer term) than domestic funds, once all fees and other costs are accounted for.

E. Construction- and Home-Improvement Finance

Shorter term lending for construction and home-improvement is offered by a variety of financial and non-financial institutions.

Home-improvement loans by financial institutions. Nearly all institutions discussed above make loans for home-improvement either as a consumer loan or as a second mortgage. This is important in a country like Barbados, where many families build or expand and improve their homes over time. The rates and offerings for construction/improvement finance to households are more varied and competitive than first mortgage products. As an example, Credit Unions offer home-improvement loans at 12 percent for a 5 year term.

Financing by Building Suppliers. An increasingly popular way to finance home-extensions and repairs for lower-income households is through customer finance by building materials suppliers. There are five to six companies on the island that offer this line of credit. Some hold large portfolios of such loans and have made financing a lucrative part of their business. For example, the firm with the longest experience in this line of business, DaCosta Mannings, has B$15 million outstanding in this type of financing loans for both households and builders, B$6.5 million of which is for individual households. It has over 15,000 accounts.

The terms and procedures followed by DM are as follows. Households need a formal cost estimate of the proposed construction prepared by a builder or carpenter. DM uses the credit bureau to check on the credit record of the household even though not all financial institutions participate in the credit bureau. Based on this report and the household's budget (incomes of all household members are taken into account) DM establishes a maximum line of credit the household can afford and, if necessary, the total job is broken into incremental stages if the total costs are higher than the household can afford. One third of the total credit agreed upon has to be deposited upfront with DM as a guarantee. The other two-third can be drawn down incrementally. DM has developed a charge card for this purpose, but other suppliers use a charge account. The households pays 1 3/4 percent per month on an annuity basis beginning at the date the agreement is signed and over the full amount of credit agreed upon. Maximum loan terms are 12 to 15 months. The average line of credit is B$5,000 with a maximum of B$15,000 to 20,000. (Credit lines for builders can go as high as B$200,000 per month for large construction projects.)

Defaults are the major problem, but are much higher for consumer goods (30 percent) than for building materials. In the case of consumer durables the goods can be repossessed, since financing is based on a tenant purchase agreement. However, DM has no lean on the building materials, hence the conservative lending terms.

Other suppliers, that approach financing more as a customer service rather than a line of business, have kept the number of accounts and the loan amounts small (e.g. Barbados Lumber Co. has 4000 accounts with an average loan size of B$500. They charge 1.5 percent per month and the maximum term is 6 months).

Although households of all income categories participate in these programs, the majority are low-income households in the income bracket of B$800 to 1500 per month. Many at this income level do not want to go to a bank or are declined by the formal lending institutions, for instance because they have informal sector incomes. In addition, the paperwork involved is minimal and the turnaround time to access credit is only four to five days. So, while this type of credit is considerably more expensive than that provided by the formal lending institutions, the demand for it is high.

Construction Loans to Contractors and Developers. Construction lending appears to be an area of greater competition then that of mortgage lending, with lenders charging different fees and rates and on different terms. Notably, in contrast to the situation in the 1980s, when most trust companies required the borrower to arrange a construction or bridging loan with the parent bank, today all major lenders offer a package of bridging and permanent financing, often without any commitment fee on the permanent financing. Developers will only start the construction of a house, however, when the client has a borrowing relationship with the bank and the builder can draw down money from the financial institution. The rate on such lending is tied to the bank's prime rate and is between 2 to 3 percent higher, putting it currently between 12 and 13 percent.

Summarizing the available products for home-improvement and construction lending:

Home-Improvement Loans	12 percent, 5 years (credit unions) 21 to 22 percent, unsecured 18 to 24 months loans by building materials suppliers (see below)
Construction loans	12 to 13 percent for duration of construction (up to 5 years)

F. The Housing Finance Market Place: Summary

As noted above, there are at least six major types of lenders in the marketplace for mortgages and home-improvement loans, several micro-lenders providing building materials loans and several government housing finance programs. How do they compete and to what extent do they specialize or overlap?

Rate Competition. One of the most striking aspects of the housing finance sector is that there is little rate competition. This partly reflects the fact that the CBB administered a maximum rate until 1992. But the practice persists of all the lenders changing their rates at the same time (apparently in informal consultation) and generally by increments of a full percent. The current rate is 9 percent, up from a low of 8 percent in 1994 but down from 10 percent in 1995 until mid-1997. Even the main NHC housing finance program operates within the same rate range. Rate competition is, however, more evident in the micro- or trade finance area, where interest rates for similar loan products vary by whole percentage points.

Market share. Another striking feature is that, despite the lack of rate competition, market shares by type of lender and within types of lenders seem to shift significantly over time. This appears to reflect both non-rate competition, different funding opportunities, and perhaps shifts in size of target markets.

In 1984, at the time of the study by Donald Gardner of the U.S. League of Savings Institutions, the trust companies were already the largest category of lender, having surpassed the BMFC in 1976. During the 1980s, the trust portfolios grew at a rate of almost 16 percent a year, in contrast to growth in nominal GDP of 7 percent and a growth in bank assets of 9.5 percent. Since 1990, growth has slowed to 5 percent, still ahead of nominal GDP growth of 2.5 percent (but trailing banking asset growth of 6.5 percent). Part of the reason was the slow growth in BMFC assets. However, the major influence has been the general trend towards greater usage of long-term credit for housing, as reflected in Table 1.

There is a tradition of building housing over time, either fully out of savings or savings complemented with one or more short-term loans. As recounted by several commentators, the pattern is to buy a plot of land, using savings, intra-family transfers, or a short-term loan, often from a bank. After formal loans are paid off, construction might start, usually progressively out of savings, loans and possibly involving owner participation, until the basic structure is in place. Then another short term loan is taken for the heavy cost of finishing out the house, often room by room, possibly with additional loans for additions and improvements, including a last step of finishing the interior.[20]

An odd aspect of this pattern is that the short-term loans are usually at much higher effective rates, since these are considered unsecured personal credit.[21] Despite this, the lower effective balance of having a series of short-term loans is considered desirable and, depending on the type of lending window used, cheaper than taking out one large, long-term loan. The growth of the micro-finance sector, which charges much higher interest rates than the conventional bank or credit union home-improvement lending, underscores the preference for this type of lending for incremental construction.

Thus, the secular growth in the use of long-term mortgages does not reflect a gradual shift away from short-term lending term loans for the financing of part of house-construction. Indeed, the growth of short-term construction loan portfolios in all types of lending institutions show the continued importance of such incremental building in the new home market. As noted above, large, developer-driven housing developments are still relatively rare in Barbados.

Statistical evidence also shows this dual pattern of housing finance. The data shows that no more than 300 mortgage loans were made in 1995 for new houses, despite the completion of about 1300 houses.[22] On the other hand, the number of mortgages on existing houses was at least half of the 806 existing houses which were reported to have

[20] During the long history of CBB control over credit issuance, short-term loans for housing improvements were generally exempt, thus encouraging banks and borrowers to plan on using this vehicle.
[21] The quoted rate is not so much higher, but it is applied on a constant balance and has an effective rate that is twice the stated rate.
[22] These numbers are only rough because (1) there is no information about loans made by insurance companies or credit unions (but dollar volume can be estimated) and, (2) there is no information on how loans made by BMFC are allocated across new and existing houses.

changed hands in 1995 (from tax records, see Section III above). Overall, the view of several commentators that about one-third of households used a mortgage to buy their home seems roughly supported.

Aside from the process of greater use of credit as cultural norms change, there were also important shifts over time in fiscal incentives to use borrowed funds for housing. In 1979, a deduction for mortgage interest was introduced for up to BD 6,000 a year. This was boosted to BD 9,000 in 1984 and then made unlimited in 1986. However, the deduction was removed in the fiscal crisis of 1992 and only partially restored (to BD 3,500) in 1995. Some lenders reported a higher rate of prepayment because of the increased after-tax cost of funds, which has reduce the rate of growth in their portfolios despite a recovery in their new lending activity.

