

PN-AAZ-133
34112

FOREIGN EXCHANGE RISK
MANAGEMENT TECHNIQUES
FOR AID'S HOUSING GUARANTY PROGRAM

April, 1987

Prepared Under Contract
Number IQC OTR-000-I-00-6103-00
Delivery Order No. 6

TABLE OF CONTENTS

	<u>Page</u>
EXECUTIVE SUMMARY	i
I. INTRODUCTION	
A. Background	1
B. Objectives	3
II. FOREIGN EXCHANGE RISK MANAGEMENT TECHNIQUES FOR THE HOUSING GUARANTY PROGRAM	
A. The Financial and Regulatory Environment	4
B. Risk Management Options	7
1. Swaps	8
2. Collateral Account	17
3. Local Currency Guaranty	21
4. Revolving Credit Usage	23
III. LA BANQUE DE L'HABITAT DU SENEGAL (BHS) PROJECT	
A. Overview	27
B. Financial and Institutional Analysis	27
C. Prospects in the Future	30
D. Conclusions and Recommendations	31
IV. CONCLUSIONS AND RECOMMENDATIONS FOR RISK MANAGEMENT TECHNIQUES FOR THE FRANC ZONE	33
Annex I - List of Persons and Organizations Visited	

LIST OF TABLES

	<u>Page</u>
1. Housing Finance - Terms and Conditions in Senegal	6
2. Currency Swap	10
3. Interest Rates for Currency Swap	11
4. Exposure on Currency Swap	12
5. Interest Rate Swap	14
6. Interest Rate for Currency and Interest Rate Swap	15
7. Exposure on Currency and Interest Rate Swap	16
8. Collateral Account	19
9. Interest Rates for Collateral Account	20
10. Exposure on Collateral Account	21
11. Interest Rate for Local Currency Guaranty	22
12. Exposure on Local Currency Guaranty	23
13. Interest Rate for Revolving Credit Usage	25
14. Exposure on Revolving Credit Usage	26
15. BHS - Financial Data of Selected Years	28
16. BHS - Funding Sources	29

LIST OF ABBREVIATIONS

BCEAO	Banque Centrale de l'Afrique de l'Ouest
BHS	Banque de l'Habitat du Senegal
CFAF	Communaute Financiere Africaine franc
FAHU	Fonds pour l'Amelioration de l'Habitat et de l'Urbanisme
GOS	Government of Senegal
HGP	Housing Guaranty Program
NCC	National Credit Committee
PRE/H	A.I.D. Office of Housing and Urban Programs
PSP	World Wide Private Sector Housing Guaranty Program
UMOA	Union Monetaire Ouest-Africaine

Exchange Rate: US\$1 = CFAF 300

EXECUTIVE SUMMARY

The United States Agency for International Development (A.I.D.) has been providing capital for shelter programs throughout the developing world for more than 30 years. The main vehicle for assistance is the Housing Guaranty Program (HGP), through which A.I.D. has sought to mobilize US capital for LDC shelter programs with a guaranty mechanism. These dollar-denominated resources are used by both public and private sector institutions, but, in most instances, the host country government provides a full faith and credit guaranty to A.I.D. Essentially, a host country government assumes the foreign exchange risk which results from lending dollar resources for local currency applications.

In many countries, the era of sovereign lending has come to pass. This fiscal reality, coupled with a strong interest in promoting private sector development, has led to the development of a new subproject under the HGP - the World Wide Private Sector Housing Guaranty Program (PSP). The purpose of this program is to create housing projects initiated by the private sector as a complement to A.I.D.'s ongoing housing programs with LDC governments. Mobilization of these resources, however, may require the use of effective risk management techniques to protect borrowers from currency fluctuations which result from maintaining a long-term unhedged position in US dollars.

A number of countries and private sector organizations in West Africa have recently expressed an interest in using HGP resources. The most immediate prospective borrower is the Banque de l'Habitat du Senegal (BHS), a private sector mortgage bank. The most basic obstacle preventing project implementation is a two-fold foreign exchange risk: (1) the risk of the dollar appreciating vis-a-vis the French franc (the currency to which the local currency, the CFAF, is pegged), and (2) the possibility of a complete or partial change in parity between the CFAF and the French franc. In today's international capital markets, there are no available long-term hedging mechanisms which would minimize this two-fold risk. Effective protection, therefore, must be found through alternative long-term forward contracts.

The financial environment within member countries of the Union Monetaire Ouest-Africaine (UMOA), the regional monetary union, also imposes constraints on the effective mobilization of HGP resources. The most critical constraint is the control over interest rates imposed by the Banque Centrale de l'Afrique de l'Ouest (BCEAO) and the National Credit Committees (NCCs) in each country. The interest rate for low-income housing projects is presently established below the cost of borrowing long-term on the international capital markets, causing a negative rate of return for the project. In most

instances, this deficit has been covered by a subsidy from the host country government.

Working within these parameters and constraints, Deloitte Haskins & Sells was commissioned in March 1987 to assist A.I.D. and those countries using the CFAF common currency to identify, analyze and assist in implementation of risk management techniques for HGP resources. To test the viability of the various options, the BHS project is to be used as a pilot project for using PSP resources without a sovereign guaranty.

Four techniques are available to minimize the foreign exchange risk, including swaps, collateral accounts, local currency guaranties and a revolving credit facility. The first, and preferred option, is a currency and interest rate swap between the borrower and the BCEAO. This type of transaction is, essentially, a hedging vehicle which protects parties from interest and exchange volatility on forward commitments. A swap involves the exchange of two currencies and an agreement to re-exchange these currencies after a set period. The initial exchange is made at the current spot rate, and the same currency rate is used for the future transaction, regardless of intervening exchange rate changes. The BCEAO is the natural swap partner for borrowers within the UMOA because it will build up incremental dollar reserves and earn interest income, but incur no commercial or foreign exchange risk.

1. Swaps

The mechanics of this transaction first involve a swap of currencies. A eligible US investor would lend dollars to a host country borrower and the borrower would then exchange the dollars at the prevailing exchange rate with the BCEAO, leaving the borrower with CFAF to on-lend as mortgages. The BCEAO would then have dollars which could be invested in an interest-bearing, long-term, dollar-denominated financial instrument such as US Treasury Bonds. At the time payments are due to the US investor, the borrower would swap CFAF for dollars with the BCEAO. This transaction would leave the borrower with an interest liability of approximately 9.25 percent in US dollars based on current market conditions. The BCEAO, on the other hand, would receive interest income on the dollar deposit estimated at 7.60 percent.

In order to mitigate the foreign exchange risk on the interest payments, the borrower could then enter into an interest rate swap with the BCEAO. Under these circumstances, the borrower would continue to assume the dollar liability on interest repayments, but would also earn the interest on the dollar deposit. The borrower would also incur a CFAF liability to the BCEAO at a rate which will depend on the pricing arrangements of the swap. The net effect of this transaction is that the borrower would incur an annual interest rate in the range of 4.65 - 7.65 percent payable in CFAF, depending upon the negotiated swap price and the BCEAO would earn income at the rate of 3 - 6 percent annually.

2. Collateral Account

The second technique which could be employed to mitigate the foreign exchange risk is a collateral account. This loan structure involves two separate loan accounts: one in US dollars and one in local currency. The US dollar loan would be deposited in a cash collateral account in the United States which would be invested in a long-term, dollar-denominated obligation. Against the collateral account, the lender would make available a local currency loan to the borrower for an amount equivalent to the US dollar loan at the prevailing exchange rate. As the dollar loan becomes due, payments would be sourced from the dollar deposit account. In order to assure that the local currency loan maintains its value vis-a-vis the dollar guaranty (e.g., if the CFAF appreciates against the dollar), the borrower would be required to reduce the CFAF debt accordingly. Conversely, if the CFAF depreciates, additional local currency can be made available to the borrower.

The estimated interest rate under this transaction would be 12.5 percent under current market conditions. This rate is above current permissible lending rates for low-income housing and could result in a negative spread for the borrower if a rediscount facility or financial contribution to the project were not available.

3. Local Currency Guaranty

A simplified version of the collateral account, and the third type of transaction, is a local currency guaranty. The key difference between the two techniques is that the latter would eliminate the need for a US dollar loan. Rather than making a US dollar loan in parallel with a local currency loan, A.I.D. would simply guarantee the equivalent amount in local currency. The lender would have the responsibility of monitoring the CFAF exposure vis-a-vis the dollar guaranty. The benefits of this approach over the collateral account include a reduced rate for the borrower and the elimination of the dollar loan on its balance sheet.

4. Revolving Credit Usage

The last technique developed in this report is a revolving credit facility. This type of transaction does not mitigate the foreign exchange risk, but transfers the burden to the borrower and the beneficiaries. Rather than lending HGP resources directly for mortgages, the revolving credit usage would involve construction loans to developers for approximately 12 to 18 months. The objective of this technique is to reduce the period of foreign exchange exposure from a 20-year term to a manageable time frame.

The transaction involves an eligible US investor lending dollars to a borrower. The loan proceeds would then be on-lent to a developer to finance construction of the low-income housing project

approved by A.I.D. After the construction period is complete and the housing units sold, the developer would repay the construction loan in CFAF at the prevailing rate to the borrower. During this period, the foreign exchange risk would have to be managed through adjusting the sales price of the housing units and, to the extent that the adjustment exceeds the purchaser's absorptive capacity, the borrower can hedge in short-term currency markets. After successful completion of the first loan to the developer, the borrower is in a position to reinvest the HGP resources in a similar housing scheme. Alternatively, the borrower can "park" the funds in US dollar securities pending realignment of the currency risk.

