# The Applicability of Secondary Mortgage Markets to Developing Countries

by Michael J Lea[1]

***INTRODUCTION***

As countries develop, housing demand, particularly for owner-occupied units, increases. The resultant demand for mortgage credit often outstrips the supply reflecting rigidities in and lack of development of domestic financial systems. A solution that is frequently proposed for developing countries is the introduction of a secondary mortgage market. The rationale for this proposal is that a secondary market can tap broader sources of funds than domestic banking institutions and can facilitate improved risk management for primary market lenders.

Proposals for secondary mortgage markets frequently focus on mortgage securitization. However, mortgage securities, which involve a sale of mortgage loans and a transfer of risk are only one form of secondary market structure. A secondary market facility which purchases mortgages from or makes collateralized loans to primary market lenders, funded by general obligation bonds, is also a form of secondary market. The adoption of one or both forms of secondary market depend on the needs of primary market lenders and the state of development of accounting and legal systems as well as the housing and bond markets in these countries.

*Dr. MICHAEL J LEA, Co-Editor of Housing Finance International, is Director of Research of IUHFI, and Principal of Cardiff Consulting Services, USA.*

The purpose of this paper is to review the concept and forms of secondary mortgage markets and assess their applicability in developing countries. The paper begins with a review of different forms of funds mobilization for housing in order to define more precisely the concept of a secondary market. The rationales for a secondary mortgage market are reviewed followed by a discussion of the requirements for successful implementation of a secondary market. The experience with secondary markets in a number of countries is summarized and the paper concludes with an assessment of the likelihood of success in creating such markets in developing countries.

***HOUSING FINANCE SYSTEMS***

**Description**

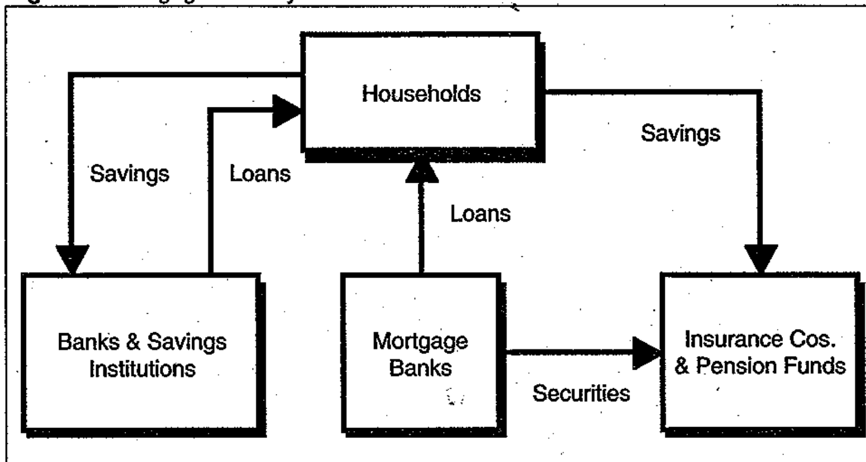
The aim of a housing finance system is to provide the funds which homebuyers need to purchase their homes.[2] This simple description has spawned a broad array of institutional arrangements, ranging from contractual savings schemes, to depository institutions specializing in mortgage finance, to the issuance, sale and trading of mortgage-backed securities (MBS). All of these arrangements have been created with the same purpose in mind, to channel funds from savers to borrowers.

A sign of financial sector development is the funding of owner-occupied housing by formal financial institutions (as contrasted with informal savings clubs, relatives or landlords). These institutions can be private sector entities, which can be shareholder owned or mutual organizations or special circuits (i.e., government-backed institutions operating apart from the broader financial markets). As economies develop, provision of housing finance often moves away from extensive reliance on special circuits towards integration of housing finance into the broader financial markets.

The traditional model of formal financial sector finance of housing is the deposit taking system. In this model, an institution gathers savings from households and enterprises and makes loans to homebuyers.[3] Thus, it originates, services and funds the loan. There are several types of deposit taking institutions, including commercial banks which offer a complete range of banking services, savings banks which deal largely with the household sector, and specialist housing finance institutions (building societies or savings and loan associations) which focus their lending primarily on housing. The United Kingdom is an example of a country which relies largely on depository institutions for housing finance. In Asia, housing finance in both Malaysia and Thailand is provided primarily by depository institutions. Depository institutions are prominent in Latin American housing finance.