While a long-term trend towards using mortgage financing accounts for the growth in housing lending as a percent of GDP, the relative growth of funding sources may account for much of the shift among mortgage sources towards the trust companies. The banking sector has clearly been growing relative to GDP, partly because the strong growth in insurance and pension assets (both public and private), combined with limitations of overseas investment, has pushed substantial volumes of deposits into the banks (and trust companies). While the growth in mortgage lending was consumer demand driven, the institutions best able to serve that demand were the trusts. Indeed, the resources of the HCF have not been supplemented and the BMFC has been growing very slowly since 1989 until recently when HCF was able to release more funds.[23]

The credit union sector has also been growing at a rapid pace, both in share of financial assets and in the relative importance of mortgage lending in their portfolio. It is clear that the credit unions have greatly benefited from the tax advantages to their deposits, introduced in 1984. Between 1983 and 1990, their assets shot up over 1200 percent. But since 1990, they have only kept pace with total bank assets. They may, however, soon respond to the increase in the qualifying deposit amount for tax exemption introduced in 1997.

Despite the growth in their resource base, credit unions are still poorly positioned to offer many large long-term mortgage loans. Thus, the next logical step has been to seek wholesale funding, of the type used by the trusts. However, the credit unions have a limited capacity to tap such funds, since they can not offer the security, supervision, and diversification that large lenders like to see, and only the larger ones are in the market for such funds.

Product and procedural innovation. The development of new products and services is another way used by institutions to increase their market share.[24] BMFC has not been

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[23] It is not clear why the insurance companies have not been more successful in seeking market share. It appears that they simply find it more difficult to market their products the "Barbadian way" (word-of-mouth and low-key promotion). Nor do the insurance companies or BMFC have any room in their pricing for competitive price cuts.

[24] It does not seem to reflect active marketing of products, however. The lenders appear to rely on word of mouth to disseminate information and often have only one location for taking and processing applications.

able to innovate in any way, sticking with a single first mortgage for the purchase or construction of a house and even for additions and improvements. The insurance companies also do not seem to be aggressive innovators. On the other hand, the credit unions have established a competitive advantage by offering to wrap consumer and business debt of all kinds into a consolidated refinancing loan or offering to make additional advances as second liens, all wrapped up in what are said to be more flexible underwriting standards. The trust companies seem to have reversed past practices and all now offer bridging loans (i.e., phased construction loans) rather than force the borrower to deal with the parent bank for these. They have moved towards longer terms of 25 years and 90-95 percent loans (with mortgage indemnity cover), are also consolidating consumer loans and offering equity lines of credit, and are taking in applications at branch offices.

The other important question is whether products or funding innovations have been developed that would facilitate access to credit by the lower income parts of the market.

No lender has experimented with different mortgage instruments to reach a broader spectrum of households. Indeed, even the credit unions, in their drive to expand market share, are looking to coax a greater share of the middle-class market to their doors, in particular for long-term mortgage loans, rather than venture further down-market in their lending.

On the other hand, flexible underwriting mechanism are used by credit unions and micro-finance institutions for land as well as housing collateral (chattel mortgages based on leased land and movable property are acceptable by various lenders) and concerning sources of household income and types of employment (e.g., income of all permanent household members is incorporated in the affordability calculation, up to 30 or 40 percent of household income is allowed for maximum monthly payments, informal income is taken into account if it can be documented). Also, high LTV ratios (up to 95 percent) are used for households that have a savings constraint in combination with mortgage insurance. Nevertheless, there is a general tendency for lenders to prefer larger rather than smaller loans, since administrative costs for loan origination and servicing is equally high or even higher for small loans, and fixed-income customers over self-employed for the same reason.

Thus, it appears that the middle-class and above housing market is reasonable well-served by a large number lenders who are competing for market share, mostly through innovations in services and products, not in price. It would be comforting to see more price competition. Only then will it be evident that consumers receive the best combination of product and price possible. But in the absence of barriers to product and fee competition, the loss to consumers may not be too significant. The other implication of this discussion is that the amount of lending that is going on is primarily a function of

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In general, they attempt to keep overhead low, since none of them deal with a portfolio of over BD 200 million in loans, a level at which even another staff salary plus overhead of BD 100,000 would significantly affect profitability.

the demand in the market. Over time and when demand increases because of innovations or incentives in the housing market, improvements in products and funding sources will likely occur.

G. Secondary Mortgage Market Development

There is discussion in the country about the potential usefulness of a more formalized wholesale funding mechanism, called the secondary mortgage market/facility (SMM/F). KPMG Peat Marwick is completing an in-depth feasibility study to assess the usefulness for such an institution in Barbados. The common perception is that this might increase the flow of funds into the primary market. A corollary to this notion is that, while at the moment funds are plentiful, when liquidity dries up some, primary lenders will be more interested to continue mortgage lending if they have access to whole-sale funds. The basic logic is as follows. The SMM/F gathers funds from long-term investors by issuing high quality securities. The quality of the securities derives from 1) the high quality of the mortgages serving, directly or indirectly, as collateral, usually combined with additional capital held by the SMM/F, or 2) a government guarantee. The SMM then supplies these funds, either as a loan or through purchase of mortgages (either outright or on a repurchase basis), to the primary lenders.

While the objectives of the present study did not include an evaluation of the pros and cons of a secondary mortgage facility for Barbados, the team was asked to provide some insights on this question based on its assessment of the overall housing finance system in the country. The question of whether a secondary market is feasibility or needed is not a simple one, since the objectives to develop a secondary market are likely to include other issues than guaranteeing the supply of funds to the primary market alone. In addition, if government funds are to be used in the development/operation of the secondary market, there is the question of weighing the alternative ways such funds could be used to improve the housing finance system and the housing market. Indeed, there was no unanimity of opinion among the consultants on these issues. We will briefly discuss the possible objectives and efficiency implications of the development of a SMM/F in Barbados. One of the financial consultants offered detailed comments on the KPMG Peat Marwick study and the other wrote a brief explanatory note on secondary markets. Both are appended to this report.

What are some of the possible objectives for establishing a SMM in Barbados? The benefits and costs will differ for the primary mortgage lenders, investors and the government. A brief discussion will point out some of the reasons and their relevance in the Barbadian context.

1) *Provision of additional funds to primary lenders and reducing institutional segmentation between primary market lenders and long-term investors.* In many developing countries, including Barbados, this is one of the foremost considerations for pursuing a SMM/F option. Presently there is, however, no shortage of funds in the Barbados mortgage market so most lenders have no need for an additional funding

window. Only the BMFC (which is prohibited to collect deposits) and credit unions have difficulty raising their own funds for long-term mortgage lending. However, even if a shortage of funds for mortgage lending may arise in the future, it is unclear that a SMM/F will be the best way to address this problem. Long-term investors are already supplying funds to primary mortgage lenders, including credit unions, based on the collateral provided by their mortgage portfolios. Thus, unless the intermediation process provided by a SMM/F is less costly than the direct transactions between whole-sale and retail financial institutions[25], a SMM/F would not provide added value to the process of accessing whole-sale funds for housing lending. It is presently unlikely that a SMM/F could provide funds at a lower cost unless there is a government subsidy involved.

Increasing funds through a secondary market is often considered in countries where the reserve requirements on deposits are high, limiting the availability of funds for lending by the financial institutions. However, a simpler way to increase loanable funds under these circumstances is to change the reserve requirements imposed by the Central Bank if this can be done prudently. In Barbados the main mortgage lenders, the trust companies, have no reserve requirements on their deposits, and there are therefore no savings in this regard from SMM funding. Reserve requirement restrictions may be a consideration for the establishment of a secondary mortgage market for other lenders though.

2) *Decreasing interest rate and prepayment risk for primary lenders*. In countries where fixed rate mortgages with free prepayment are preferred by customers, lenders may want to sell their mortgages in order to decrease interest-rate and prepayment risk. However, in Barbados, the adjustable rate mortgage is the preferred instrument, and the public accepts the risks of variable rate loans. Interest-rate management is, therefore, less of a concern in the Barbados context.

3) *Improving efficiency in the primary market.* Selling or refinancing mortgage pools requires that mortgages offer attractive and risk-adjustable returns, standardized documentation and underwriting, high quality servicing and collection, and mortgage performance information for the investor. Gaining access to secondary market funding may form the incentive to make improvements in primary lending procedures and administration. In the same vein, a secondary market system can induce innovations and greater competition in the primary lending sector. While in Barbados, competition and administrative procedures could certainly be improved, the latter particularly in the credit unions, it is doubtful that a SMM/F is the most efficient vehicle to bring such improvements about. Particularly in the case of the credit unions, the strengthening and standardization of underwriting and servicing procedures will require support activities preceding any secondary market involvement.