Although this technique allows the borrower to effectively leverage HGP resources, the commercial risk would increase significantly. Reinvestment of the HGP resources is predicated upon continued growth of the borrower's local currency resources as necessary to "take-out" the construction loans. This type of transaction will also require the borrower to aggressively manage the currency exposure, a skill which is still unknown by most mortgage banks within the UMOA.

The four risk management techniques presented above are by no means an exhaustive treatment of the subject, but offer possibilities which can be implemented within the UMOA countries. The best possible solution is the currency and interest rate swap with the BCEAO. This technique would eliminate any exchange risk for all parties concerned and allow the ~~BCEAO to earn a profit on the incremental dollar~~ reserves. This swap arrangement would also reduce the need for a government subsidy by reducing the borrower's cost of funds to a level which is less than the current mandated mortgage rate.

Implementation of this option will rest upon a favorable determination by the decision-making body of the BCEAO. The proposed BHS project in Senegal - a sites and services and low-income housing project in the southern part of the country - represents an ideal opportunity to formally present this option. BHS is the sixth largest bank in Senegal, and, since its inception, has been a profitable institution. BHS' main sources of funds include term deposits, savings accounts and a housing grant from the Government of Senegal (GOS). The latter is used to finance social loans for low-income housing and is sourced from a line item in the GOS' budget each year. The funds are provided at no cost to BHS and, in 1986, represented approximately 32 percent of the bank's total sources of funds.

BHS' activities and financial performance during the past five years should be considered exemplary, given the downturn in the Senegalese economy. Although the bank has grown less rapidly than originally projected, it has successfully mobilized savings and has fulfilled its mandate to provide low-cost housing. The prospects

for the future remain bright, assuming the bank can diversify its sources of funds and improve its funding structure so that the cost of funds and the rates and maturities of its outstanding loans are matched with its sources.

To proceed with implementation of the BHS project, it is recommended that a US\$ 2 million project be formally presented to the BCEAO as a swap transaction. Although the project amount is relatively small, this transaction could establish a mechanism for effective foreign exchange risk management for other institutions in the region. Recognizing BHS' desire to implement the project in the immediate future, it is further recommended that the local currency guaranty option be pursued along a parallel track.

I. INTRODUCTION

A. Background

For over thirty years, the U.S. Agency for International Development (A.I.D.) has provided capital for shelter programs throughout the developing world. The main vehicle for assistance is the Housing Guaranty Program (HGP), through which A.I.D. has sought to mobilize US capital for developing-country shelter projects with a guaranty mechanism. The HGP has been extremely effective. As of December 1986, A.I.D. has undertaken 152 projects in 44 developing countries with over US\$1 billion in disbursements and US\$1.5 billion in authorizations. Among donor countries, the United States now provides the largest amount of assistance to the shelter sector in developing countries.

The HGP is a program through which the US private sector provides long-term financing for low-income shelter and urban upgrading programs in developing countries. Eligible borrowers include government ministries, national housing banks, housing development corporations, savings and loan associations, or similar institutions in the private sector. The borrower seeks the most favorable terms available in the US capital markets for a US Government guaranteed loan, usually for a term of 30 years. Historically, when the borrower was a non-government entity, the host country government has provided a full faith and credit guaranty to the US lender and A.I.D. Essentially, the host-country government assumed both the commercial and foreign exchange risk in the event of default by the parastatal or private institution.

Recognizing the limitations of sovereign lending, A.I.D. has been examining alternative lending options for the HGP. Simultaneous with these fiscal realities, A.I.D.'s Office of Housing and Urban Programs (PRE/H) has been shifting its emphasis towards increased private sector participation. A new program, the World Wide Private Sector Housing Guaranty Program (PSP), was authorized in September 1986 and is intended to facilitate an increased role for the private sector in shelter programs.

The PSP provides for a US government guaranty to US investors so as to ensure against losses incurred from loans made to private sector firms, including financial institutions and builders/developers in LDCs. The purpose of the project is to create housing programs initiated by the private sector as a compliment to A.I.D.'s ongoing housing programs with LDC governments. Similar to traditional HGP loans, the project can guaranty a loan for up to thirty years at the

/

best available interest rate for long-term loans in the US capital markets.

The PSP, however, has highlighted the need for effective foreign exchange risk management tools to mitigate the inherent risks which result from dollar lending for local currency earning ventures. Unlike the traditional HGP which assumes a sovereign guaranty, the mandate for this program includes the use of commercial risk management options, including currency swaps, collateral accounts and other similar tools to mitigate the inherent foreign exchange risk.

To date, no projects have been authorized under the PSP. A number of countries and private sector organizations, however, have expressed an interest in using HGP resources, including Senegal, Gabon and Cote d'Ivoire. All of these countries are members of the Union Monetaire Ouest-Africaine (UMOA), share a common currency (CFAF) and must adhere to the credit, interest rate and financial controls of the Banque Central des Etats de l'Afrique de l'Ouest (BCEAO). However, all of these parties have also indicated that the potential foreign exchange risk associated with the dollar-denominated resources could represent an impediment to project implementation.

Unlike many other HGP participants, the member countries of the UMOA do not, in general, have long-term obligations in US dollars. The majority of their foreign reserves and transactions are denominated in French francs, the currency to which the CFAF (Communaute Financiere Africaine franc) is pegged. Parity between the two currencies has been set at FF1 = CFAF50 since 1948. France ensures unlimited convertibility of the CFAF into French francs through an operations account at the French Treasury, which holds a portion of the foreign exchange reserves of all member countries.

Thus, the perceived foreign exchange risk for a US dollar denominated loan which would be used for on-lending in CFAF is two-fold: (1) the risk of the dollar appreciating vis-a-vis the French franc and, given the term of the loan, (2) the possibility of a complete or partial change in parity between the CFAF and French franc. In today's international capital markets, there are no available short or long-term hedging mechanisms which would minimize the potential foreign exchange risk between the CFAF and the French franc. Additionally, there are presently no long-term hedging options (i.e., 20 years) between the US dollar and the French franc. Effective protection, therefore, against the inherent foreign exchange risk must be found through alternative long-term forward contracts.

B. OBJECTIVES

In March 1987, A.I.D.'s Office of Housing and Urban Programs (PRE/H) commissioned Deloitte Haskins & Sells to assist A.I.D. and those countries using the CFAF common currency to identify, analyze and assist in the implementation of risk management techniques for HGP resources. The terms of reference include an analysis of the financial and regulatory viability of various risk management options that would meet the terms and conditions of potential US lenders.

To test the viability of the various options available, the consultant's Scope of Work also includes an analysis of the proposed PSP loan for a private sector borrower - the Banque de l'Habitat du Senegal (BHS) - and preparation of recommendations which would minimize the commercial risk for a transaction without a sovereign guaranty.

To meet these objectives, a mission was undertaken in March 1987 to Senegal and Cote d'Ivoire. The findings of the mission as well as subsequent analysis are presented in this report in the following sequence:

- Foreign Exchange Risk Management Techniques for the Housing Guaranty Program are presented in Chapter Two and include a critique of the techniques currently used by A.I.D. as well as a discussion and analysis of other alternative solutions. For illustrative purposes, the financial environment in which the BHS operates is used as an example throughout the discussion.
- La Banque de l'Habitat du Senegal (BHS) Project financial and institutional analysis as related to the A.I.D. Guaranty Program and recommendations are presented in Chapter Three.
- Conclusions and Recommendations for Risk Management Techniques for the Franc Zone are presented in Chapter Four.

II. FOREIGN EXCHANGE RISK MANAGEMENT TECHNIQUES FOR THE HOUSING GUARANTY PROGRAM

A. The Financial and Regulatory Environment

The West African countries of Benin, Cote d'Ivoire, Mali, Niger, Senegal, Togo and Burkina Faso are members of a monetary union referred to as Union Monetaire Ouest-Africaine (UMOA) and share the following characteristics:

- (1) a common currency -- the CFAF;
- (2) compatible external exchange restrictions;
- (3) minimal constraints on internal capital mobility; and
- (4) a coordinating institution -- the BCEAO -- which holds a common set of foreign exchange reserves.

The member countries of UMOA were formerly French colonies participating in the Franc Zone and the local currency, the CFAF, was issued by two regional issuing institutions. Following independence, these countries chose to remain within the Franc Zone, but desired more autonomy. The supranational Central Bank, the BCEAO was established, but is still subject to French influence. The BCEAO is responsible for monetary and fiscal policy and management of the common pool of foreign exchange reserves. The BCEAO headquarters in Senegal is responsible for the formulation of policy, but the agencies in each member country conduct local operations.

Today, the UMOA continues to use the CFAF as the common currency and sets no controls on capital mobility within the Franc Zone. Each country, however, imposes its own particular external trade and exchange restrictions. The fixed parity between the CFAF and the French franc is guaranteed by the French Treasury. In return for this guaranty, the BCEAO is obliged to hold an operations account with the French Treasury and must deposit at least 65 percent of its nonoperational foreign exchange reserves with the Treasury. To maintain stability, the French provide compensation to the BCEAO for any decline in the value of these reserves against a chosen index -- currently the International Monetary Fund's Special Drawing Right. In the event the reserve position with the French Treasury is insufficient, the BCEAO is obliged to replenish the account from its own non-French franc reserve holdings.

The BCEAO is responsible for fiscal and monetary policy and management of the common pool of foreign exchange reserves. In terms of fiscal policy, the BCEAO essentially acts as a banker to each of its member governments. The prevailing policy today is that total gross credit must not exceed 20 percent of each member government's tax receipts in the previous year. Credit to the individual government can take the form of short-term advances, holding of long-term securities and rediscounting of commercial bank credit to the public sector.