An alternative to the depository institution model is the mortgage bank system

**Figure 1 :** Mortgage Bank System

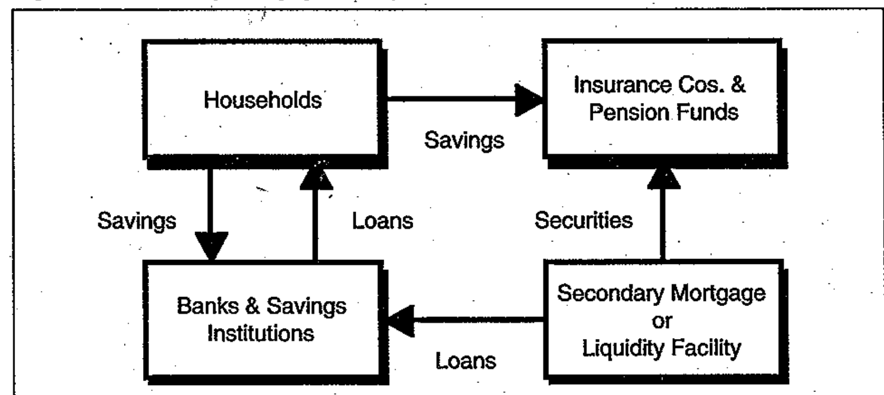



(Figure 1). In such systems, specialized institutions (mortgage banks) originate and service portfolios of mortgage loans which are funded by securities they issue. The securities are general obligations of the mortgage bank and are typically purchased by institutions with long term sources of funds (e.g., pension funds and insurance companies). The mortgage bank model has been around since the mid-1800s and is extensively used in continental Europe (particularly Denmark, Germany and Spain). Asian mortgage banks exist in India and Pakistan.

A depository system is frequently referred to as a retail approach as institutions deal directly with the public in lending and borrowing funds. The mortgage bank system is a combination of a retail and a wholesale approach. Its wholesale character comes from the funds raising side wherein funds are obtained primarily from institutional sources through the broader capital market rather than directly from the public.

In many countries, purely wholesale institutions exist to facilitate the flow of funds to the primary mortgage market (Figure 2). These institutions, referred to as liquidity, rediscounting or secondary mortgage facilities, are typically government owned or supported. They issue general obligation bonds in the capital markets and use the proceeds to refinance the portfolios of primary market lenders. In the U.S., the Federal Home Loan Banks have been making collateralized loans to mortgage lenders since the 1930s (see the Pollock article in this issue). In France, the Caisse de Refinancement de Hypothecaire ("CRH") (earlier known as the Marche Hypothecaire) performs a similar function (see the Stone-Zissu article in this issue). In Asia, the National Housing Bank of India and the National Home Mortgage Finance Corporation ("NHMFC") of the Philippines were created for this purpose[4]. Cagamas in Malaysia purchases mortgage loans from primary market lenders (with recourse and buy back agreements). Its securities are general obligations of the company and not collateralized by the loans. This model is referred to as a secondary mortgage facility ("SMF").

**Figure 2 :** Secondary Mortgage Facility




A fourth approach is a secondary mortgage market ("SMM"; see Figure 3). A SMM involves the sale of mortgage loans (or loan portfolios) or MBS backed by specific pools of mortgages[5]. As such, it involves the transfer of the risks and ownership of mortgage loans to a third party. The loans may be sold to specialized institutions called conduits or special purpose, separately capitalized vehicles. These entities raise funds through issuance of securities backed (or collateralized) by the loans. The majority of residential mortgage loans in the U.S. are funded through the SMM. MBS have been issued in Australia, France, Spain, Sweden and the U.K. (see the Freeman, Roche and Stone-Zissu articles in this issue).

The SMM model was originally developed in the U.S. as a method to sell mortgage loans (i.e., achieve off-balance sheet financing) in order to reduce the interest rate risk associated with fixed rate mortgage lending. The provision of payment guarantees with the securities issued by government sponsored conduits facilitates investor acceptance. The investor in a guaranteed security does not have to worry about default risk (but still is exposed to interest rate risk). In recent years, private SMMs have developed in the U.K. and U.S. without the aid of government. These markets developed because wholesale sources of

funds were cheaper than retail and lenders were capital constrained.

The use of one or more of these systems depends on the stage of development of a country's financial markets as well as government policies. As housing finance involves lending to individuals, it usually emerges as a retail activity. Wholesale funds mobilization develops if the banking system is constrained from supplying sufficient mortgage credit to meet demand or if capital market sources of funding are more cost effective. The issuance of securities is, however, premised on the existence of well developed capital markets. The creation of secondary market institutions has been motivated by the desire to expand the supply of credit available to homebuyers.

## *RATIONALE FOR SECONDARY MARKETS*

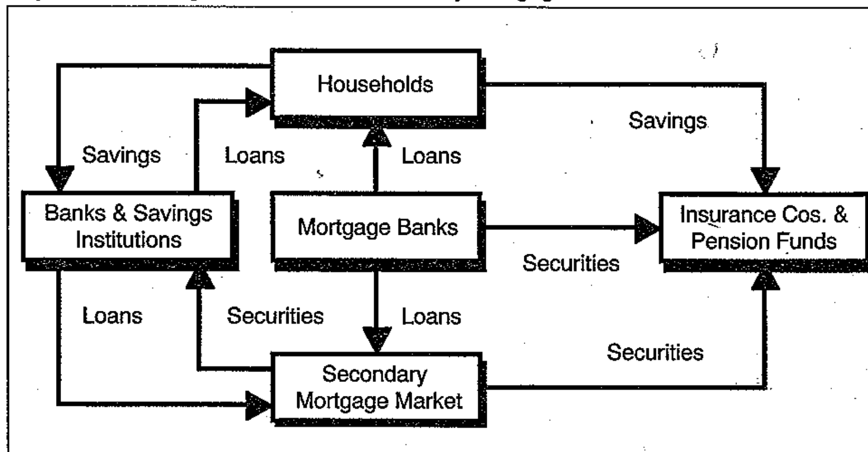
### Why Primary Market Lenders May Not Lend