4) *Creating new long-term investment instruments and gaining experience with collateralizing mortgages*. From the perspective of the institutional investors, holding long-term debt or equity instruments based on mortgage pools, would provide more liquidity than holding whole mortgages or mortgage-collateralized loans to primary

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[25] .Since the financial sector is small and investors and lending institutions know each other and the housing market environment well, the cost of due diligence is relatively small.

lenders and would therefore be preferred, even at a cost. Since institutional lenders such as the insurance companies and the NIF have experience already with collateralizing mortgages to back loans to primary mortgage lenders, the funding/refinancing process would not be difficult to implement in Barbados (but at a cost, see point 1 above) and the securitization process could be done fairly cost effectively through a mortgage trust vehicle.[26]

In conclusion, there appear to be some noteworthy advantages for both private sector mortgage lenders and long-term investors in developing a SMM/F to improve their financial management options and efficiency. It would be entirely feasible and appropriate for a group of private financial institutions to push for adaptations of existing trust regulations to allow for enforceable and transferable security interests based on mortgages and other legal and regulatory provisions needed to establish a SMM/F. These financial institutions could than take the initiative to set up a SMM/F or mortgage trust when there is sufficient reason for them to do so.

From the perspective of the government, it appears that no direct social gains would be achieved that would warrant government subsidies or risk-taking in developing a SMM. There is presently no shortage of funds for mortgage lending, linkages between primary lenders and long-term investors already exist to overcome future shortages or assist institutions with limited access to funds such as credit unions at costs lower than can be achieved by a SMM/F, and efficiency gains in the housing finance system can be achieved by other means. The Central Bank of Barbados could play a facilitative role in the process of establishing the legal and regulatory framework but refrain from providing guarantees, tax-exemptions or more direct subsidies, unless a situation develops that warrants such a role.

Lastly, there are two existing SMMs in neighboring countries, the HBM of Trinidad & Tobago and the ECMB in the Eastern Caribbean. A study of how these institutions operate and the costs and risks taken on by government in support of these institutions would be a necessity before decisions on a Barbados SMM would be taken.

H. Recommendations to Improve Housing Finance Sector Efficiency

The above analysis shows that Barbados has a well developed housing finance sector that has the potential to cater to all income classes for new and existing home-purchases and home-improvements. For households that cannot comply with the conventional mortgage lending criteria, alternative short-term lending mechanisms are available through credit unions and building material suppliers that provide credit for incremental house construction or improvements.

[26] See description of such a Mortgage Trust in a memo on this topic by Claude Bovet, 3/30/98.

Nevertheless, there are a number of institutional and regulatory improvements that may be considered by private lenders and the government to facilitate access of lower income households to finance and improve the efficiency of the industry:

1) *Improving supervision and support systems for credit unions, and possibly providing some form of deposit insurance.* Credit unions play an increasingly important role in providing mortgage and home-improvement finance for lower and moderate income households. Their performance is, however, uneven and relatively high delinquencies and weak operational management are a problem shared by many. Assistance could be provided to improve the League in developing into a strong self-regulatory and support institution for the membership. Training in mortgage underwriting procedures and efficient ways to set up servicing capabilities would strengthen the performance and provide some standardization in procedures. This will allow credit unions to become more effective providers of housing finance, and will assist them in accessing wholesale funding.

Supervision and monitoring needs to be strengthened for those credit unions that have become near-banks rather than membership-oriented small-scale institutions, in particular those that have moved increasingly into long-term lending operations. A joint monitoring committee could be formed for this purpose, which would include staff of the Office of the Registrar of Co-operatives and selected members of the CBoB.

Both of these bodies, the self-regulatory and the supervisory, could assist in connecting credit unions to long term investors for the provision of additional mortgage funds. In addition, some form of deposit insurance may be considered to attract more funds to this part of the market.

2) *Privatizing BMFC*. With the strength of the primary mortgage sector and BMFC's increasing focus on the middle to high income market, BMFC no longer provides special services that the rest of the market could not accommodate if necessary. Plans to privatize BMFC, as mentioned in the Prime Minister's Financial Statement of 9/9/97, should be implemented, provided that BMFC will be allowed to take deposits and issue debt, and is treated equally in relation to the mortgage insurance requirements mentioned above. Its main comparative disadvantage with the trust companies is that it does not have the backing of a strong bank like the trust companies.

3) *Privatizing HFC*. Although HFC fulfilled an important function in the mid-eighties when it was established to draw credit unions and BMFC into the middle income housing finance market, its role has become increasingly marginal with the expansion of the sector and its orientation towards the above median income sector. HFC could tender its current portfolio to an independent financial institution which could manage it more efficiently[27].

4) *Consolidating and re-focusing public housing finance programs*. The increased availability of long-term finance and micro-finance puts into question the need for several

[27] HFC could possibly be transformed to administer a new subsidy program for the Ministry.

government housing finance programs and institutions operating in overlapping sectors of the housing market and with similar products, but with lower efficiency. Existing programs could be consolidated and re-targeted to the presently underserved population. This topic will be discussed in the next section of the report.

5) Experimenting with alternative lending instruments that could facilitate moderate income borrowing. Some alternative instruments will be discussed below in relation to possible subsidy alternatives. However, non-subsidized mortgage instruments, such as the Graduated Payment Mortgage, for young people at the beginning of their carriers with rising income prospects, or the Home-Equity loan or similar instruments that allow people without mortgage debt or with high equity in their homes to acquire funds for maintenance of their properties, would make financing for house construction and rehabilitation available to more moderate income and elderly households.

6) Rationalizing and expanding mortgage insurance for high LTV ratios. The Central Bank requires that mortgage lenders take out mortgage insurance for loans with LTV ratios in excess of 75 percent. However, BMFC borrowers must have mortgage insurance irrespective of their LTV ratio even if it is lower than 75 percent, while credit unions that write regular mortgages, have no mortgage insurance requirement at all. Streamlining these requirements would provide a more level playing field for BMFC. Similarly, requiring mortgage insurance for credit unions that write conventional mortgages would strengthen their asset quality and likely improve their underwriting and servicing systems through insurers' requirements.

Also, mortgage insurance for lower-income households could be incorporated into a mortgage subsidy program to allow households the option to lower their down-payment requirements by buying insurance as part of a subsidy program. We will discuss this in the next section on subsidy options. However, LTVs higher than 95 percent should be discouraged. Experience has shown that households with low equity in the house default more frequently on the loan. Also, households that cannot save for a down-payment at all are likely to have trouble maintaining the house, e.g., repairing a leaky roof, replacing a hot water heater, or repairing termite damage.

7) *Examining the demand for (including willingness to pay) and requirements of secondary mortgage market products*. Investors and lenders could set up a working group to examine their respective real interest in setting up a secondary mortgage market or facility. Such a working group should analyze, for example, the size and quality of present and projected mortgage pools available from different lenders for collateralizing and securitizing, the types of secondary market products preferred by investors and lenders and the most efficient way to create those products, costs related to the process of collateralizing and securitizing of mortgages in relation to other instruments and procedures available to address stated objectives for a SMM, and legal and other requirements to establish a secondary market. Based on the outcome of such analysis, the possible facilitative role of government could be defined.

Some additional, non financial institution recommendations are:

8) *Encouraging financial institutions to use the credit bureau*. Presently the main mortgage lenders do not participate in the credit bureau for fear of sharing customers' information with others. However, the underwriting process will be made considerably more efficient and thus less costly if all credit institutions participate.

9) *Re-examining the land registration system and deregulating the legal industry related to underwriting and closing on a mortgage loan*. Transaction costs related to land title search and transfer, and other legal and administrative costs involved in closing of a mortgage are relatively high and regulated by government. These high legal costs in combination with the high transfer taxes are likely to have a serious negative impact on mobility and the sale of used houses and decrease housing affordability. (Barnes' report in this study makes recommendations for the improvement of the registration system. See also Bass' study.)

V. HOUSING SUBSIDIES IN BARBADOS

A. The Subsidy Context

One of the main reasons for the lack of down market movement in the housing finance system is the lack of effective demand caused by the mismatch between household incomes and the cost of acceptable housing in the market. Since the economic crisis of the early nineties real incomes have decreased while housing cost increased at the level of the overall CPI. A house that could be purchased by a typical moderate income household in 1991, became unaffordable as a result of the recession. The market for new housing is only gradually recovering according to contractors and developers since households have not adjusted their housing expectations as to the house they would like to own but cannot now afford (see Section III). Cost reductions on existing house-types (without necessarily lowering standards) and a reduction in transactions costs related to land and house purchase are important means to close the affordability gap. Some of these cost reduction measures require a change in government regulations and taxation systems. In other parts of the study proposals for change in land legal and tax, physical planning and building regulations are made. A complementary option is to examine the existing housing subsidies and improve the overall efficiency and equity of the different programs in the light of changed economic conditions and sharpen their focus on national policy objectives. These questions will be examined in this chapter.