Monetary policy within the UMOA is determined jointly by the Board of Directors of the BCEAO, composed of two delegates from each member country and French representation. The Board of Directors, which normally includes the Minister of Finance of each member country, is assisted at the national level by the National Credit Committee (NCC) which proposes a total regional money supply target for each year. The sectoral allocation of credit at the national level is determined by the NCC, in accord with the targets set by the Board of Directors.

The three main controls over monetary policy used by the BCEAO and the NCCs are (1) control over commercial bank rediscounting; (2) ceilings on commercial lending; and (3) establishment of interest rates. Rediscounting of commercial bank paper which is equivalent to a commercial bank borrowing from the BCEAO, is controlled by the NCCs, in accordance with the annual targets established with the BCEAO. Monthly rediscount limits are established, and are generally not communicated to the banks. In practice, the rediscount markets vary from country to country. In Senegal, for example, the present policy is to use the rediscount facility to ease liquidity problems rather than for expansion of bank operations. As a result, access to the rediscount facility for some commercial banks in Senegal is extremely limited. Conversely, rediscounting is used by the majority of banks in Cote d'Ivoire and an active interbank market has developed.

A ceiling on commercial lending is a relatively new policy instrument for the BCEAO. In order to enforce the credit budgets formulated for each country, the BCEAO found that it was necessary in the early 1980s to place direct ceilings on commercial bank lending to prevent overruns of targets. Not only is sectoral credit allocation controlled by the NCCs, but the BCEAO also sets a ceiling on the maximum amount of credit which can be extended to public and private enterprises within the sector. Medium-term credit, for example, cannot be extended for more than 50 percent of an investment for private companies. This ceiling, however, is relaxed for social and high priority projects, including low-income housing, which can be extended credit for up to 90 percent of project costs.

The third policy instrument of the BCEAO is control over interest rates. Both bank deposit and lending rates are regulated and can only be altered with the approval of the Council of Ministers. Two discount rates, which are equivalent to the cost of funds from the BCEAO to the commercial banks, have been established:

- (1) Taux d'escompte preferentiel (TEP); and
- (2) Taux d'escompte normal (TEN)

The TEP rate has been established as an incentive to expand credit to high priority, social development projects. This rate, which is currently set at 6 percent (as of September 1986), can only be used for credit to the public and parastatal sectors, rural credit,

low-income housing and credit for small- and medium-size industries. The TEN rate, which is currently set at 8.5 percent (as of September 1986), is applied to all other sectors and is intended to reflect interest rates in the international capital markets.

Aside from establishing discount rates, the BCEAO also sets lending and deposit rates. Credit for low-income housing in Senegal, for example, must be provided at TEP plus one to three percent in accordance with the terms and conditions found in Table 1.

TABLE 1
Housing Finance - Terms and Conditions in Senegal
(September 1986)

<u>Classification of Housing Unit</u>	<u>Minimum Downpayment</u>	<u>Maximum Term of Loan</u>	<u>Interest Rate</u>
Tres-economique	10%	15 years	TEP + 1%
Economique	10%	15 years	TEP + 2%
Moyen Standing	15%	10 years	TEP + 3%
Standing	20-30%	10-12 years	TEP + 3%
Grand Standing	40%	10 years	TEN + 4%

TEP = 6%
TEN = 8.5%

Source: BCEAO, BHS

Deposit rates are also controlled by the BCEAO and range from 4.25 percent for short-term deposits of less than CFAF 200,000 to an eight percent minimum for deposits of more than CFAF 2,000,000 placed for more than one year.

In sum, the financial environment within member countries of the UMOA imposes the following constraints on low-income housing projects:

(1) The size of a potential HGP loan is constrained by the fact the the majority (65%) of BCEAO's foreign exchange reserves must be held by the French Treasury (usually in French francs). For example, the liquidity position of the BCEAO could be jeopardized if an HGP loan of significant magnitude was in default;

(2) Interest rates are established by the BCEAO and are presently below the cost of borrowing for a US Government guaranteed loan; and

(3) Access to rediscount facilities could increase a bank's liquidity and reduce the cost of borrowing (assuming the rediscount rate is less than the TEP rate), but is in practice not available within some member countries of the UMOA.

B. Risk Management Options

To date, the HGP has made very limited use of risk management techniques for their subprojects. Various ideas, including swaps and collateral accounts have been informally discussed, but a comprehensive review of the viability of these techniques has not been undertaken. This section will review four options, including swaps, collateral accounts, local currency guaranties and a revolving credit facility. These techniques do not represent an exhaustive treatment of the subject, but offer possibilities which can be implemented both within the UMOA member countries as well as other recipient countries.

The discussion which follows assumes that a US lender will require a 100 percent guaranty against commercial risk from A.I.D. for subprojects within the Franc Zone. Although other A.I.D. private sector programs may only cover a portion of the risk, the long-term nature of the project and anticipated yield curve for low-income housing may require a 100 percent guaranty for project implementation. Interviews with commercial banks in West Africa as well as other major financial centers confirm the notion that anything less than a full guaranty would be unacceptable. In the final analysis, however, the extent of the guaranty will be subject to negotiations between the interested parties.

Swaps

Swaps are essentially hedging vehicles which protect parties from interest and exchange rate volatility on forward commitments. These techniques have provided corporate and government borrowers and investors with a capacity to cover foreign exchange risk and to access a number of capital markets, both of which may have previously been unavailable or unattractive to them. Swaps can be short or long-term and involve new or existing liabilities. The transaction can involve a swap of currencies, interest rates, or a swap of both.

Before the evolution of the swap market in the early 1970s, parties interested in reducing their foreign exchange exposure entered into a parallel loan agreement or back-to-back loans. This mechanism involved two parties with access to a currency desired by the other. Eventually, investment banks acting as intermediaries began to develop a business in matching reciprocal financing requirements for their clients. Structuring these transactions as currency swaps rather than parallel loans was soon seen to be preferable because, although the flow of funds is similar, the contractual obligations of each party under a swap arrangement are off balance sheet items; that is, the swap obligations of each party will not appear as a liability on their balance sheets. Problems with the security aspects of parallel loans, coupled with the realization that repayments of such loans could be structured as an exchange of borrowings, have led to the development and widespread use of swaps.

a. Currency Swaps

The term "currency swap" is used for a variety of specialized negotiated currency transactions where two or more entities exchange or swap two currencies for a predetermined length of time and at a predetermined price. A straight currency swap involves the exchange of two currencies and an agreement to re-exchange those currencies after a set period. The initial exchange is made at the current spot rate and the same currency rate is used for the future transaction, regardless of intervening exchange rate changes.

Within the structure of the HGP, the borrower (e.g., a Housing Bank in a UMOA country) is given access to US dollars. The borrower, however, has no need for dollars as project costs will be paid and recovered and income received in CFAF. The potential swap partner for the borrower should therefore have a need for dollars today and a requirement for CFAF at some future date, preferably corresponding to the term of the loan for the borrower.

One potential swap partner for the borrower would be a company which has a revenue stream in dollars and requires local currency for paying in-country expenses. Due to a number of different factors, including the lack of well-developed capital markets in West Africa, the long-term nature of the obligation and the yield structure inherent in a low-income housing scheme, commercial parties are, and will be continue to be, very difficult to locate.

Because of these factors, however, a natural swap partner for a borrower such as the BHS is the BCEAO. The BCEAO, as the Central Bank with responsibility for the formulation of monetary policy and the management of the common pool of foreign exchange reserves, is the ideal swap partner because of its need to increase foreign exchange reserves. The BCEAO, which would incur neither commercial nor foreign exchange risk, would be in a position to earn interest on the dollar reserve account and simultaneously protect its member countries against an unhedged dollar liability.

One issue which has been raised by the BCEAO concerns the long-term nature of a swap obligation and its impact on the current operating account of the BCEAO. In the normal course of an HGP loan (i.e., a host-country government providing a full faith and credit guaranty to A.I.D. and de facto assumption of the foreign exchange risk) the BCEAO would automatically receive dollars which would become part of the current operating account.