The need for secondary markets arises when primary market (retail) lenders are not viewed as providing sufficient funds for owner-occupied housing. There are a number of reasons why mortgages may not be attractive investments for retail lenders. First, because mortgages are obligations of individuals, secured by property in a particular location, assessment of credit risk can be costly and time consuming. The ability of the lender to foreclose on loans in default in a reasonable time period with reasonable costs is a major determinant of credit risk.

Second, even if credit risk is manageable retail lenders may perceive significant risk in funding mortgage investment. Mortgages are long term assets (typically 15 to 30 year maturity although with amortization and early repayment their duration are frequently 5 to 7 years). Lenders with primarily short term liabilities are subject to significant liquidity risk if they allocate a substantial portion of their assets to mortgages. Also, mortgage borrowers may demand fixed rate loans. Lenders with primarily short term liabilities are subject to considerable interest rate risk if they invest in such loans (e.g., U.S. savings and loans in the 1970s).

A third factor influencing mortgage investment may be capital. If a lender is capital constrained, it cannot expand its balance sheet significantly without being able to sell the loans it originates. The concept of capital adequacy is fundamentally risk based. If mortgages are viewed as more risky than other forms of investment (e.g., government securities) the lender may choose to invest in lower risk assets which do not use significant amounts of scarce capital.

**Figure 3** : Housing Finance with a Secondary Mortgage Market




A fourth factor influencing mortgage investment activities by private sector lenders is the presence of a state subsidized competitor(s). If one or more institutions in the primary market have preferential access to low cost (government subsidized) sources of funds, they can crowd out private lenders from the market by offering lower rates and/or better terms. Borrowers will often queue to receive below market rate loans, depriving private lenders offering market rate products a profitable customer base.

### Solutions to the Lack of Lending

The proper solution to the perceived lack of mortgage lending depends on the primary cause of the market breakdown. If default risk arising as a result of underdeveloped systems of property ownership or an inefficient foreclosure process is viewed as a major barrier, government provision of mortgage insurance (e.g., similar to the Federal Housing Administration or "FHA" in the U.S.) may stimulate more lending. If the difficulties are primarily due to the costs of underwriting loans or achieving broader geographical diversification, a private mortgage insurance system may suffice. Insurance or security guarantees remove concern over the lack of standardization in or information about mortgages for institutional investors.

A SMF is appropriate if primary market lenders have poor access to the broader capital markets or concerns exist about their ability to manage interest rate or liquidity risk. Security issuance is a more efficient way of raising funds than individual loan sales. A SMF may be able to issue longer maturity bonds than individual institutions. If the institution is well capitalized (or supported by the government) it can achieve a higher credit rating on and lower cost funding for its activities than private issuers. A centralized institution may be able to issue securities with lower transactions costs. Issuance of a large volume of standardized securities can result in greater liquidity than

issues of individual institutions.

SMMs have been created when true off-balance sheet financing is desired. Transfer of ownership enables lenders with relatively little capital to participate in the mortgage market. Although MBS can be issued by private sector concerns, they are complex, unique and costly to issue. In addition, the issuing entity still must confront the problems associated with introducing a new security and assuring investors of its liquidity and credit worthiness.

Establishing a conduit can facilitate creation of a successful SMM. A conduit can work with mortgage originators and servicers to standardize mortgage design, documentation and underwriting, ultimately lowering the transactions costs of mortgage lending. Second, by purchasing mortgages from banks on a nationwide basis, it can achieve geographical diversification, lowering its credit risk relative to that of an individual bank. Third, it can expand the investor base for mortgages, increasing the availability of funds and management of risk. It can do so through credit enhancement, tailoring securities to meet the needs of investors and providing a centralized source of standardized securities. Fourth, it can lower the transactions cost of and develop a market for MBS or debt securities. Finally, a conduit can be a catalyst for innovation in the housing finance system, for both loans and securities.

The problem of competition with a subsidized direct lending competitor cannot be solved through introduction of a secondary market. The lending activities of such competitors must be targeted to those in greatest need. Introduction of a secondary market can facilitate greater availability of funds for the remainder of the home buying population (i.e., those borrowing at market rates).