How can we evaluate the need for and effectiveness of subsidies? A subsidy is an incentive provided by government to persuade a certain class of housing producers or consumers to do something they would not otherwise do, by lowering the opportunity costs of doing so. In other words, government wants to induce a change of behavior by offering a subsidy. Therefore, the questions of who would need a housing subsidy and what type of subsidy can only be answered in relation to the objectives of government.

The government has for many years had a dual policy objective: to stimulate the private market for housing (e.g., by creating mechanisms to stimulate the provision of housing finance to moderate income households) and directly provide sufficient housing for low-income households not serviced by the market (the NHC has produced rental and ownership housing for many years). With the market now successfully providing moderate income housing the challenge is to find ways of having it serve an even larger proportion of the population while affordability levels have gone down. Government housing activities could than focus more on the provision of services and housing to households that are underserved or have special problems, as much as possible through public- private partnerships and community involvement (Government White Paper, 1997; Downes, et al, 1996).

In the present Barbadian context, subsidies may, therefore, be applied to 1) stimulate the production of the type of house the market is now reluctant to produce for fear of low consumer demand, 2) assist those households that could, with a relatively small subsidy, afford to acquire a house and housing finance through the formal market system, and, 3) provide housing options or incentives for those that are unable to improve their housing conditions to acceptable levels, e.g. many households living in tenantries and improvement areas, and special groups that require assistance in rehabilitating their homes.

B. Current Subsidy Programs

Types of Subsidies

The government of Barbados provides a variety of housing subsidy programs, most but not all through the Ministry of Public Works, Transport and Housing and the NHC:

- *Production/Rehabilitation*
  - Land grants from the Ministry to the NHC, and below market sale of land by NHC
  - Moving expenditures for tenantry renewal
  - Production of houses for below market sale and rent
  - Housing rehabilitation assistance for welfare recipients
- *Finance*
  - Below market interest rates on loans by the HCF, NHC, UDC and BNB (for tenantry improvement loans (see Section IV above).
- *Operating expenses*
  - Public rental housing by the NHC (4000 units).
- *Taxation*
  - Reduced income tax rates for the BMFC.
  - Tax exemptions on the commercial operations of the HCF, NHC and UDC.
  - Income tax deduction for home-owners (until 1992)[28]

National Housing Corporation (NHC)

The NHC is the most important implementation agency for the government's housing program and as such it has been evaluated separately by one of the consultants in the team (Cambell). Suffice here to mention the three distinct operations for which it is responsible:

- As a land and housing developer it produces serviced residential lots and starter homes for sale. The "Settlement 2000" program for 1998/99 projects the production of 1,562 serviced lots and the servicing of another 269 occupied lots, together with the construction of 400 starter houses and 82 terraced units (103 units as per the 1998/99 budget).
- As a landlord it owns and rents residential units. Its present inventory is of approximately 4,000 units, estimated at about 30% of the nation's rental stock. Although it will be adding the 103 units mentioned above, its long term plan is to sell as many of these rental units as can be converted to home ownership. The rental activity is operated at a substantial loss.

[28] See Downes, et.al. for a complete history of housing subsidy and taxation programs.

- As a loan originator it operates a "General Workers Housing Loan Scheme" whereby it provides mortgage and unsecured housing loans of up to B$60,000 to individuals with monthly incomes of up to B$2,525. NHC plans to move to lending terms at 100 percent of acquisition costs. A new category of loans collateralized by a simple promissory note was initiated in October 1997 for home improvements and renovation. Its total loan portfolio at year-end March 31, 1997 was of B$4.7m (see Section IV above). Figures for new loans and delinquencies in the full 1997/98 year were not available at the time of this consultancy and the "budgetary proposal and business plan" for 1998/99 does not provide details.

NHC has a complex mandate. It has to run its operations as much as possible on a commercial basis while at the same time it has to implement the government's social and housing policies. It is presently reassessing what types of activities can best balance these different goals and values.

More recently the UDC has been established which will focus on urban redevelopment issues. The specific details of its subsidy programs are not yet worked out.

Efficiency and Effectiveness of Subsidy Programs

While many of the above mentioned programs have been successful in stimulating the production and private financing of low and moderate income houses, there is presently a need to evaluate the targeting, efficiency and structure of the subsidy packages in light of the above mentioned policy objectives. Rather then discussing each program in detail, we show the different criteria to assess the appropriateness and efficiency of the different programs and the design of alternative programs.

1) Efficiency in the production of housing services. An analysis of the several subsidy programs shows that some programs experience considerable efficiency losses in the following ways:

- *Government cost of providing services and goods is higher than those of the private sector*. Some examples are: a) Kirke's study calculates the comparative costs of NHC housing production and similar private sector housing and shows the substantially higher costs of NHC houses, b) the defaults on subsidized NHC loans are higher than private sector loans (see housing finance section above), c) arrears on NHC rentals are high (31 percent or B$195.000 for the month of March 1998 alone), even though performance has improved (for March last year arrears were 80.7 percent of B$534,000 for March; NHC records) and much higher than would be tolerated in the private rental sector, d) HFC's cost of funds from a USAID guaranteed loan are much higher than they should be, given present market opportunities.

For other programs, such as the land-assembly component in public-private partnership housing projects the government has distinct cost and other efficiency advantages over the private sector (see Bass' study).

- *Expenditures do not reflect the opportunity costs (allocative efficiency)*. Many of the services provided by NHC would likely be eliminated if the true opportunity cost were taken into consideration. For example, the true operating costs of the lending, rental and sales programs run by NHC are in no way reflected in the pricing of the services or the calculations of the real depth of the provided subsidy and tax-exemptions. If the real opportunity cost of what is provided would be taken into consideration, it is likely that a different decision would emerge on the allocation of many of the subsidy funds.

- *Recipients do not appreciate the subsidy at its real market value or the subsidy is replacing recipients' own spending on housing*. Although no in-depth study was done on this issue, it appears evident from a cursory visit and analysis that recipients of the new NHC rental housing schemes or housing sales projects would not have spent the same amount of money on improving their housing situation had they been given the equivalent value of the subsidy in money. Also, the subsidies on rentals are extremely deep (see Kirke) and not tied to recipients' income. It is very likely that subsidies are just replacing housing expenditures that households are willing and able to make without the subsidy. In both cases a lower level of housing service would have taken care of the governments stated objective of providing housing to the underserved. For these reasons the provision of grants or allowances to deserving households (demand side) is often preferred over subsidies tied to the supply of housing and services (supply-side subsidies).

2) **Equity concerns**.

- One type of equity concern arises when the quality of housing services provided to a specific target group, brings their housing conditions to a higher level than the unassisted income group above them. Clearly this situation occurs in the present rental and ownership sales programs of the NHC. This is another indication that the level of subsidy in these programs is too deep. The simple home-improvement assistance by the welfare department is more equitable in that sense, but too small to make a difference in the housing sector. The regressivenes of the interest-rate subsidy programs and of some taxation programs is another example of inequity. In those subsidy designs the subsidy amount increases with the size of the loan.

- An additional equity concern is the fact that only a small proportion of all possible eligible people will receive an NHC provided rental or own home. A smaller subsidy that can reach a larger number of people would be more equitable than the present system. This problem appears to be of a lesser concern in the government lending programs, which use close to market terms, and which have hardly any waiting lists. All applicants are provided with loans within the year of application. Lastly, the existing combination of direct construction, finance and taxation programs does not appear to effectively address the special concerns of the most underserved housing groups in society, e.g. tenantry occupants. Land rent control measures, moving assistance, and a subsidized housing finance program provide a contradictory and insufficient system of incentives for residents to improve their living conditions. A new tenantry upgrading program is being designed by UDC.

3) **Transparency of the subsidy cost.**

- The costs of NHC, UDC and BNB interest-rate subsidies cannot be accounted for on the yearly government budget, nor can these be calculated readily, since the real opportunity cost of the subsidy depends on the market interest rate over the live of the loan and the loan recovery record. For this reason, and the sometimes high hidden cost (lack of accountability/monitoring) of the interest-rate subsidy and the market distortion it brings about, interest-rate subsidies are avoided in many countries. The same set of reasons makes these subsidies favorites of politicians.

