Mortgage Default Insurance: Credit Enhancement for Homeownership

by Roger Blood

Since the mid-1990s a growing number of countries have expressed interest in mortgage default insurance. This special type of mortgage credit enhancement can help increase access to homeownership. Whether it will work well in a particular country depends upon that country's unique situation. If the environment is conducive, the successful mortgage default insurance program must adapt to each nation's specific circumstances. A good fit entails many factors, including economic, financial, legal, political, regulatory, housing market, geographic, institutional, and even cultural.

INTRODUCTION

Mortgage default insurance ("MI") protects lenders and investors against loss by reason of borrower default in situations where the home value (net of foreclosure-related costs) is insufficient to fully repay the mortgage obligation. MI is but one of a range of insurance products that serve to protect lenders and investors from loss. Such lines may include fire and extended coverage, borrower life and disability insurance, lender errors and omissions insurance, fidelity bonding, flood and earthquake (special hazard) coverage, and title insurance. In a developing economy, it may be useful to consider MI in the broader context of all possible events that can result in non-repayment of a home loan.

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MI may be employed for a variety of reasons, including: to stimulate home construction, to create new business opportunities for insurance providers, or even to help develop uniform mortgage lending standards. But, over time, MI has been used mainly for two reasons:

1. To expand access to home mortgage financing and, therefore, to homeownership by inducing lenders to relax their loan approval standards, i.e., to "expand the underwriting envelope."

2. To stimulate the flow of funds from capital markets into the housing and mortgage sector by reducing the investment risk, i.e., secondary market/mortgage-backed security stimulus.

While the second reason above tends to receive greater attention in developing economies today, the common historical sequence in countries where MI already exists has been for MI first to help expand and improve the primary mortgage market. Then, as a by-product of that primary market momentum, MI has tended to help accelerate development of the secondary market and mortgage-backed securities.

INTERNATIONAL OVERVIEW

Mortgage default insurance programs worldwide today range in size from the United States private MI industry ($13 billion capital) combined with U.S. government mortgage insurance (over $14 billion capital) to the new Israeli private mortgage insurance firm (US$13 million capital). MI programs today also serve national housing markets in Canada, Australia, New Zealand, the United Kingdom, Hong Kong, and South Africa.

Following highlights of MI programs in the above-referenced countries, this article will discuss some of the key issues facing these programs as they, and their users, have sought to fulfill important public and private housing finance goals.

United States

In the first quarter of this year, private MI firms wrote $50 billion of new insurance, or

12.5% of the nation's total $400 billion of home loan originations. Federal government insurers (Federal Housing Administration and Veterans Administration) wrote $32.4 billion during the same period, or about 8% of total mortgage lending. The U.S. mortgage insurance market is unique in that loan originators using MI number in the thousands, compared with a few dozen or less in other countries where MI exists.

Since 1980 the industry has consolidated from 14 private MI firms to the present seven, driven in part by adverse loss experience in the 1980s (see Table 1). Private MI annual new business volume, however, grew from under $20 billion in 1981-1982 to over $160 billion in 2000. This MI growth took place during a period when total annual U.S. mortgage originations grew from under $100 billion to over $1 trillion (see Table 2).

FHA government mortgage insurance began in 1934, during the Great Depression. The current private MI industry began in 1956 with the founding of Mortgage Guaranty Insurance Corp. Over the past 20 years, the private MI and government shares of total insured lending generally have fluctuated between 40% and 60%, respectively. In 2000 and early 2001, private MI's gained share relative to the government-sponsored FHA and VA programs.

The FHA also encountered severe financial stress in the late 1980s and, at one point, was deemed technically insolvent. In response, FHA raised its premium rates to restore minimum required capital. Also, FHA now must undergo a rigorous annual actuarial review conducted by an outside accounting firm. During the 1990s, the FHA regained its financial health, and premium rates have since been reduced.

Throughout the 1990s, positive economic conditions, rising business volume, and the benefits of new technologies have all con-

Table 1. Private MI Firms in the United States (June 30, 2001)

Name of Firm	*Corporate HQ*	*Owner*	*Rating*	*Insurance in Force ($Billions)*	*New Business Market Share (1Q2001)*
Mortgage Guaranty Insurance Corp. (MGIC)	Milwaukee WI	NYSE listed	AA+	$164.2	25.4%
PMI Mortgage Insurance Company (PMI)	San Francisco CA	NYSE listed	AA+	$110.0	18.5%
GE Capital Mortgage Insurance Corp. (GE)	Raleigh NC	GE	AAA	$114.7	15.7%
Radian Guaranty, Inc.	Philadelphia PA	NYSE listed	AA	$103.9	15.5%
United Guaranty Corp. (UGC)	Greensboro NC	AIG	AAA	$93.6	13.4%
Republic Mortgage Insurance Company	Winston-Salem NC	Old Republic	AA	$63.3	8.8%
Triad Guaranty Corp. (Triad)	Winston-Salem NC	Nasdaq listed	AA	$17.3	2.7%