### Benefits of Secondary Markets

Properly structured, a secondary market can provide significant benefits to a housing finance system, and ultimately to the entire economy. The primary benefit is an increase in the availability of funds for housing. A secondary market can overcome a geographic mismatch between the suppliers and demanders of funds (e.g., if there is a lack of nationwide banking or efficient payments system). It can overcome an institutional mismatch between institutions wherein the capacity or inclination to hold and originate long term assets differs. By expanding the pool of funding options available to primary market lenders, there is less pressure on governments to provide direct (and often subsidized) credit to homebuyers. In turn, governments can target scarce resources to the most deserving groups.

A SMM also can lower the cost of mortgage credit through a more efficient allocation of risk. For example, a SMF may improve interest rate risk allocation through matching of long term mortgages with long term sources of funds.[6] A SMM may lower credit risk through nationwide diversification. Liquidity risk may be reduced through expansion of funding opportunities for primary lenders.

A SMF can reduce the transactions costs of mortgage lending and investment through standardization of mortgage loan documentation, underwriting and servicing and creation of standardized securities. Expansion of the market and functional specialization can reduce costs through economies of scale. By expanding the funding sources for mortgages, a SMM improves the competitive environment which can lead to cost reductions for participants and borrowers.

All of these factors can lead to lower relative mortgage rates. A secondary market also can improve affordability of housing finance for borrowers through the offering of longer maturity mortgages and alternative mortgage instruments (e.g., indexed loans and GPMs).

Finally, an active secondary market enhances the marketability of the securities, reducing the risk of investment and ultimately mortgage rates. For example, in the U.S., the trading volume of MBS has surpassed that of Treasury securities. Not only will improved marketability lower the relative costs of mortgage securities, it can also be a catalyst for the development of the overall bond market.

## *PRINCIPLES OF SECONDARY MORTGAGE MARKET OPERATIONS*

### Primary Market

The starting place for the discussion of the requirements for a successful SMM is the primary mortgage market and within that the mortgage instrument itself. First and foremost, *mortgages must be attractive investments*. The interest rates on the mortgages must be market determined and provide investors with a positive, real, risk-adjusted rate of return. Thus, the mortgage rate must be sufficient to cover the investor's marginal funding cost (both debt and equity), the risks of mortgage investment (i.e., credit, interest rate and liquidity risk) and the administrative cost of servicing mortgages (and MBS). In addition, the mortgage market must be at a sufficient stage of development to produce a significant volume of loans to justify the up-front costs of developing the SMM infrastructure.

A second key primary market characteristic is *standardization* of the mortgage instrument. There can be many types of mortgages present in the housing finance system, but only those with sufficient volume are candidates for sale and securitization.[7] In order to reduce the transactions costs of evaluating mortgage loans and the processing costs of issuing and administering MBS, the characteristics (e.g., rate adjustment, amortization schedule, term) of the mortgages should be uniform. In addition, standardized documentation must be available for all loans. Typical documentation includes the mortgage note (document describing the mortgage obligation) and deed (document conveying ownership to lender as security for the repayment of the mortgage) the application, property appraisal and borrower credit report.

Along with standardization of mortgage instrument and design, the *underwriting* of mortgages should be performed in a comprehensive and consistent manner. The underwriting process establishes guidelines ensuring that a borrower has the ability and the willingness to repay the debt and that the property provides sufficient security for the mortgage. Assessment of the ability to pay generally consists of relating borrower income, assets, liabilities and net worth to proposed mortgage payments and overall housing expenses. Debt-to-income guidelines help to standardize underwriting. Willingness to pay is based on the downpayment (borrower investment in the property) and credit history. The appraisal determines the value of the property through examination of the sales prices of similar properties, construction costs of new properties and market conditions and trends.

The *servicing* of mortgages is a critical component of a viable secondary mortgage market. The collection of mortgage payments and the periodic remittance of these payments to the investor (or conduit) is the major task of servicers (whether they are originators or third parties). In addition, servicers are the primary repository of information on the mortgage loans. Thus, they must maintain accurate and up-to-date information on mortgage balances, status and history and provide timely reports to investors.

Ultimately, the attractiveness of mortgages and MBS depends on the ability of investors to understand the instruments and quantify their risk and return potential. Standardization of mortgage instruments is an important step in reducing the *information* costs to investors. In addition, historical performance data on mortgage payments (e.g., default and prepayment) is important in risk assessment. Because of the importance of data in the assessment of risk, the demands on servicers (and conduits) are potentially great. These institutions must be able to process and disseminate large amounts of information. Thus, they must develop effective, automated management information systems.

An important part of the servicing is establishment of clear guidelines for the *collection* of mortgage payments. The documents must spell out payment obligations (dates, amounts, terms of adjustments, obligations for taxes and insurance) and procedures to be followed in the event of default. Although lender discretion in working with borrowers is an important part of the collection process, third party investors must know what those procedures are before making their investment (in order to assess the degree of default risk) and what latitude exists in dealing with the borrower (e.g., forbearance or restructuring). Servicers also must make decisions about and implement procedures leading to foreclosure and repossession in the case of defaulted loans.