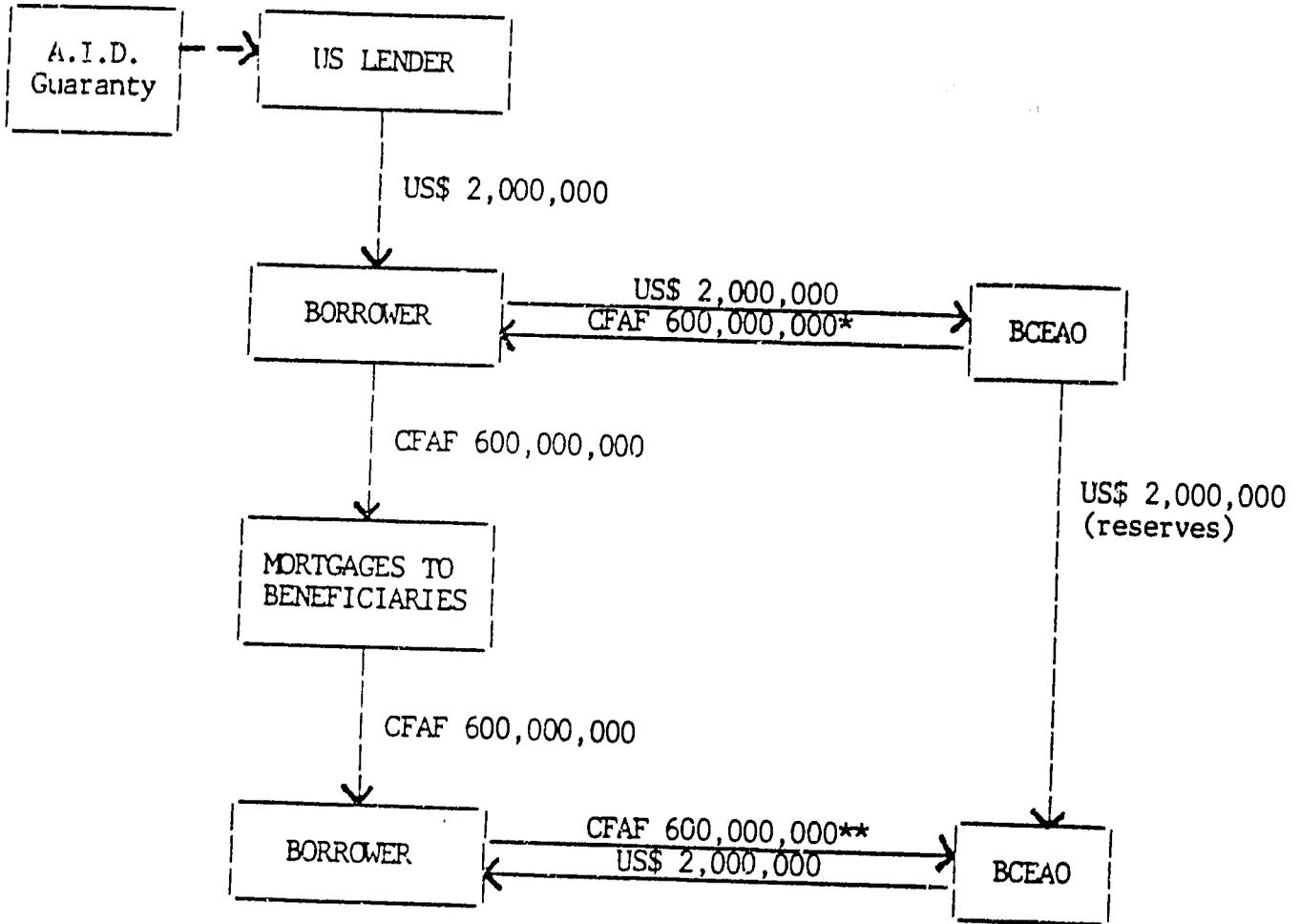
Undoubtedly, the notion of maintaining an off-balance sheet, long-term account in favor of a borrower is a departure from normal operating procedures of the BCEAO, but not without precedent or statutory authority. In 1977, for example, the BCEAO agreed to maintain a specially remunerated time deposit account for the Caisse Autonome d'Amortissement in Cote d'Ivoire. Although the motivation for the transaction was significantly different from present circumstances, the principle of maintaining such an account exists.

With regard to the notion that BCEAO would receive dollars in any event, it may be prudent to examine the trade-off between short and long-term gains. As previously stated, the normal course of business for HGP projects in West Africa assumes that the borrower (i.e. the host government) would take an unhedged position in US dollars. In other words, the government would borrow in dollars, exchange them at a spot rate for CFAF and purchase dollars at the prevailing rate at a future time to meet interest and/or principal repayments. This exposure, which has contributed to delinquencies on repayments, is no longer acceptable to some member countries of the Central Bank. In the event a risk management technique such a swap arrangement does not come to fruition, it is conceivable that dollars will not be deposited as short-term reserves with the Central Bank. A swap arrangement would therefore generate incremental foreign exchange and eliminate the long-term foreign exchange exposure previously assumed by the host government.

The Transaction

A currency swap arrangement with the BCEAO would involve a US eligible investor lending US dollars to a host country borrower (Table 2). The borrower would then exchange the dollars at a spot exchange rate with BCEAO, leaving the borrower with CFAF to on-lend to eligible

TABLE 2
CURRENCY SWAP



* For illustrative purposes, assumes initial currency swap transacted at US \$1 = CFAF 300.

** Timing of the currency swap of CFAF for US dollars will correspond to US dollar loan amortization schedule.

individuals for long-term mortgages. The BCEAO would now have dollars which could be invested in an interest-bearing, long-term, dollar-denominated financial instrument such as Treasury Bonds. At the time payments are due to the US investor, the borrower swaps CFAF for dollars with BCEAO.

The transaction is essentially a long-term forward exchange contract with BCEAO that provides for a series of exchanges of dollars and CFAF on dates coinciding with the debt service obligations of the borrower in US dollars. The swap contract obligates the borrower to supply CFAF to the BCEAO, and the BCEAO is obliged to supply a periodic dollar flow to the borrower.

Interest Rates

The estimated interest rates for each party based on current market conditions are shown in Table 3. Under this currency swap arrangement, the BCEAO would earn the equivalent of the yield on 20-year US Treasury Bonds, which is equivalent to 7.60 percent. The borrower, on the other hand, would incur a cost of borrowing of 9.25 percent (plus a one percent loan origination fee which is deducted from loan proceeds), which must be repaid in US dollars and hence is subject to foreign exchange fluctuations.

TABLE 3
Interest Rates for Currency Swap

	Borrower	BCEAO
* <u>US Dollar Rate</u> ¹	(8.75%)	
* <u>Interest on Dollar Deposit</u> ²		7.60%
* <u>A.I.D. Guaranty Fee</u>	(.50%)	
* <u>TOTAL</u> ³	(9.25%) fixed	7.60% fixed
	(dollars)	(dollars)

¹ US dollar rate assumed at the Prime Lending Rate of 7.75% as of April 9, 1987 plus 1%.

² Interest on dollar deposits assumes investment in US Treasury Bonds with a maturity date of 2007 with a yield of 7.60% as of April 9, 1987.

³ Parentheses indicate an outflow of funds as opposed to interest income.

Exposure

In the event the BCEAO and the borrower enter into a currency swap transaction only, the foreign exchange risk for all parties would be negated for the principal repayment of the dollar loan. The borrower, however, would still incur a foreign exchange risk for the interest repayments which, assuming adequate liquidity, could be hedged on a short-term basis, if appropriate. Table 4 outlines the exposure on currency swaps for each party involved.

TABLE 4
Exposure on Currency Swap

	Commercial Risk	Exchange Risk
*Borrower	As normally assumed for sub-loans	Exposure on interest payments
*BCEAO	None	None
*US Lender	None	None
*A.I.D.	Assumed if default by borrower	None

Under no circumstances will BCEAO assume either a commercial or foreign exchange risk. In the event of default by the borrower, the BCEAO is in a position to maintain the dollar account and the US lender would have recourse to the A.I.D. guaranty.

b. Interest Rate Swaps

An interest rate swap is a transaction in which two unrelated parties swap interest obligations so that each party obtains funds priced in the way it wishes. There are three basic types of interest rate, or coupon swaps including:

1. Same Currency : Fixed-to-Floating Rate Swap;
2. Cross Currency: Fixed-to-Fixed Rate Swap; and
3. Cross Currency: Fixed-to-Floating Rate Swap.

The first type of transaction, which is the most popular, involves swapping a fixed interest rate for a floating rate of a loan denominated in the same currency. The second type of swap (which is the case in point) involves transactions in two different currencies, both with fixed interest rates. The third, and slightly more complex transaction, converts fixed rate financing to floating rate (or vice versa) in more than one currency.

The Transaction

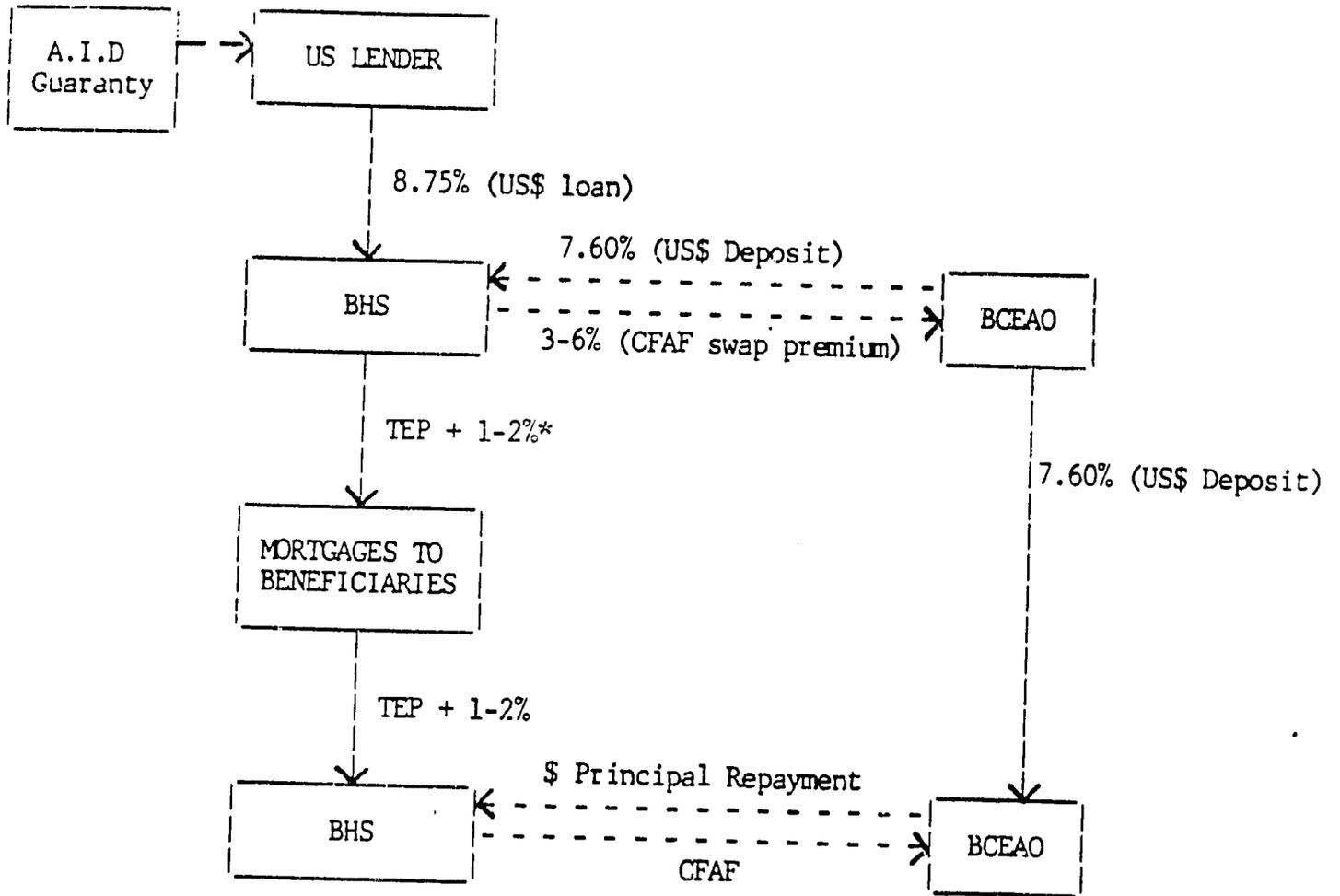
This transaction would first involve the borrower entering into a currency swap with the BCEAO as explained in the preceding section. An eligible US investor would lend US dollars to the borrower and the borrower would exchange the dollars for CFAF to on-lend for mortgages. In accordance with the amortization schedule for the US dollar loan, the borrower would then swap the CFAF for dollars at the rate of the initial exchange.