4) **Effect on housing market.** What effect does the subsidy have on the market production of houses, prices and quality? Subsidy programs can assist the market in moving into the production and financing of lower-income housing, but they can also hinder market expansion in that sector if subsidized housing makes it impossible to compete for market share.

- Present government housing production programs (NHC is anticipating new large scale efforts in that direction under its Settlement 2000 program[29]) are considered by the private market to compete unfairly with the low-income housing programs they are able to construct at market prices. An evaluation of their potential products and prices (Kirke) seems to confirm that assessment. However, the relative advantage of NHC as a land assembler and developer can be successfully complemented by privately produced houses by contractors or even individuals (See Bass).

- On the finance side, the moderate income lending and mortgage market has expanded to such a point (partly assisted by government programs) that existing government housing finance programs do not have an impact on that market segment. However, new incentive programs focused on increasing the affordability of housing for lower income households than are presently able

[29] The NHC's Settlement 2000 program intends to develop commercial and residential lots, commercial starter houses, terraced houses, commercial developments and infrastructure developments. The government intends to use a proposed B$50m bond borrowing to partially fund this program. The bond placement has two tranches, and the first tranche of B$30 has been sold at the going market rate of 7.5% (possible because of the government's backing). The servicing of interest on the bulk (B$47.7m) of this borrowing is to be taken charge of directly by the government (proceeds being destined to build a new NHC headquarters and a major government office complex). "Settlement 2000" anticipates additional "bank loan" borrowings of B$46.5m, which presumably will require more government backing.

to buy or improve their house, may assist the use of formal mortgage finance by lower income groups.

The total cost of housing subsidies

An attempt was made during the consultancy to estimate the total costs of all present housing subsidies. However, figures could only be obtained on some of the subsidy programs and for others (e.g. UDC) figures are not yet available. The overall cost of housing subsidies to the economy, including hidden costs, could therefore not be calculated. Table 3 in the appendix, is a first attempt to inventory the costs to government arising from the subsidies and operating losses incurred on an annual basis by its various agencies in the housing field. Even from these preliminary and incomplete data it can be seen, that the government's financial effort for the housing sector is substantial, but much larger than it needs to be in relation to the outcomes achieved.

Summarizing, there are serious efficiency losses in many of the current subsidy programs, caused by a relatively high cost of providing the subsidized service, providing more than consumers would have paid for on their own, or providing a different product than consumers would prefer. The same programs that have the worst efficiency problems also appear least equitable and have a negative effect on market provision of lower income houses. These are the direct housing construction programs for rent or purchase. Efficiency and transparency problems are a major issue in the present public housing financing programs. And lastly, the combination of subsidy programs and the selection of recipients does not address the dual government objectives of getting as many households provided for by the housing market and providing housing solutions to the most deserving population groups and market segments.

It is recommended that the government reconsiders several of its existing and planned direct sales and rental construction programs, and eliminates the various housing finance schemes and moves towards a combination of demand driven subsidy incentives and efficient supply interventions that would be based on a maximum possible recovery of costs. Direct subsidies to beneficiaries will stimulate private housing suppliers and private mortgage lenders to serve a larger proportion of the moderate and lower income households.

VI TOWARDS A NEW HOUSING SUBSIDY APPROACH

The above analysis shows that the available funds could be utilized in a more cost efficient way, better targeted to deserving population groups and market segments, and, in a way that maximizes the relative strength of the public and the private sector and the individual recipient and community. This section begins to outline subsidy alternatives for consideration be the government.

A. Market Segments and Population Groups for Home-owner Subsidy

Several population groups and housing market segments in Barbados appear particularly appropriate foci for housing subsidies in accordance with the housing policy objectives of the government as stated above.

- *Household groups without proper infrastructure and services (and often tenure) that are unable to bear the cost of upgrading or improving the site and possibly their house to acceptable standards without government support*. Affected market segments are:
  - Tenantries
  - Improvement zones within and outside of the ABC area

  Special concerns for subsidy design: The size of the required subsidy would be large relative to the incomes of the residents because of the high costs of infrastructure. Also, all residents would have to be included irrespective of income. These factors require that separate subsidy and recovery mechanism would have to be designed for infrastructure provision (community based) and house-improvement or reconstruction (household based).

- *Households outside improvement or tenantry areas that could rehabilitate or improve their house or buy a house in the market with the assistance of a relatively small government subsidy that complements their own savings and/or a private sector loan.* By focusing on this section, the housing and housing finance market may be stimulated to provide products for a lower income group than they presently cater for. Different market segments that may be included in such a subsidy program are:
  - Rehabilitating or expanding an existing house
  - Purchase of land to built a core-house
  - Purchase of new basic house on a serviced lot
  - Purchase of an existing affordable house

Special concerns for subsidy design: The subsidy should be an incentive for households to acquire or improve housing according to their own preferences with their own funds complemented by market-based loans, and in the process stimulate a response in the lower income housing market. The amount of subsidy should be kept small relative to the household contribution (including market loans) in order to serve as many households with available government funds as possible. The program is not necessarily focused towards the lowest income households, but to those who can move to standard quality housing and formal sector financing with a relatively small government subsidy. Different housing options could be incorporated according to affordability, housing preferences and government priorities.

Since increasing home-ownership is a government objective the focus in this proposal is on home-ownership related subsidies. Also, apart from the tenantry areas, the private land and housing rental sector appears to be functioning well.

B. Profile of Possible Subsidy Recipients for Different Housing Scenarios

In this section we begin to profile typical recipient groups for the two possible types of subsidy programs and make an attempt to calculate required levels of subsidy for each group. At this time only preliminary results are available from the demand surveys conducted in urban tenantries and in a sample of non-tenantry low-income areas (see Lumsden) as part of this study and the data have to be refined at a later date when we have a better understanding of housing expenditures, constraints in improving housing conditions, housing priorities and preferences. We have used the income distribution figures from the Poverty Study of 1997 (see Section III).

Tenantry and Area Improvement Program

Households. The tenantry survey showed that not even one third of tenantry households own both their house and the land, while 45 percent owns their house. Close to one quarter of households do not own their house or the plot. This means that two-third of the households in a typical tenantry upgrading program will face more than the improvement costs of site infrastructure and plot connections only, but would have to buy the house (in case it is not owned by relatives who are prepared to secede the ownership rights) or the land (a relatively small expenditure given the Tenantry Act). In addition, tenure patterns differ considerably among the different tenantries. The great majority of those who own their house either built it themselves or inherited the house.

The type of tenure is related to the following housing and income characteristics which are relevant for the design of a subsidy program:

- There is a significant correlation between these tenure characteristics, and income and employment status of the head of household. Heads of household that rent both land and house have by far the lowest incomes. Indeed 48 percent reports an income of less than B$300 per month(B$3600 per year) and another 21 percent has no income (mostly pensioners). Of those who own both house and land only 18 percent has an income of below B$300, but close to half has no income (again these are mostly pensioners). The households that own the dwelling unit only and lease the land fall in between these ranges.
- The quality of the house is lowest for the renters of both land and house.

Both income and tenure characteristics provide a serious challenge for the design of a subsidy program for this category of households. Even if total household incomes would be double those of reported head of household incomes alone, and the non-earning heads would have earning relatives living with them that would be the main earners[30], the great majority of households would still have incomes well below B$7200 per year or well below the tenth percentile of the income distribution (B$9240).

No figures are available on tenure and incomes of "squatter" and other households in the improvement areas.

Infrastructure and Housing. We follow the suggestion by Bass to combine tenantry improvement and dedensification with development of adjacent underdeveloped and under-utilized land.

The cost of providing infrastructure on newly developed land (without sewer or suckwell which are included in the price of the house) is in the order of B$7 to 8 sq.ft., increasing with decreasing plot size. Moreover, an anticipated 30 percent would have to be added for infrastructure provision in already developed areas such as the tenantries within the ABC area. In improvement areas additional cost will be incurred to buy raw land (B$2 to 3 in the outlying areas within ABC and B$ 1 to 2.5 outside of the ABC area).

Kirke estimates that the price of a fully developed 3000 sq.ft. plot in a vacant area will be in the order of B$30,000. Development cost alone without the price of raw land but including a 30 percent overwrite for working on an already developed site such as the tenantry areas, would be B$31,200. Therefore, on average, the land and development costs in a combined upgrading, infill, relocation area is between B$30,000 to 31,000 for a 3000sq.ft. plot. An additional 5 percent for transfer tax and legal fees for conveyance (B$1500 to 2000) will be added, bringing the total to B$33,500 to 34,000 per plot.