### Legal and Regulatory Framework

A successful housing finance system is premised on a well developed legal and regulatory structure. The primary concern for investors is the security interest. In other words, how enforceable is the claim the investor has on the collateral (house) in the event of default. The answer depends on the clarity of land title, the ability to establish priority of liens on the collateral (i.e., an effective title and lien registration system) and the ability to enforce foreclosure and repossession over a reasonable time period.[8]

Enforceable security interest is a necessary but not sufficient condition for a successful housing finance system. For transactions involving asset sale or pledging (i.e., as collateral), security interests must be transferable and investors must have the ability to perfect their security interest after transfer. Furthermore, the transfer of interest must be at relatively low cost. Thus, transfer and recordation fees should be nominal and borrowers should not have to approve the transfer.

An additional legal concern for investors is the solvency of seller, servicers or other third parties (i.e., credit enhancers, trustees). In the event of insolvency, payments to investors may be delayed while a court reviews the merits of various claimants. Thus, the rights of investors to the cash being collected on their behalf is important. Also, investors should be able to monitor the financial condition of servicers. Investors may demand the right to "pull" or transfer servicing in the event the solvency of a servicer becomes impaired (i.e., to avoid the hazards of diverting cash flow, delaying payments or inadequately collecting loan payments).

In general, the regulatory environment also must be supportive of a secondary mortgage market. Capital requirements on mortgages and MBS must reflect the relative risks and ensure a "level playing field" (i.e., one that does not favor certain institutions or instruments). Proper accounting standards (including the requirements for off-balance sheet or sale treatment) should exist to provide institutions, investors and regulators with accurate and consistently defined information. In many countries, imposition of withholding taxes on asset transfer have proved to be a formidable impediment to the development of a secondary mortgage market.

### Appropriate Role of Government Institutions

In a well developed capital market, wholesale funding and secondary mortgage markets can be developed by the private sector. However, in less well developed capital markets, government support may be necessary to achieve investor acceptance and increased access to funds. Careful attention must be given to the organization and mission of institutions with such support.[9]

Secondary market institutions must have sufficient scale and capital to absorb the start-up costs of developing the systems, procedures and marketing as well as the risk associated with making a market in mortgages. A back-up guarantee by the government (either explicit or implicit) can provide the necessary comfort to investors

to encourage acceptance of the securities. The use (and maintenance) of private capital in government institutions can encourage appropriate risk management and efficiency. Private capital reduces the potential moral hazard associated with the dispensing of government guarantees.[10] The use of private capital does involve a trade-off, however. A government-supported conduit is a monopoly. Therefore, careful attention must be given in defining its mission and monitoring its pricing and risk taking.

Secondary market institutions are not appropriate vehicles for subsidizing mortgage credit. Their primary mission should be to mobilize private capital, broaden the financial markets and improve risk allocation. If the funds for subsidizing mortgage borrowers come from savers or private investors they will not supply sufficient capital to meet demand. As a result, the institutions will have to resort to non-price rationing of mortgage credit during periods of rising demand. Their lending activities will crowd other intermediaries from the market and potentially distort capital allocation. Affordability issues can be better addressed through mortgage design and direct borrower income or downpayment support.

Secondary markets by definition involve the separation of the functional activities associated with mortgage lending (i.e., the institution that owns the mortgage may not have originated it and may not service it). In such a system, principal-agent problems exist. The owner (principal) of the mortgages relies on the actions of the originator and servicer (the agents) to undertake prudent and conservative actions consistent with long-term preservation of capital (this is also the case with collateralized lenders). The agents may have different incentives. For example, a cash short servicer may divert some mortgage payments (claiming the borrowers are in default) to meet short-term needs. Or an originator may relax underwriting guidelines to increase the volume of loans sold or fee income. The principal (or the guarantor) must conduct proper due diligence of servicers and sellers and develop effective incentives to safeguard against such actions.

### *EXPERIENCE WITH SECONDARY MORTGAGE MARKETS*

#### United States of America

The SMM mobilizes a majority of funds for owner-occupied housing in the U.S. Over one-half of new originations are sold into the SMM and the lending of the FHLBs has been increasing during the past three years. The SMM was created in the U.S. to deal with geographic mismatches brought on by the regulatory prohibition of nationwide banking. The other major factor in its development (as well as that of the FHLBs) was the regulatory prohibition of adjustable-rate mortgages in the U.S. until the early 1980s. Historically, the FHLBs acted in a countercyclical manner, providing funding to thrifts suffering disintermediation due to ceilings on deposit interest rates.

Both the SMM and the FHLBs enjoyed strong growth during the 1980s. The former was driven by the combination of technology, broader capital market development and growing need for off-balance sheet financing by thrifts. Advance borrowing by thrifts also grew until the late 1980s when regulatory changes forced the closure of many institutions and the shrinkage of many others. The recent growth of FHLBS reflects in large part borrowing by commercial banks (which were allowed to join the system beginning in 1990).