The need for an interest rate swap, which would constitute a cross currency, fixed-to-fixed rate transaction, stems from the foreign exchange exposure which the borrower would have on interest repayments under a straight currency swap. In order to mitigate this risk, the borrower could assume the interest rate repayments and income on the dollar liability and the BCEAO could receive a premium on the CFAF (Table 5). The interest rate swap would decrease the borrower's exposure while, at the same time, maintaining a profit margin for the BCEAO.

Interest Rates

Under a currency and interest rate swap arrangement, the borrower would incur a liability on the difference between the US dollar lending rate and interest earned on the dollar deposit. The borrower would also incur a CFAF liability to the BCEAO at a rate which will depend on the pricing arrangements of the swap. Similar to other transactions of this nature, this CFAF premium, or price of the swap, is subject to negotiations. In general, the price will reflect interest rate differentials, not exchange rate differentials, between the two currencies. Swap pricing can be calculated in a number of different ways, including methods based on the current yield curve or discounted cashflows. All methods, however, account for the fact that pricing in short-term markets, which is based on arbitrage between the Eurocurrency and foreign exchange markets, is not suitable for long-term markets. Interest rate differentials, therefore, have become the underlying basis for swap pricing techniques. For illustrative purposes, the interest rate differential has been assumed in the range of three to six percent as shown in Table 6. Under this arrangement, the borrower would incur a positive spread on its mortgage lending and the BCEAO would earn a positive rate of return on its CFAF.

TABLE 5
INTEREST RATE SWAP



* TEP is the taux d'escompte preferential, which is presently equal to six percent.

TABLE 6
Interest Rate for Currency and Interest Rate Swap

	Borrower	BCEAO
*US Dollar Rate ¹	(8.75%)	
*Interest on Dollar Deposit ²	7.60%	
*CFAF Swap Premium ³	(3-6)%	3-6%
*A.I.D. Guaranty Fee	(.50%)	
*TOTAL ⁴	(4.65-7.65)% ⁵	
*3-6%	Fixed (CFAF and US\$)	Fixed (CFAF)

¹US dollar rate assumed at Prime Lending Rate of 7.75% as of April 9, 1987, plus 1%.

²Interest on dollar deposit assumes investment in US Treasury Bonds with a maturity date of 2007 with a yield of 7.60% as of April 9, 1987.

³CFAF swap premium is, similar to pricing agreements of all swap arrangements, negotiable. The range of 3-6% is presented for illustrative purposes only.

⁴Of the total interest payable, 1.6% $([8.75-7.60] + .50)$ represents a dollar liability.

⁵Parentheses indicate an outflow of funds as opposed to interest income.

Exposure

Similar to the straight currency swap, the BCEAO and the US lender would incur no commercial or foreign exchange risk (Table 7). ~~The foreign exchange risk for the borrower, however, would be reduced considerably (from 9.25 percent under a straight currency swap to 1.65 percent).~~ This, in turn, would further reduce the commercial risk for A.I.D.

TABLE 7
Exposure on Currency and Interest Rate Swap

	Commercial Risk	Exchange Risk
*Borrower	As normally assumed for sub-loans	Possible small exposure on interest payments
*BCEAO	None	None
*US Lender	None	None
*A.I.D.	Assumed if default by borrower	None

Analysis

A straight currency swap agreement between the BCEAO and the borrower would mitigate the foreign exchange risk on principal repayments, but would carry an exchange exposure on interest repayments for the borrower. The approximate cost of borrowing would be 9.75 percent, plus a one-percent origination fee. This rate would produce a slightly negative spread on commercial terms, depending upon the type of housing constructed.

For the BCEAO, a straight currency swap would yield substantial benefits, including an increase in dollar reserves and interest income associated with a long-term deposit. At no time would the BCEAO incur either a commercial or foreign exchange risk, since dollars have never been exchanged for CFAF. As stated previously, in the event of a complete default by the borrower, the BCEAO is in a position to maintain the dollar reserves.

From the perspective of reducing the negative spread which would occur if the borrower obtains funds at a higher rate than it can on-lend, a currency and interest rate swap would be preferable. Under this scenario, the borrower would mitigate its foreign exchange exposure on the interest repayments and reduce its cost of borrowing to a financially viable level.

There are no disadvantages envisioned for the BCEAO in either the

currency or currency and interest rate swap. If however, the swap were to involve substantial sums of money (i.e., a significant portion of UMOA's current money supply), a case could be argued that the creation of additional CFAF against dollar reserves could have an inflationary effect. However, due to the fact that CFAF have been issued against counterpart funds and the relatively small amount of funds involved in the transaction, it is not anticipated that this transaction could increase inflation.

2. Collateral Account

The technique of collateral accounts for minimizing foreign exchange risk is not new to A.I.D. This loan structure was developed by the A.I.D.'s Office of Investment in 1984 and employed in a number of different projects using the Private Sector Revolving Fund facility. The loan structure generally calls for a "Three-Party Agreement", between A.I.D., a US-based bank and a borrower to establish a collateral account in the borrower's name in US dollars which would be managed by the depository bank. Upon the request of the borrower, A.I.D. would disburse the loan proceeds in US dollars in an investment such as US Treasury obligations. The depository bank would then issue or confirm letters of credit guarantying an extension of local currency credit. The borrower's interest obligation to A.I.D. under the loan agreement is measured in relation to the rate of earnings on the investments in the collateral account, plus a utilization fee (measured as a percentage of the amount of funds in the collateral account that have been blocked) and a fee for issuing letters of credit.

Although the HGP does not provide a mechanism for direct lending, the collateral account concept, with modifications, could be adopted to meet the needs of these programs. The required modification is an assurance that the value of the guaranty is not less than the outstanding balance of the local currency loan. As stated previously, US lenders have demonstrated a reluctance to loan funds under this program if there is an unprotected exposure on the local currency loan. This situation could arise in the Franc Zone because the risk of the French franc appreciating against the dollar is real, thereby diminishing the value of the A.I.D. guaranty.

A second, although less important consideration is the expense of issuing letters of credit to the borrower. The fees associated with these transactions would increase the effective cost of the loan for the borrower. These considerations have led to the development of a modified collateral account technique whereby the value of the local currency loan would fluctuate with any significant movements in the exchange rate and eliminate the need for issuing letters of credit.