If we assume that tenantry lots are on average 1500 sq.ft., the price of land development and overwrite, fees and taxes (not including raw land) would be B$20,400.

The cost of a small wooden house would be approximately B$ 35,000, the cost of a second hand chattel house is estimated at B$12,000 to 18,000, rehabilitating a house would be anywhere from B$5000 to 10,000 and only putting in a joint suckwell would be B$2500. The cost to move a house is approximately B$2000. On the basis of these figures different total cost scenarios can be calculated for various housing options.

For the approximately one third of households in tenantries that own their land and house, the minimum costs of site upgrading (1500 sq.ft.), installing a suckwell only and temporary relocation would be approximately B$24,900. Those households living in or being relocated to an improvement area, have to acquire the house and the land. The total costs involved would be B$51,500 (B$34,000 for land development, B$15,000 for a second hand chattel and B$2500 for a suckwell).

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[30] However, overall household size in the tenantries is small (two-third of the households have three or fewer members) and the proportion of the total population under 18 years old is 41 percent.

Affordability. Assuming an income of B$8000 per year and regular finance terms for home-improvement loans of 12 percent for 25 years, and a 10 percent down payment, the affordable loan would approximately be $20,000 if 33 percent of income is spent on the loan repayment and close to B$16,000 if 25 percent of income is allocated (the latter figure is more realistic for this low income group and given that on average housing expenditures are below 20 percent of income in Barbados). If a regular mortgage rate of 9 percent would apply, the affordable loan would be B$26,200 at 33 percent of income and B$20,000 at 25 percent of income respectively.

The majority of tenantry households may, however, have incomes well below B$8000 per annum, which makes the affordability gap much larger. At an income of B$5000 per year the affordable home-improvement loan at 25 percent of income would be close to B$10,000 (12%) and a mortgage loan B$12,400 (9%).

This analysis shows that even when efficient development prices are used and low housing costs, a considerable mismatch exists with household incomes in tenantry upgrading areas, a serious challenge for a possible subsidy program.

First Home-owner Purchase and Home-Improvement Program

In section III, an example was provided of the affordability gap in the new housing market. We calculated that a small two-bedroomed wooden house on a 3000 sq.ft. lot would cost approximately B$61,000 to 63,000 outside the ABC area and slightly more inside the beltway. These prices do not include the construction of a suckwell (B$2,500 for a joint well proposed by Kirke) or legal fees and tax payments (B$4000). The total cost would be in the order of B$67,500, which would require a monthly payment of slightly more than B$500 per month, assuming a 9 percent loan for 25 years and a 10 percent down-payment. Assuming further that 25 percent of income can be spent on housing, the required income is B$2050 per month or B$24,440 per year, which is at the 45^{th} percentile of the income distribution.

In order to expand the first-time home-ownership market to reach, let us say, the 35^{th} percentile, an income level of approximately B$21,000, a subsidy would be required of B$2,500 for the same housing option under the same conditions.

For households at the 20^{th} percentile of the income distribution, with approximately B$14,000 income per year, that have access to a plot of land through family for example, a similar housing option would be available with a subsidy of B$3,500.

Smaller subsidy amounts could make substantial rehabilitation of existing houses affordable to that same income bracket.

Table 4 shows alternative scenarios to calculate affordable housing loan amounts for different income levels. All examples are based on regular private sector mortgage lending and home-improvement lending terms with a simple up-front subsidy.

C. Suggested Design Principles for Subsidy Programs

The principles that would guide the design of the housing subsidies should be the same for both types of subsidy programs, and as much as possible the two programs should be complementary. Based on the analysis in Section V the following suggestions are made concerning subsidy design principles:

- *Provide subsidies where possible to enhance household demand for housing rather than supplying housing solutions by the government*. This principle has proven to increase the allocative efficiency of subsidies dramatically.

  Examples of demand side subsidies are vouchers or up-front subsidies through financial institutions to complement a down-payment for a loan or reduce monthly payments on a loan over a fixed period of time. This type of subsidy could be applied to various housing options; rehab, upgrading, new and used housing and would allow maximum flexibility in the use of the same subsidy program for a variety of needs.

  Demand driven subsidies are, however, more difficult to apply in area infrastructure improvement projects. Even in infrastructure programs the subsidy should be designed as much as possible to allow for demand side input, however.

- *Minimize subsidy cost per household*. This obviously allows more households to benefit and reduces the possibility that the subsidy replaces the household's own housing spending . While in some instances required subsidies may have to be large relative to the value of the house or household income, cost cutting ways should be sought to make the subsidy as small as possible.

  Examples of cost cutting measures in case of mortgage finance related subsidies are:
  a) use of mortgage insurance to reduce the size of the required down-payment subsidy
  b) use of a buy-down mortgage instrument that requires the establishment of an escrow fund in the bank from which supplemental monthly payments can be made to those made by the borrower for a fixed time, after which the household is supposed to be able to pay the full amount
  c) the soft-second mortgage instrument that provides a conditional subsidized second mortgage loan, that will have to be paid back if income and house-value at time of sale permit.

  In the case of infrastructure related subsidies, required subsidies can be cut by incorporating financing costs in the user fee structure of recipients.

  The most important cost reduction measure is, however, often not in the amount of subsidy provided, but in the use of efficient housing and infrastructure design standards (see cost cutting proposals of Kirke and Bass).

- *Minimize need for rationing*. When queues and waiting lists have to be maintained the possibility of windfalls (sale of the subsidy or the subsidized house) or political manipulation increases.

  One way to avoid rationing is to target specific communities or population groups, for example, selected tenantry upgrading and improvement projects. However, for housing subsidy programs targeted to individual households an alternative method may have to be used. For example, the government can set specific requirements for potential beneficiaries to obtain a subsidy in such a way that the number of qualifying households is kept in balance with available funds. Yet another way to deal with rationing is to use a lottery system to allocate subsidy funds. A lottery is not feasible, however, when government objectives require specific income groups or house-types to be included in the program.

- *Provide equitable rationing criteria*. The set of rationing criteria should allow the full range of potential recipients for the program to benefit and not only, for example, those at the top of the income bracket targeted for the program.

The subsidy program could be designed to have different tranches defined by housing options (rehabilitation, core-house, used and new house purchase) and income requirements. Within each tranch applicants could be ranked by other subsidy requirements to gain a priority score (e.g. number of household members, household savings, length of savings and ratio of own funds applied to the purchase or construction price, ownership of the land, community group applications).

The subsidy should be designed in such a way that both cash and income constraint households can participate. In other words, for households whose monthly incomes are insufficient to carry required monthly payments, a buy-down subsidy system is appropriate, while for those households that have a savings constraint, an up-front down-payment subsidy is more appropriate possibly coupled with mortgage insurance. However, a savings component would be required for all recipients and a 100 percent loan/subsidy system should be avoided (see section IV).

- *Minimize the need for ex post monitoring*. Government's capacity to monitor the use of subsidized housing outcomes is limited.

One time up-front subsidies and subsidies that are channeled through the private financial institutions or NGOs do not require much government management and only for a short initial period.

- *Provide financial accountability and transparency*. Preferably, subsidies should be budgeted for the full cost in the year the subsidy is provided. Also, all costs, including difficult to calculate opportunity costs, should be determined in order to allow a real cost comparison among various subsidy options and between public and private sector implementation systems.

- *Induce the private sector to participate in the subsidy program*. One of the important objectives of the subsidy programs would be to stimulate the private sector to serve a lower income segment than it presently does. The design of the subsidy program should, therefore, provide incentives for the housing finance and housing production sector to participate.

For example, for the finance sector such incentives would be: inducing savings for down-payments in the financial system, lowering the LTV ratio through down-payment subsidies, or having a mortgage insurance included in the subsidy amount to the recipient in case a higher LTV ratio is desirable, allowing the banks to cover real costs of originating and servicing of small loans through provisions in the demand-side subsidy.

For the production sector the main incentive would be: accessing additional customers through the subsidy administration without the need for marketing, and access to developed land.

C. Proposals for Alternative Subsidy Programs

The two different types of potential home-improvement programs require different approaches and implementation systems. The depth of subsidies required in the *Tenantry Upgrading and Area Improvement Program* would suggest the need for a two-pronged system of up-front subsidies and cost recovery through user fees, while the market-oriented *First Home-owner Purchase and Home-Improvement Program* would work efficiently using an upfront demand oriented subsidy approach. We will briefly outline these two alternatives.