The development of the U.S. SMM has not been without controversy. The FHA suffered significant default losses during the 1980s and subsequently had to tighten its qualification standards and raise its insurance fees. Fannie Mae had several years of negative earnings and a negative mark-to-market net worth in the early 1980s, the result of investments in fixed-rate mortgages in a volatile interest rate environment. Portfolio lenders claim that the economies of scale and implicit government backing of the secondary market agencies crowd them out of the mortgage market by reducing spreads to the point where it is no longer profitable (on a risk-adjusted basis) to hold mortgages (this is probably true for fixed-rate mortgages, less so for adjustable-rate mortgages). The U.S. appears to have weathered all of these problems. Congress has passed and the agencies currently meet new capital requirements (as do the remaining thrift institutions). FHA's non-subsidized activities are once again actuarially sound. Throughout this entire time period, U.S. homebuyers benefited from ample availability and a relatively low cost of mortgage credit.

#### United Kingdom

Unlike the U.S., the SMM in the U.K. developed without any government involvement (Freeman). In the mid-1980s, centralized mortgage lenders entered the market in response to wide spreads between mortgage rates and money market rates. These institutions (private conduits) lend through a network of brokers and insurance agents and fund themselves entirely through wholesale sources, primarily MBS. The centralized lenders were able to build a share as high as 13 percent of the market over a short period of time, aided by favorable wholesale-to-retail funding rates and aggressive marketing and product differentiation, Their share fell in the early 1990s to less than 5 percent of the market, reflecting the aggressive pricing of building societies, which benefited from significant deposit inflows in the wake of the October 1987 stock market crash. Downgrading of insurance companies, which provide credit enhancement for centralized lender MBS, and unfavorable risk based capital treatment of MBS (until recently at 8 percent, rather than the 4 percent level of residential whole loans) adversely affected the cost of funds of the centralized lenders.

#### Europe

Unlike the U.K. and U.S., MBS markets have not yet developed in Europe. In recent

years there have been isolated issues (in France, Spain and Sweden) but no ongoing programs. The primary reasons for the slow pace of securitization has been the lack of capital pressure on lenders, low rates on mortgages (particularly in France), high costs of developing securitization programs and legal and regulatory uncertainty.

Wholesale funding of mortgages is well established in Europe. France, Germany, Spain and the Nordic countries have active and well developed mortgage bond markets. Bonds are issued by private and state-owned mortgage banks. Investors (particularly insurance companies and pension funds) are major holders of mortgage bonds. They typically have restricted investment opportunities or incentives to hold mortgage bonds. Government supported wholesale banks exist in France, Germany and Spain. These institutions refinance the portfolios of primary market lenders. It is notable that all of these countries have highly developed securities markets.

### Asia

The only Asian country with a true (but small) SMM is *Australia*. MBS were introduced in Australia in 1986 (Whitehead & Yates). By 1991 over $6 billion had been raised through this approach. Most of the MBS issuance has been by mortgage companies specializing in low start rate loans guaranteed by state housing authorities.

A secondary market institution, Cagamas, was created in *Malaysia* in 1987 to purchase loans from primary market lenders. Both market rate and government subsidized loans are purchased with the intent of reselling them to the lenders after a period of 3 to 7 years (selected by the lender). The loans are acquired on recourse from the lenders which administer them on behalf of the company. The mortgage acquisitions are financed with the proceeds of general obligation bond issues. Both fixed and floating rate bonds have been issued corresponding to the characteristics of Cagamas' loan purchases. The government has created incentives for the holding of these securities through tax preferences, assignment of the lowest risk based capital weight for depository institutions, authorization for investment by pension funds and insurance companies and inclusion of the securities as part of the investments that can be held as liquid assets. Cagamas is by far the largest issuer of private debt securities in Malaysia. It issued over RM 3.3 billion of debt securities in 1992 and had over RM 5.1 billion outstanding at the end of the year.

A number of Asian countries have created wholesale institutions to provide liquidity through refinancing primary market loans. In *India*, the National Housing Bank ("NHB") has achieved a degree of success in mobilizing new funds for owner-occupied housing (Struyk and Ravicz). Most of its funds have come from government directed sources or through bond issues carrying special tax advantages. In general, NHB's access to new funds lags its commitments and it has had only limited success in tapping the broader financial markets.

The Government Housing Bank (GHB) in *Thailand* obtains its funds primarily through deposits. The GHB has been noted as a constructive source of innovation and competition in the system (Mayo). It began offering to refinance (at lower interest rates) existing mortgage loans held by commercial banks in the mid-1980s, using its cost advantage in raising funds (as a government-backed institution). The banks responded by significantly increasing their volume of mortgage lending in order to retain their customer base.

The experience of the *Philippines* with government supported mortgage institutions has not been positive. The major government lending entity, the NHMFC, mobilizes funds from government pension plans and mutual funds to provide mortgage loans to their members. As such, it is a combination retail/wholesale institution. It has suffered from very high default rates and currently is undergoing its second "rehabilitation" in the last 6 years. The current plan calls for it to be reconstituted as a SMM conduit purchasing loans from banks and developers and issuing MBS.