The Transaction

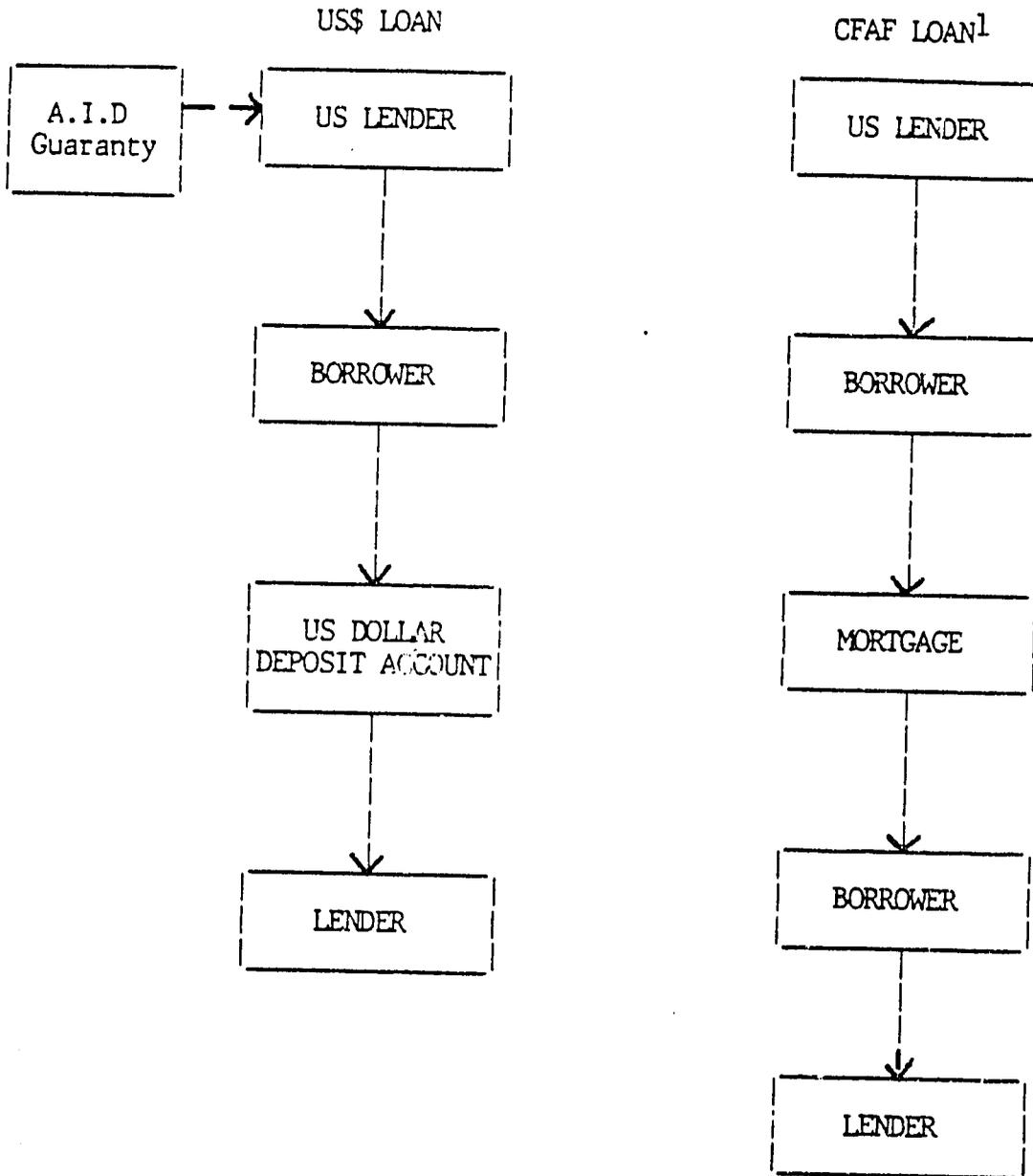
The collateral account transaction involves two separate loan accounts: one in US dollars and one in local currency. The US dollar loan would be deposited in a cash collateral account in the United States and invested in a long-term, dollar-denominated obligation such as Treasury Bonds. Against the collateral account, the lender would then make available a local currency loan to the borrower for an amount equivalent to the US dollar loan at the spot exchange rate. As illustrated in Table 8, the borrower will be carrying two loans on its balance sheet. As the dollar loan becomes due, payments will be sourced from the dollar deposit account (i.e., the dollar loan and the dollar deposit will have matching maturities.)

In the event that the CFAF appreciates against the dollar, the borrower would be required to reduce the local currency loan to maintain the value of the guaranty on the dollar deposit account for the lender. Conversely, if the CFAF depreciates, additional local currency can be made available to the borrower.

Interest Rates

As illustrated in Table 9, the borrower could incur an interest liability on both the dollar loan as well as the local currency loan. Pricing of the CFAF loan will, of course, depend upon negotiations and the prevailing interest rate set by the BCEAO. Based upon informal discussions with potential lenders in Senegal, however, we have assumed a 12 percent variable interest rate in CFAF. The interest rate for the borrower under these conditions will be 13.65 percent, plus a one percent loan origination fee on the dollar loan which is deducted from the proceeds. Approximately 1.65 percent represents a fixed US dollar liability.

TABLE 8
COLLATERAL ACCOUNT



1 - Loan initiates at spot rate, say US\$1 = CFAF 300. If dollar rises to US\$1 = CFAF 400, then borrower can draw down additional CFAF funds. Conversely, if dollar declines, then borrower is obliged to prepay local currency loan so that the dollar guaranty maintains its value vis-a-vis the CFAF loan.

TABLE 9
Interest Rates for Collateral Account

	US\$ Loan	CFAF Loan
*US Dollar Rate ¹	(8.75%)	
*Interest on Dollar Deposit ²	7.60%	
*CFAF Rate ³		(12%)
*A.I.D. Guaranty Fee	(.50%)	
*TOTAL ⁴	(1.65%)	(12%)
	Fixed	Variable

¹ US dollar rate assumed at Prime Lending Rate of 7.75% as of April 9, 1987, plus 1%.

² Interest on dollar deposit assumes investment in US Treasury Bonds with a maturity date of 2007 with a yield of 7.60% as of April 9, 1987.

³ CFAF rate is illustrative of long-term interest rates (Taux d'escompte normal [TEN] plus a spread) as indicated by a US bank with a branch office in Senegal.

⁴ Parentheses indicate an outflow of funds as opposed to interest income.

Exposure

For this type of collateral account transaction, the borrower would not incur a foreign exchange risk as the US dollars are never exchanged for local currency (Table 10). In the case of a sharp appreciation of the CFAF, there is an increased commercial risk associated with the required prepayment of the local currency loan.

7

TABLE 10
Exposure on Collateral Account

	Commercial Risk	Exchange Risk
*Borrower	Increases as CFAF appreciates	Possible small exposure on US\$ interest payments
*US Lender	None	None
*A.I.D.	Assumed if default by borrower	None

Analysis

The collateral account technique offers the borrower an opportunity to tap both the international and local capital markets within the existing financial environment in the UMOA. The transaction mitigates the foreign exchange risk and eliminates the commercial risk for the lender. The transaction also requires the borrower to maintain a liquid position over the long term in order to offset any significant depreciation of the dollar vis-a-vis the CFAF. It should be noted that the borrower's balance sheet would be inflated to reflect the two loans.

The estimated interest rate shown in Table 9 is above current permissible lending rates for low-income housing, which could result in a negative spread for the borrower if a rediscount facility or other financial contributions to the project are not available. The variable interest rate could also increase the commercial risk if increases in the floating rate cannot be passed on to the beneficiaries. Alternatively, the borrower could enter into a floating-to-fixed interest rate swap with another party, if available.

3. Local Currency Guaranty

A local currency guaranty is a simplified variation of the collateral account. The key difference between the two techniques is

a local currency guaranty by A.I.D. would eliminate the need for a US dollar loan. The benefits of this approach for the borrower would be a reduced interest rate and the elimination of one loan on the borrower's balance sheet.

The Transaction

An eligible US lender with operations in the host country would issue a local currency loan to the borrower. Against this loan, the US lender would receive an A.I.D. guaranty for the equivalent of the CFAF loan in dollars. Similar to the collateral account, the borrower will be required to prepay a portion of the local currency loan if the dollar depreciates significantly against the CFAF. Conversely, if the dollar appreciates, the borrower can draw down additional funds up to the value of the A.I.D. dollar guaranty. The adjustments can be carried out on a monthly or quarterly basis, depending upon the terms and conditions established between the lender and the borrower.

Interest Rates

A local currency guaranty would reduce the cost of borrowing by the differential between the dollar loan rate and the dollar deposit rate, which, at current market conditions, is 1.15 percent. The interest rate under this scenario is estimated at 12.5 percent (variable) as shown in Table 11.

TABLE 11
Interest Rate for Local Currency Guaranty

* _____	CFAF Loan
* *CFAF Rate ¹	12.0%
* _____	
* *A.I.D. Guaranty Fee	.50%
* _____	
* TOTAL	12.5%
* _____	variable

¹The CFAF rate is illustrative of long-term interest rates (Taux d'escompte preferentiel [TEP] plus a spread) as indicated by a US bank with a branch office in Senegal.

Exposure

The exposure for A.I.D. and the US lender is essentially the same as under the collateral account (Table 12). For the borrower, however, the exchange risk has been mitigated as a result of eliminating the need for a US dollar loan.

TABLE 12
Exposure on Local Currency Guaranty

	Commercial Risk	Exchange Risk
*Borrower	Increases as CFAF appreciates	None
*US Lender	None	None
*A.I.D.	Assumed if default by borrower	None

Analysis

This technique is a simplified, less costly version of the collateral account. Rather than making a US dollar loan in parallel with a local currency loan, A.I.D. would simply guarantee the equivalent amount in local currency. Although this represents a departure from PRE/H's standard operating procedure, the mechanics of the transaction in terms of the dollar guaranty would remain unchanged. It is envisioned that the lender would undertake the monitoring of the CFAF exposure vis-a-vis the dollar guaranty, with some additional project supervision required by A.I.D.

4. Revolving Credit Usage

The technique of a revolving credit facility was developed to accommodate a scenario where the foreign exchange risk must be borne by the project. Rather than lending HGP resources directly for mortgages, use of a revolving credit technique would involve construction loans to developers for approximately 12 to 18 months. The objective of this technique is to reduce the period of foreign exchange exposure from a 30-year term to a manageable time frame - e.g., 12 to 18 months.