Tenantry Upgrading and Area Improvement Program

The cost of various housing options will differ depending on the home- and land-ownership situation of individual owners in a tenantry upgrading/area improvement project. The following figures are rough estimates of land development and housing options used above to illustrate the different subsidy scenarios at two different income levels:

*Land Options (3000sq.ft.)**	
Site development/plot in tenantry(incl. 30% cost-overwrite)	B$34,000
Raw land costs and development/plot in imprt. area	B$33,500
*Land Option (1500 sq.ft.)**	
Site development/plot in tenantry(incl. 30% cost-overwrite)	B$20,400

* Inclusive of transfer tax and conveyance cost

Housing Options

One-or two-bedroomed wooden house /shared suckwell	B$37,500
House rehab including shared suckwell	B$ 9,500
Second hand chattel and shared suckwell	B$17,500
Cost of moving a chattel house/shared suckwell	B$ 4,500

The total cost for different packages will range from B$71,000 for a plot and new basic house in an improvement area, to B$24,900 for a tenantry plot, the relocation of a chattel house to a new development area and suckwell installation. An intermediate option is B$29,900 for a tenantry plot and house rehabilitation.

Affordable Loan (12% interest, 25 years, at 25% of income)and Subsidy Requirement.

Income/Yr	Aff. Loan	Aff. Loan 10% down	Subsidy Required for Diff.Options. B$24,900	B$29,900	B$71,000
B$8000	B$15,800	B$17,600	B$ 7,300	B$12,300	B$53,400
B$5000	B$10,000	B$11,100	B$13,800	B$18,800	B$59,900

These calculations show that for the lowest cost housing option and the maximum in private sector loans the household can afford, the subsidies required would range from B$7,300 to B$13,800 (or 30 to 55 percent of the cost of the housing package), at income levels of B$8000 to B$5000 per annum. If higher cost packages would be used the levels of subsidy become considerably higher.

Community Infrastructure Fund

It may, however, be unrealistic to suppose that banks are willing to provide loans to low-income households mostly for land development in dense low-income neighborhoods, leaving households without borrowing capacity for home-improvement and maintenance. Such loans would simply be too risky.

The alternative and more realistic way to design a subsidy cum-recovery-scheme for low-income tenantry areas would be to set up a community infrastructure fund for each tenantry project for the financing of site infrastructure. The funds would be structured to have both subsidy funds and investment funds recoverable through surcharges on user fees. The surcharges on the recoverable part should not consume the total monthly payment capacity of the household for housing, but leave room for home-improvement and extension activities and loans.

For example, if in the above scenario the cost of land and land development (B$20,400 in tenantries) would be financed from the fund, partly as a subsidy and partly as investments to be recovered through extra monthly charges, the monthly payment structure would be as follows:

Affordable Payments to Community Infrastructure Investment Fund

Income/yr.	Aft. PMT	Surcharge PMT*	Recoverable Infr.Loan**	Infra. Subsidy at B$20,400 cost
B$8000	B$167	B$111	B$11,000	B$ 9,400
B$5000	B$104	B$ 69	B$ 8,575	B$11,825

* Monthly payments for infrastructure are two-thirds of total monthly payment capacity for housing at 25% of income.
** Based on 9% for 15 years.

That part of a household's monthly payment capacity for housing not spent on surcharges (one third in this example), would be available to obtain small, incremental loans for home-improvements from the private finance sector. For example the B$56 per month left from the affordable PMT of B$167 with an B$8,000 income, could buy B$2517 in loan amount at 12 % for 60 month. Complemented with own savings of 10 percent the amount available would be B$2800. Equally, at an income level of B$5000 the available amount in savings and loan would be B$1750.

Decisions on the level and type of services and infrastructure to be developed under the community infrastructure fund could be taken in collaboration with the communities. The trade-offs in quality of services and monthly payments need to be explained. Also, the community may decide that it wants to provide some of the services on the basis of self-help in order to keep the cost of development low. The greater the sense of community ownership the better the chance that repayment and maintenance will be successfully accomplished.

Lastly, thought has to be given as to what sanctions can be implemented in case households do not pay. If the charges are tied to water bills, water could be closed off. If tied to land taxes the plot could be placed under a lien and ultimately repossessed. Alternatively the monthly payments could be collected separately by a private agency, NGO or financial institution on a commission basis tied to level of recovery.

First Home-Owner Purchase and Home-Improvement Program

This type of subsidy program can be structured as a straight forward up-front subsidy, possibly with some special options to lower the required subsidy costs.

Types of loans. The program may include *land development loans, home-improvement loans, construction loans, and permanent mortgage loans*, all presently offered in the Barbadian housing finance market place. This flexibility will guarantee a wide array of choices to the customer. Yet, because the underwriting and loan recovery is carried out through the private sector lending institutions there is no need for a cumbersome administrative structure to keep track of loan performance.

Program Components. The design features of these different options are similar and all would have three main components:

1. *A subsidy component*. A down payment subsidy is an upfront contribution to the down payment in order to a) reduce the mortgage payment to the level that the borrower can afford it, or b) reduce the down payment required by the lender. The size of the subsidy is calculated differently for the two purposes.

Table 4 show scenarios that keep the down payment constant at 10 percent of the value of the house and the subsidy required is determined by the gap between affordable loan amount and the cost of different housing options at different income levels. The affordable loan amounts with a 10 percent down payment and an upfront subsidy of B$2,500 allows a household with an income of B$21,000 (the 35th percentile of the income distribution) to acquire a two-bedroomed wooden house on a 3000sq.ft. plot outside of the ABC area at a cost of B$67,500, if it spends close to 30 percent of income for loan repayment. The same housing option would only be affordable by a household earning $24,400 (at the 45th percentile of the income distribution) without subsidy.

Although beautifully simple, the upfront down payment subsidy is more costly than it needs to be to make a given house affordable to a subsidy recipient at a given income level. Above, we briefly discussed several ways to reduce the cost of the upfront subsidy by using a combination of mortgage insurance to increase the loanable amount and a mortgage instrument that allows the monthly payments of the recipient to rise over a fixed time period. These options can be detailed at a later time if the government decides to move to a system of upfront subsidies.

2. *A savings component*. A savings plan to accumulate a down payment for loan applicants fulfills several important functions:

- It reduces the size of the required subsidy or loan amount. Subsidy programs should be designed to encourage a larger than the minimum required down payment to encourage savings; for example, by making the savings amount one of the rationing criteria to move up in the queue. Even providing an increase in the amount of subsidy when borrowers have additional savings (for instance for half the additional amount saved), would still reduce the overall subsidy amount in most cases. If there is no benefit to save, but rather by having higher savings the subsidy amount is reduced dollar for dollar, no applicant will save for more than the minimum down payment.

  There is one drawback in the rationing by savings amount though. It can lead to inequity when this method is applied across income brackets. However, when the applicant pool is divided in income tranches for different housing options, the savings criteria is fair and efficient.

- It encourages savings in the financial sector, making the participation of financial institutions more likely. In fact, it is this savings feature that is one of the main incentives for private financial institutions to get involved with lower income customers under the subsidy program.

- It instills savings discipline in the borrower. This works only, however, if a specific savings period is required and not a specific amount of savings. To make the completion of a savings plan required, however, would disadvantage applicants that can accumulate assets through transfers, etc.

- Savings for a down payment increase equity in the property and will decrease default risk. In other words, participants are less likely to walk away from their property when market values decrease or the economic condition of the family worsens, making payments is difficult.

3. A complementary market loan component. The loan component of the program comes from private sector lenders who set their terms and price their services according to market conditions. Although the applicants will be pre-screened by the program administration, the banks must do their own appraisal and underwriting of the customer and the property. The program would be best served if more than one group of lenders (credit unions, trusts, insurance companies) would participate and compete for customers under the program. It should certainly be avoided to have government banks or programs such, as BNB or BMFC, be the main implementing institutions. However, the program administration should make sure that banks are offering competitive rates to the customers from the subsidy program.

Some incentives to entice banks to participate (apart from the increase in savings accounts mentioned above), are:

- The upfront subsidy decreases the LTV ratio and combined with mortgage insurance, the collateral risk should be reduced.
- The actual cost of loan origination must be charged and must be incorporated in the calculation of the subsidy amount.
- The cost of servicing should be based on the actual costs to serve this type of portfolio and be added to the monthly payment. After the rate equivalent of the servicing costs has been calculated, this should be deducted from the rate. Thus, the borrower pays for the service charge but pays a lower rate.