The existence of specialized housing banks in *Sri Lanka* and *Korea* does not appear to have significantly improved the availability of housing finance. Both countries are plagued with severely repressed financial systems in which the government actively attempts to direct credit (Renaud, Struyk and Ravicz). Housing finance is provided primarily through specialized state mortgage banks that operate on a retail (direct lending) as well as wholesale (security issuance) basis. Mortgage rates are not market determined and what funding is available comes from directed sources (e.g., state pension funds). The volume of lending is small (relative to the size of the economy) and private sector participation is limited.

## *DEVELOPING COUNTRY NEEDS*

Many developing country economies have been undergoing rapid change and growth. As a result, the demands on the financial system become greater with each passing day. With growth and change comes increased awareness of the financing needs of particular sectors. One of the major roles for government is to identify and prioritize the principal problems affecting provision of credit for important social and investment needs and adopt appropriate policies to solve those problems. One of its major goals should be the increased participation of the populace in the formal financial sector and the increased importance of private sector entities in this sector.

High real interest rates are a major problem in the area of housing, as they reduce affordability particularly for low and moderate income households. Secondary markets are not the primary solution for this problem. The development of a secondary market can modestly lower mortgage rates relative to other market interest rates through an increased supply of funds, better allocation of liquidity and interest rate risk and increased competition. Development of a

secondary market can lead to the use of longer term mortgages which can improve affordability. However, targeted subsidy programs and the introduction of alternative mortgage instruments are better solutions to affordability problems of low and moderate income groups.

The second significant issue is credit risk in mortgage lending. The ultimate solution to this problem is improvement in the land titling and court systems - both of which are long term projects. Provision of mortgage insurance through the government could reduce or eliminate credit risk for mortgage investors. However, it could expose the government to significant liabilities if it is not properly priced and underwritten. In many countries, private banks find creative ways to deal with mortgage credit risk including third party guarantees, payroll deduction and direct debiting of bank accounts.

A third market need is greater access to long term sources of funds. There are frequently substantial sources of long term funds that could be invested in mortgages if proper investment vehicles are made available (e.g., insurance and pension funds). A SMF may be the most appropriate way to improve access to long term sources of funds for mortgage lending. Private banks could obtain long term advances (collateralized loans) from a SMF funded by general obligation bond issuance. The bonds would be purchased by pension plans, insurance companies and other banks.

The appeal of this alternative is that it is relatively simple to implement. If the collateralized lender can get prompt access to the borrower's payments in the event of loan default, the risk of such lending should be modest (as it is typically done on an over-collateralized basis). If the SMF has some form of government involvement, it will have a ready demand for its bonds among long term investors. The activities of the SMF can spur general bond market development.

If mortgage lenders are unable or unwilling to significantly expand their mortgage investments then a mechanism for sale of the loans need to be developed. One alternative could be for a SMF to purchase loans, funded by its bond issues. However, this approach may be more time consuming to develop reflecting the uncertain legal status of mortgage sales and the need to develop procedures for monitoring and managing servicing risk.

A true SMM may be necessary if primary market lenders are undercapitalized (relative to the risks of mortgage investment) or if it is desirable to stimulate competition from smaller more entrepreneurial companies (e.g., the centralized lenders in the U.K.). The drawback of this model is that it is expensive and time consuming to form. Systems for tracking and transferring cash and information may have to be developed. Mortgage design and underwriting may have to be standardized to permit an MBS issue. Legal obstacles to ownership transfer may have to be resolved as well as determining how credit enhancement would be provided. Investors need to be educated about the cash flow characteristics and risks of mortgage-backed securities. In many countries, it may be more appropriate for a SMM to develop naturally, in response to a funding cost differential, capital market development and the demand for off-balance sheet financing. ■

### NOTES

[1] This study is based on work done by the author in Indonesia, funded by U.S. Agency for International Development in 1993. The opinions expressed herein are those of the author and not USAID.

[2] For a comprehensive description of housing finance systems in the early 1980s, see Boleat [1985]. For a recent analysis of European and U.S. housing finance systems, see Diamond and Lea [1992 a,b].

[3] Contract savings systems can be viewed as specialized depository institution circuits. They are most prominent in France and Germany.

[4] A number of countries have national housing banks which operate primarily on a retail basis. Examples in Asia include Bank Tabungan Negara in Indonesia, the Government Housing Bank in Thailand and the Korean Housing Bank. NHMFC has both retail and wholesale functions.

[5] An MBS also is referred to a pass-through security in which borrowers' monthly principal and interest payments and loan payoffs are passed directly to the investor net of servicing and guarantee fees.

[6] Prepayment risk is a form of interest rate risk arising from the early repayment of mortgages. Specialized securities (derivatives) have been created in the U.S. to more efficiently allocate prepayment risk. A SMF may be exposed to significant prepayment risk if it purchases mortgages funded with fixed term, non-callable debt. However, by virtue of its scale it may be in a better position to manage this risk than individual lenders.