The Transaction

The borrower would receive dollars from an eligible US lender at the best available rate for a US Government guaranteed loan. The loan proceeds would then be on-lent to a developer to finance construction of a low-income housing project approved by A.I.D. After the construction period is complete and the housing units sold, the developer would repay the construction loan in CFAF at the prevailing rate to the borrower. The source of funds for the repayment to the borrower will include the beneficiary's downpayment and mortgages extended by the borrower and/or other financial institutions. Note, however, that there is a foreign exchange risk during the term of the loan to the developer. This risk can be managed through the following:

- (1) The prices for housing units can be adjusted to reflect any CFAF depreciation up to an amount which can be absorbed by the purchaser. If required, the purchaser's absorptive capacity could be increased by employing flexible mortgage terms, such as extending the term of the loan from 10-15 years to 15-20 years; and
- (2) The borrower can hedge (e.g., through options, forward contracts, etc.) the US dollar - French franc risk in normal currency markets, to the extent that the adjustment would exceed the purchaser's absorptive capacity.

Due to the absence of commercial hedging for the CFAF-French franc exposure, the borrower would have to evaluate and assume this risk.

After the successful completion of the first loan to the developer, the borrower is in a position to reinvest the HGP resources. The options available for reinvestment, which must be evaluated in light of current market conditions, include:

- (1) Similar reinvestment in a low-cost housing construction/sales program;
- (2) Temporary "parking" of funds in US dollar securities, pending re-alignment of currency risk;
- (3) Early repayment of the US dollar loan if the currency risk is too great and "parking" of funds is not a valid option;
- (4) Or possibly, reinvestment in a higher cost housing program where the purchaser is more able to absorb the increased exchange cost.

The borrower's ability to reinvest the HGP resources in a housing construction/sales program will be dependent upon the growth of its local currency resources in order to "take-out" the construction loans with long-term mortgages. In other words, the borrower would have to

increase its local currency resources through deposits or other means in order to continue to leverage its HGP resources.

Interest Rates

The borrower's interest rate would be the best available US dollar rate for a US Government guaranteed loan plus the A.I.D. guaranty fee, together estimated at 9.25 percent (Table 13). The loan origination fee would also apply, which is deducted from the loan proceeds. The interest rate to the developer and beneficiaries could be floating to accommodate exchange fluctuations.

TABLE 13
Interest Rate for Revolving Credit Usage

*		
*US Dollar Rate ¹		8.75%

*A.I.D. Guaranty Fee		.50%

*TOTAL		9.25%

¹US dollar rate assumed at Prime Lending Rate of 7.75% plus 1%, as of April 9, 1987.

Exposure

The commercial risk associated with the revolving credit usage technique is increased due to the fact that the scheme is predicated upon continued growth of the borrower's local currency resources (Table 14). The foreign exchange risk, while manageable, is present during the term of each construction loan.

TABLE 14
Exposure on Revolving Credit Usage

	Commercial Risk	Exchange Risk
*Borrower	Increases as CFAF depreciates and requires addtl. growth in local currency resources	12-18 month exposure which must be managed
*US Lender	None	None
*A.I.D.	Assumed if default by borrower	None

Analysis

The revolving credit facility does not mitigate the foreign exchange exposure, but transfers the risk to the borrower and beneficiaries. This type of transaction will require the borrower to aggressively manage the currency exposure and assume the commercial risk of internally generating local currency resources over the long term. The advantages of this type of transaction include (1) the ability to leverage HGP resources through continued application of the funds for housing projects; and (2) the possibility of cross-subsidization of low-income housing projects with higher-yielding investments.

III. BANQUE DE L'HABITAT DU SENEGAL (BHS) PROJECT ANALYSIS

A. Overview

The BHS is the first semi-private mortgage bank in Senegal. Established in 1980, the bank's primary functions are to provide (1) "social loans" to build or acquire housing units for low-income groups; (2) commercial loans to finance middle-income housing; and (3) provide 1-2 year loans to developers for housing construction. The Government of Senegal (GOS) and the BCEAO are the largest shareholders but not majority shareholders in BHS, each holding 9 percent of total equity. Other shareholders include the International Finance Corporation (8.6 percent), private sector commercial banks, insurance companies, industrial and commercial groups and individuals (51.4 percent) and other public sector agencies (22 percent).

More than 80 percent of the BHS' mortgage loan portfolio is invested in housing units for lower-income families. Most of these housing units are located in or near the capital city of Dakar where unsatisfied housing demand continues to exceed supply. As is the situation throughout the country, the principal market constraint is not demand for housing, but the ability of potential mortgagees to service loans.

The BHS is planning to diversify its portfolio and enter into a new segment of the housing market and has identified and analyzed a low-income housing project for which the bank is currently seeking finance. The purpose of the project is to enter into the lower-income share of the market in an area of the country where BHS has had little experience. The project will be located in Ziguinchor, the regional capital of the Casamance Region in the southern part of the country. This interior city of 170,000 is experiencing an annual growth rate of 5 percent, which has increased its population by 50 percent over the last decade. An estimated two-thirds of Ziguinchor's inhabitants live in unplanned squatter settlements. The project, which will be located on a 80-hectare site, will finance "economique" and "tres-economique" housing as well as sites and services. The total project cost estimated by BHS is US\$5.67 million, financed by a US\$3 million GOS grant and \$0.67 million from deposits. Approximately US\$2 million remains to be financed, which BHS has requested from PRE/H resources.

B. Financial and Institutional Analysis

The BHS is the sixth largest bank in Senegal with total assets of CFAF 21.1 billion and net worth estimated at CFAF 2.4 billion at the end of fiscal year 1986. Since its inception, the BHS has been a profitable institution despite the reduction in personal disposable income in Senegal caused by the decline in prices for traditional exports and an increasing public sector deficit. The following is an overview and analysis of the bank's financial position, which is

extracted from material provided by BHS. No audit opinion has been provided to us and details of its accounting practices have also not been disclosed.

1. Profitability: For the sixth consecutive year, EHS has operated profitably, earning CFAF 313.3 million in 1986 net of income tax estimated at CFAF 158 million. This compares favorably with a net income of 184.4 million in 1985 and results in part from an increase in interest earned on loans to individuals. The 1986 increase in net income could also be attributable to the decrease in the bad-debt provision taken in 1986 if the provision was previously written off to the income statement. Profitability was adversely affected in 1985 due to a write-down of assets and an increase in operating expenses resulting from computerization of operations. As illustrated in Table 15, reported profitability improved in 1986 and BHS's net income represents an annualized 13 percent pre-tax return on net worth for the year.

Table 15

BHS - Financial Data for Selected Years
(CFAF billions)

<u>Assets</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>
Loans	11.8	13.0	14.9
Liquidity placements - cash	2.7	4.6	5.2
Other Assets	<u>0.6</u>	<u>0.6</u>	<u>0.9</u>
Total Assets	15.1 =====	18.2 =====	21.0 =====
<u>Liabilities</u>			
Deposits	6.7	8.1	9.9
Other Liabilities	<u>0.9</u>	<u>1.0</u>	<u>1.2</u>
	7.6	9.1	11.1
Medium-term Loans	1.7	1.1	.6
Government Housing Grant	3.6	5.7	6.7
Bad-Debt Provision	.3	.3	.2
Net Worth	<u>1.9</u>	<u>2.0</u>	<u>2.4</u>
Total Liabilities and Shareholders' Equity	15.1 =====	18.2 =====	21.0 =====
Income before Tax	.32	.28	.47
Provision for Tax	--	.09	.16
Net Income	<u>.32</u>	<u>.19</u>	<u>.31</u>

Source: BHS Annual Reports

2. Funding: BHS' main sources of funds include term deposit accounts, savings accounts and a government housing grant (Table 16). The latter is used to finance the social loans for "economique" and "tres-economique" housing. These subsidized funds are sourced from a line item in the GOS' budget each year referred to as the Fonds pour l'Amelioration de l'Habitat et de l'Urbanisme (FAHU). (When BHS was established in 1980, the FAHU funds were generated through a type of corporate tax which has since been abolished.) The funds are provided at no cost to BHS, but appear as a long-term liability on the bank's balance sheet. Without examining the accounting principles underlying BHS' financial statements, speculation would imply that these funds appear as a long-term liability because of the performance requirements imposed by the government. Although the FAHU contribution varies each year (Table 16), depending upon the status of the GOS' budget, the contributions are substantial. As of 1986, the FAHU funds represented 32 percent of BHS' total sources of funds. Deposits, however, represent the largest single source of funds and have increased by more than 17 percent per year for the last three years. In general, BHS has not been successful in diversifying its sources of funds. Access to funds through bond issues and the Central Bank discount facility has not been available, primarily due to the external financial environment, rather than BHS' financial position. BHS' medium-term loan obligations have also been decreasing significantly in the past three years.

Table 16

BHS - Funding Sources
(CFAF Billions)

	<u>1984</u>	<u>1985</u>	<u>1986</u>
Net Worth	1.9	2.0	2.4
Government Housing Grant	3.6	5.6	6.7
Savings Deposits	6.7	8.1	9.9
Bond Issues	<u>1.1</u>	<u>1.1</u>	<u>1.1</u>
TOTAL	13.3	16.8	20.1
	====	====	====

Source: BHS Annual Reports

3. Loan Volume and Analysis. During 1986, BHS financed 806 housing projects compared with 1,006 in 1985 and 1,531 in 1984. The total value of mortgage loans outstanding as of September 1986 was CFAF 11.6 billion, compared with CFAF 10.9 billion in the previous year. The decrease in lending is attributable to a significant decline in the number of short-term loans to promoters. This has caused a decrease in the number of housing units available for occupancy which BHS would have normally provided mortgage financing. Based upon discussions with BHS staff and its shareholders, it appears that approximately 30 percent of total mortgage loans were in arrears of 90 days or more as of March 1986. It was reported that the majority of these arrears are for administrative reasons associated with difficulties in obtaining clearances for a direct payment system. During the past 18 months, BHS has been trying to institute a system whereby the monthly loan payments are deducted by the employer. This collection system has been subject to legal review and has not been approved to date. The management of BHS believes that the arrears are caused by the poor collection system under which they now operate, rather than "true delinquencies". Accordingly, BHS reduced its bad debt provision to 1.6 percent of the total loan portfolio in 1986 from 2.4 percent in 1985.