Participant selection. One of the first tasks in designing the program is to set the basic income tranches and affordability criteria. Within that overall framework a point system can be designed to reflect government policy priorities. For example, a) socio-economic priorities, e.g. types of housing options (rehabilitation, new construction, etceteras) , group-based projects through NGOs or individual households, geographic locations (urban, rural), special social groups (female-headed households, young or large families), and b) priorities to increase the efficiency of the program, e.g. amount and time of savings, proportion of own funds that can be applied to the down-payment.

The structure of the program should be progressive in two ways; higher subsidies should be allocated to lower income groups and a larger proportion of overall available funds within each budget year would be allocated to lower income tranches or housing options.

Lastly, the program could incorporate a separate component designed for renters in NHC rental units to facilitate the purchase of the house.

D. Program Administration

Effective management is critical to the success of the programs. The Firsts-Time Home-Buyers Program is fairly easy to administer, since most of the lending related tasks are taken care of by the private institutions. Yet participant selection and monitoring has to be done by an administrative unit.

The Tenantry Upgrading and Area Improvement Program requires the establishment of community funds and working with individual community groups. This latter task can be facilitated if a qualified NGO exist that can take over this task as an intermediary organization between government and community groups.

Certain functions are required for both programs; for example, preparing detailed program designs, working for policy reform, financial management of the subsidy programs, working with participating builders and lenders, and public relations.

E. Towards a New Housing Subsidy Program

Although we only have preliminary cost figures and population income and demand data at this point, a possible subsidy program could be designed without too much difficulty. As a first step, the government has to decide whether it wants to move away from the present systems of supply-side and interest-rate subsidy provisions towards a more upfront, transparent and better targeted system of subsidizing housing.

The tenantry upgrading program may be the first to develop the proposed two-pronged system of up-front subsidies and cost recovery through user fees. The market-oriented First Home-owner Purchase and Home-Improvement Program could be introduced after the government has made the necessary adjustments in its present subsidy system.

Annex 1

TABLE 1 Market for Long-Term Mortgages in Barbados[1]

Year	Trust Co's.	Insur. Co's	BFMC	Comm'l Banks	Total	% of GDP
1980	57.8	45.7	33.3	17.5	154.3	8.9
1981	72.2	55.3	39.1	19.7	186.3	9.8
1982	78.7	47.4	43.2	20.2	189.5	9.5
1983	79.1	53.0	48.1	23.8	204.0	9.7
1984	86.8	62.9	52.6	22.7	225.0	9.8
1985	94.4	73.1	55.5	24.3	247.3	10.3
1986	118.0	82.6	62.8	29.4	292.8	11.1
1987	146.7	94.5	70.3	33.9	345.4	11.9
1988	183.7	108.0	74.8	32.9	399.4	12.9
1989	224.8	123.8	84.2	33.7	466.5	13.6
1990	252.1	143.2	90.1	34.0	519.4	15.1
1991	274.9	152.3	93.9	33.5	554.6	16.3
1992	282.5	159.2	95.1	32.8	569.6	17.9
1993	292.5	152.2	97.2	31.8	573.7	17.4
1994	308.9	151.6	96.2	34.6	591.3	17.0
1995	323.9	155.2	96.9	35.8	611.8	16.4
1996	343.7	156.3	100.7	36.5	637.2	16.0

[1] Source: Central bank of Barbados, Annual Statistical Digest

TABLE 2 Mortgage Interest Rates since 1980.

Effective Date	Existing Loans	New Loans
1976-1980	10.0	10.0
October-81	12.0	12.0
December-82	11.0	11.0
October-83	10.0	10.0
April-84	10.0	11.0
July-84	11.0	13.0
April-85	11.0	12.0
September-85	11.0	11.0
April-86	10.0	10.0
October-86	9.0	9.0
August-91	11.0	11.0
January-93	10.0	10.0
June-93	9.0	9.0
January-94	8.0	8.0
March-95	9.0	9.0
July-95	10.0	10.0
Jul-97	9.0	9.0

Annex 3

Government Housing Subsidy Costs and Operating Losses.

Subsidy	BDS dollars	Concept	Data Source	Notes
National Housing Corporation				
Loans	*(????)*	Market loss on loan operation		1
	1,685,352	Operating loss	NHC 1998 budget	2
	6,044,027	Loan defaults	NHC information	3
Rentals	11,800,000	Market loss	NHC information	1
	4,717,000	Operating loss	NHC 1998 budget	2
	4,000,000	Delinquencies	NHC information	3
Sales	30,000,000	Land cost	estimated	4
Housing Credit Fund				
Loans	638,600	USAID loan	HCF information	5
	(????)	Venezuela loan		6
Urban Development Commission				
Loans	(????)	Market loss	UDC information	7
	(????)	Operating loss		8
Barbados Mortgage Finance Company				
Loans	550,000	Tax exemption	BMFC reports	9

Notes:

1. The below market rates charged by NHC in some of its loan operations and in all of its rental operations. Rents are reported to be at an average of B$33 per week, versus a market standard of B$400 per month, equivalent to a 62% subsidy.
2. The operating losses incurred by the NHC in its loan and rental operations are a hidden subsidy incurred by the government in the provision of these services.
3. The loan defaults and rental delinquencies suffered by the NHC are another efficiency loss incurred by the government in the provision of these services. Loan defaults are estimated by NHC at 33% of its portfolio and rental delinquencies at between B$3.5m and B$4.5m.
4. NHC is not charged by the government for the land that the Ministry turns over for development and sale. Acquisition and current cost figures were not made available. Most purchases are reputed to have been made years ago at under B$1/sq.ft., but carrying costs (such as management costs, and interest and tax charges) have not been factored in. As an alternate estimation of value, the opportunity cost today is figured at close to B$5/sq.ft. The NHC is planning to sell at 6m sq.ft. in 1998.
5. The figure shown corresponds to an interest rate differential between the 11.65% paid to USAID (*paid by the government*) on a balance due of US$6.2m and the 6.5% charged by HCF on its loans. However, it should be noted that NHC is anticipating a rate of 4.5% on a B$1m loan from HCF.

6. *A full financial statement for HCF and details of this particular financing are not available*.
7. On every B$1m placed at the advertised loan rate of 7%, versus a market rate of 9% the subsidy would be B$20,000.
8. *Figures for corresponding operating costs and future loan loss were not available*.
9. Calculated on an estimated net income of B$2m taxed at BMFC's special tax rate of 12.5% versus the standard corporation tax rate of 40%.

Barbados Upfront Housing Subsidy Scenarios

	NHC	35th percentile of income distribution				20th percentile of income distribution				< 10th distrib
Annual income level	$ 30,300	$ 21,000	$ 21,000	$ 21,000	$ 21,000	$ 14,000	$ 14,000	$ 14,000	$ 14,000	8,00
Monthly income	$ 2,525	$ 1,750	$ 1,750	$ 1,750	$ 1,750	$ 1,167	$ 1,167	$ 1,167	$ 1,167	66
Weekly income	$ 541	$ 375	$ 375	$ 375	$ 375	$ 250	$ 250	$ 250	$ 250	14
Borrowing capacity	25%	25%	33%	25%	33%	25%	33%	25%	33%	25%
Monthly pmt.capacity	$ 631	$ 438	$ 578	$ 438	$ 578	$ 292	$ 385	$ 292	$ 385	16
Affordability - years	15	20	20	25	25	20	20	25	25	2
Affordabiity - interest	9%	9%	9%	9%	9%	9%	9%	9%	9%	12%
Affordable loan	$ 62,237	$ 48,626	$ 64,186	$ 52,133	$ 68,816	$ 32,417	$ 42,791	$ 34,755	$ 45,877	15,13
Savings effort	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Subsidy applied		$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 3,500	$ 3,500	$ 3,500	$ 3,500	5,00
Afford w/loan alone	$ 62,237	$ 48,626	$ 64,186	$ 52,133	$ 68,816	$ 32,417	$ 42,791	$ 34,755	$ 45,877	15,13
Afford w/Savings	$ 69,152	$ 54,029	$ 71,318	$ 57,926	$ 76,462	$ 36,019	$ 47,545	$ 38,617	$ 50,975	16,81
Afford w/Subs		$ 51,126	$ 66,686	$ 54,633	$ 71,316	$ 35,917	$ 46,291	$ 38,255	$ 49,377	20,13
Afford w/Svng & Subs		$ 56,807	$ 74,096	$ 60,704	$ 79,240	$ 39,908	$ 51,434	$ 42,506	$ 54,864	22,37

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