[7] Standardization is less important for collateralized lending. Pools of diverse mortgages can provide effective collateral as long as they can be identified, legally pledged and valued.

[8] In the short run, a government mortgage insurance fund can overcome these concerns. However, a reasonable and enforceable title and foreclosure process is a necessary condition of a viable mortgage insurance fund. Once a functioning legal process for protecting investor rights is in place, private mortgage insurers can provide default guarantees to investors. A government insurance fund can provide targeted assistance to certain groups (e.g., low to moderate income first-time homebuyers).

[9] After a secondary market is successfully introduced, any government support can be withdrawn. This was the case with the

➪ 34

OVERVIEW . . .

➪ 10

CRH in France. Discussions about the privatization of Fannie Mae and Freddie Mac have taken place in the U.S. Reduced government support enhances market discipline and reduces the contingent liability of the government for the activities of the institution.

[10]A moral hazard exists when the activities of the insured directly affect the exposure of the insurer. An insured individual who engages in high risk activities presents a moral hazard to the insurer. In the U.S., the high risk lending by bankrupt savings and loans demonstrated the moral hazard to the government of deposit insurance.

### REFERENCES

Boleat, M., *National Housing Finance Systems: A Comparative Study*, London, Croon-Helm Ltd, 1985.

Cagamas Berhad, 1992 *Annual Report*, Malaysia 1993.

Diamond, D.B. and M. J. Lea, "The Decline of Special Circuits in Developed Country Housing Finance", *Housing Policy Debate*, 3, 3, 1992b.

Diamond, D.B. and M.J. Lea, "Housing Finance in Developed Countries: An International Comparison of Efficiency". *Journal of Housing Research*, 3, 1, 1992a.

Mayo, S., "Housing Finance Development: Experiences in Malaysia and Thailand and Implications for Indonesia", paper prepared for the Office of the State Minister of Housing, Indonesia, January 1990.

Renaud, B., "Confronting a Distorted Housing Market: Can Korean Policies Break with the Past?", paper presented at the Korea-US Symposium on Korean Social Issues, Graduate School of International Relations and Pacific Studies, University of California at San Diego, June 1992.

Struyk, R. and M. Ravicz, *Housing Finance in LDCs: India's National Housing Bank as a Model?* Urban Institute Report 92-2, Washington D.C., 1992.

Whitehead, C. and J. Yates, "Deregulation and the Private Financing of Housing in Australia and the U.K.", paper presented at the Housing Finance Workshop, Conference on European Cities: Growth and Decline, The Hague, The Netherlands, April 1992.

UNITED KINGDOM . . .

➪ 27

France and described in the article by Stone and Zissu in this issue, any bank which securitises assets and then repurchases the credit risk via holding the subordinated tranche of any security must provide an appropriate amount of capital against the entire pool of assets.

UNITED STATES . . .

➪ 33

change in credit availability to underserved groups will happen more slowly. The institutions that recognize this business as an opportunity will contribute to their profits as well as the goal of credit extension.

The future role of the federal government in the mortgage market is likely to be one of setting the policy (i.e., setting minimum requirements of what is provided and who is served) and sharing the risk in some difficult to serve sub-markets. The government is less likely to take the responsibility for directly providing services or financing. Private institutions following the policy direction will contribute the ingenuity to provide a vast array of services and finance at low cost to these groups.

Participants in the mortgage market range from government agencies to private unregulated corporations, but these institutions are different in degree, not kind. They will all be influenced by the new arrangement between the government and the mortgage market. ■

### NOTES

[1]This section draws from Carr and Megbolugbe.

### REFERENCES

Carr, James H. and Isaac F. Megbolugbe, 1993: "The Federal Reserve Bank of Boston Study on Mortgage Lending Revisited", *Fannie Mae Office of Housing Research Working Paper*.

Galster, George, 1993: "Future Directions in Mortgage Discrimination Research and Enforcement," presented at the Home Mortgage Lending and Discrimination Conference.

Hendershott, Patric H., and James D. Shilling, 1989: The Impact of the Agencies on Conventional Fixed-Rate Mortgage Yields, *Journal of Real Estate Finance and Economics*, 2, 101-15.

Munnell, A. H., L.E. Browne, J. McEneaney, and G. Tootell, 1992: *Mortgage Lending in Boston: Interpreting the HMDA Data*, Working Paper, Federal Reserve Bank of Boston.

Quercia, Roberto G. and Michael A. Stegman, 1992: "Residential Mortgage Default: A Review of the Literature," *Journal of Housing Research*, v. 3, pp. 341-379.

Sirmans, C.F. and Benjamin, John D., 1990: Pricing Fixed Rate Mortgages: Some Empirical Evidence, *Journal of Financial Services Research*, 4, 191-203.

Stiglitz, Joseph E. and Andrew Weiss, 1981: "Credit Rationing in Markets with Imperfect Information." *American Economic Review*, v. 71, pp. 393-410.