4. Management: Discussions with shareholders of BHS reveal that the senior level management is regarded as being highly competent and, through increased training, middle-level management has improved significantly during the past three years.

C. Prospects for the Future

BHS' activities and financial performance during the past five years should be considered more than adequate given the downturn in the Senegalese economy which has caused a reduction in disposable personal income. Although the bank has grown less rapidly than originally projected, it has successfully mobilized savings and has fulfilled its mandate of providing low-income housing.

Aside from the general economic climate in Senegal, the major factors which could affect BHS' performance in the future will be the ability to diversify its sources of funds and improve its funding structure so that the cost of funds and the rates and maturities of its outstanding loans are matched with its sources. Due to the present financial environment and the GOS' budget deficit, BHS has not been able to access the rediscount facility of the BCEAO and direct financial support through the FAHU funds has been lower than projected. As a result, the bank has had to rely upon its deposit base which cannot be considered, in its entirety, as a reliable, long-term source of funds. Similarly, access to long-term funds on the local capital market may continue to be limited for the foreseeable future as a result of the Paris Club reschedulings and the credit ceilings imposed.

The continuation of the GOS subsidy through FAHU inflows is also an uncertainty. Although the commitment to develop low-cost housing is undoubtedly present, the GOS' ability to continue supporting BHS at the level matching those of the past five years is by no means certain. Without this contribution and/or access to long-term finance, activity at the bank could stagnate. Furthermore, new sources of funds may have to be obtained on concessionary terms unless the interest rate structure imposed jointly by the BCEAO and the NCC is altered to reflect market rates.

D. Conclusions and Recommendations

Given BHS' current financing structure, HGP resources would provide the bank with an opportunity to begin diversifying its sources of funds through borrowings on the international capital markets. Use of these resources would not only begin to address the imbalances of the bank's balance sheet, but provide BHS an opportunity to enter a new segment of the housing market outside the capital city. These objectives are fully consistent with those of A.I.D. which include (1) moving into lower-income housing markets not previously served by private builders and banks; (2) providing housing which was previously carried out by the public sector, through the private sector; and (3) strengthening private sector institutions devoted to housing finance.

The risk of using HGP resources for BHS is the cost of borrowing. In today's financial markets, the cost of borrowing long-term for an institution such as BHS exceeds the interest rate ceiling imposed by BCEAO and NCC for low-income housing. For the project to generate a positive rate of return, BHS will have to either (1) cross-subsidize the loan funds with FAHU grant funds; and/or (2) enter into a currency and interest rate swap with the BCEAO.

The consultants conclude that HGP resources meet BHS' and A.I.D.'s objectives and that the use of effective risk management techniques must be employed to avoid jeopardizing the long-term financial viability of the bank. Accordingly, it is recommended that BHS pursue the following course of action:

(1) An interest and currency rate swap is the best possible solution. This would completely eliminate any exchange risk and reduce the cost of borrowing such that BHS can realize a positive spread on its mortgage loans. This technique could also represent a continuing source of long-term funds for the bank which would reduce and possibly eliminate the need for subsidized funds from the GOS;

(2) Recognizing that a swap transaction with the Central Bank may not be possible to complete in a timely manner, BHS could still avoid the foreign exchange risk by utilizing the collateral account or

local currency guaranty technique. Both of these options would require a US lender with operations in Senegal and it is recommended that further discussions regarding interest rates be held; and

(3) As a last solution, the revolving currency usage technique could be employed. Under this alternative, BHS will incur a substantial commercial and foreign exchange risk which could jeopardize the financial position of the bank. This technique requires active exchange risk management which the bank has not had any related experience. Given the current economic climate in Senegal, the possibility of increasing the bank's long-term resources through deposits to take-out construction loans with long-term mortgages could represent an unnecessarily high risk.

IV. CONCLUSIONS AND RECOMMENDATIONS FOR RISK MANAGEMENT TECHNIQUES IN THE FRANC ZONE

To date, HGP resources have been used by UMOA member countries only through public sector channels. The host government has acted as the borrower and assumed a long-term, dollar-denominated obligation without directly employing any risk management techniques. As a priority sector, low-income housing has also been directly subsidized by the government because current mortgage rates established by the BCEAO and the NCCs are lower than the effective cost of borrowing in the international capital markets.

Adapting the risk management techniques available in today's marketplace, PRE/H is in a position to improve the financial viability of low-income projects within the region and enhance the role of the private sector in delivering this product. The risk management techniques developed in this report can be applied to HGP projects regardless of whether or not a sovereign guaranty is provided by the host country.

The consultants' conclusions and recommendations to implement these tools using HGP resources are the following:

1. The best possible solution is a currency and interest rate swap with the BCEAO. This technique would eliminate any exchange risk for all parties concerned and allow the BCEAO to earn a profit on the incremental dollar reserves. This swap arrangement would also reduce the need for a GOS subsidy by reducing the cost of funds for the borrower to a level which is less than the current mandated mortgage rate. Implementation of this proposition will rest upon a favorable determination by the decision-making body of the BCEAO. Since the BCEAO has had limited experience with this type of transaction, it is envisioned that additional assistance in program development may be required.

2. Recognizing that a swap transaction with the BCEAO may not be possible to complete in a timely manner, it is recommended that PRE/H proceed along a parallel track with a local currency guaranty. This technique, which is a refinement to the collateral account concept, would mitigate the foreign exchange risk for the borrower, but is expensive (actually deficitary) for the borrower. Implementation of the local currency guaranty may require minor operational changes in the HGP, but will not require any legislative changes in the program.

3. As a last solution, we have developed a revolving credit usage technique which assumes the foreign exchange risk to be borne by the project and its participants. This technique would (1) reduce the time frame involved in the currency risk to successive tranches of 12

to 18 months each; (2) transfer a manageable portion of the exchange adjustment to the ultimate project beneficiaries; and (3) permit normal hedging operations in the international currency markets to mitigate the borrower's overall currency risk.

The BHS project represents an opportunity to implement these techniques and can serve as a pilot project for the PSP. Based upon available information, the consultants find that the financial performance of the BHS is adequate. A thorough review of BHS' audited financial statements, however, should be undertaken. The consultant's also find that HGP resources would contribute to the long-term institutional development of the organization if risk management techniques are employed.

It is recommended that this project be presented as a pilot project for a swap transaction with the BCEAO. Although the project amount is relatively small (US\$2 million), it is further recommended that technical assistance to promote and implement the project be provided in order that other institutions in the region could avail themselves of this facility. Recognizing BHS' desire to implement the project in Ziguinchor in the immediate future, the local currency guaranty option through a US lender with operations in Senegal should be pursued along a parallel track.

ANNEX I

LIST OF PERSONS AND ORGANIZATIONS VISITED

PARIS

Philippe Bonte	Banque Internationale pour l'Afrique Occidentale
Patrick Bonte	Banque Paribas
Michel Bousquet	Bernard Montagne
Rene Lafon	Banque Internationale pour l'Afrique Occidentale
Patrick Lefebure	Banque Paribas
T. Gregory Murphy	Princeton Design Projections and Consulting International

ABIDJAN, COTE D'IVOIRE

Vincent Farley	U.S. Embassy
Jean-Baptiste Gomis	Caisse Autonome d'Amortissement
Mr. Tiemoko Kone	Banque Centrale de l'Afrique d'Ouest
Mr. Victor Kouame	Caisse Autonome d'Amortissement
Mr. Moreau	Ministry of Finance
Mr. Trevoux	Ministry of Finance

DAKAR, SENEGAL

George Carner	U.S.A.I.D., Dakar
Alioune Diack	Banque de l'Habitat du Senegal
Faton Diagne	Ministere de l'Economie et des Finances
Ousmane Diene	Ministere de l'Economie et des Finances
Bernard Dignet	Ministere de l'Economie et des Finance

Edward A. Dragon	U.S.A.I.D., Dakar
El-Hadji Koymil Fall	Ministere de l'Economie et des Finances
Richard Greene	U.S.A.I.D., Dakar
Amadou Lamine Lom	Treasury
Harold Lubell	U.S.A.I.D., Dakar
Abdoul MBaye	Banque de l'Habitat du Senegal
Mamadou Mbengue	Banque de l'Habitat du Senegal
Babacar Ndoye	Banque Internationale pour le Commerce et l'Industrie du Senegal
Ousmane Omedraogo	Banque Centrale des Etats de l' Afrique de l'Ouest
Galaye Seck	Banque Internationale pour le Commerce et l'Industrie du Senegal
Ibrahim Shaheen	Banque Senegalo-Koweitienne
Djibril Sakho	Banque Centrale des Etats de l'Afrique de l'Ouest
Mr. Sidibe	Banque Centrale des Etats de l'Afrique de l'Ouest
Ms. S. Stewart	Citibank
<u>WASHINGTON</u>	
Mr. Calamitsis	International Monetary Fund
Ms. M. Lundsager	International Monetary Fund
Mr. Ugolini	International Monetary Fund
Mr. R. Vanderbijl	International Finance Corp.