Source: *Inside Mortgage Finance;* Standard & Poor's

Table 2. 20-Year Growth of Private and Government Mortgage Insurance in the U.S (billions of dollars)

Year	*Total Residential Mortgage Originations*	*New Insurance Written*		*Private + Gov't Insured as a Percent of Total Originations*	*Private MI Percent of Total Insured*
		Private MI	*Government (FHA + VA)*		
1981	$ 98.2	$ 18.7	$ 18.1	37.5%	50.9%
1985	$ 250.1	$ 51.0	$ 37.1	35.2%	57.9%
1990	$ 476.0	$ 40.9	$ 67.6	22.8%	37.7%
1995	$ 639.4	$109.6	$ 69.3	28.0%	61.3%
1999	$1,310.0	$188.9	$157.7	26.5%	54.5%
2000	$1,048.0	$163.1	$100.9	25.2%	61.8%

Source: Mortgage Insurance Companies of America; U.S. Department of Housing and Urban Development

tributed to produce extraordinarily favorable business trends for the private MI industry (see Figure 1). Sustaining such results into the new millennium will present considerable challenges to MI management.

Fannie Mae and Freddie Mac, the two dominant secondary mortgage market government-sponsored enterprises (GSEs), function as a third type of mortgage insurer in the U.S. Freddie Mac issued and guaranteed the first GSE mortgage passthrough security in 1971. Unlike the FHA and VA, whose guarantees are backed by the full faith and credit of the U.S. Government, the GSE guarantees are not government-backed. Investors, however, view the GSEs special federal charter and U.S. Treasury line of credit as an implied government guarantee.

Nearly one half of all residential loans originated in the U.S. today are securitized and guaranteed by Fannie Mae and Freddie Mac. While the GSEs' annual guarantee fees run about 20 basis points, these fees are negotiable with lenders, and can be reduced if lenders sell their loans with supplemental private MI pool insurance.

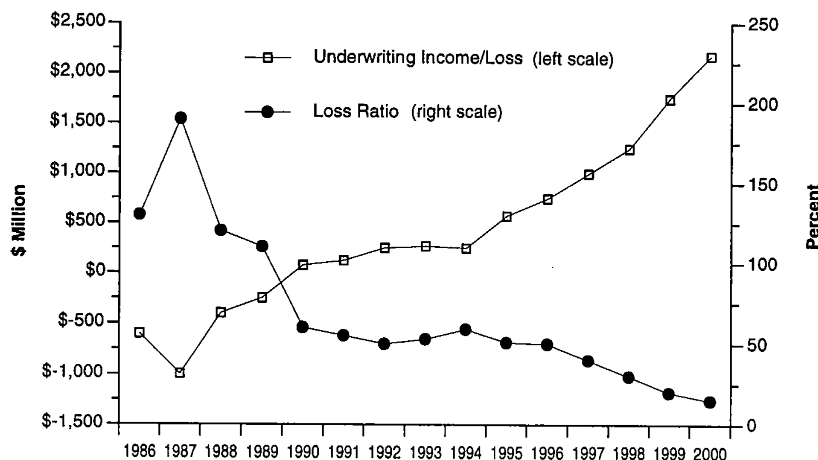
At year-end 2000, the two GSEs had $2 trillion of outstanding guarantees on securities backed by pools of home mortgages purchased from private lenders. About one quarter of these loans have loan-to-value ratios over 80%, most of which carry primary private MI for the protection of the GSEs.

Whereas most privately insured loans are sold into Fannie Mae and Freddie Mac pools, most government-insured (FHA and VA) loans are sold into pools with cashflows guaranteed by Ginnie Mae, a U.S. Government agency created in 1968 for this express purpose.

Finally, several individual states, including California, New York, Pennsylvania, and Massachusetts, operate mortgage insurance programs targeted toward moderate- income homebuyers in their respective states.

The FHA writes 100% coverage on individual loans. Private MI writes mainly top-tier coverage, which averages 20% to 30% of the total loan amount. FHA premiums are paid at closing with annual renewals, while private MI has migrated almost entirely from annual to monthly premiums with no premium payment due at loan closing.

Figure 1. Key Trends in U.S. Private Mortgage Insurance Industry (1986–2000)



Until rather recently, maximum insured LTVs were 95% for private MI and 97% for the FHA. Currently, it is possible to secure both private and government MI for loans up to 100% LTV, or even slightly higher.

Private MI firms are required by regulation to be monoline insurers. Stringent capital requirements are measured as a percent of total risk exposure and vary with LTV ratio and percent coverage. A special "contingency reserve" against catastrophic losses is also required. MI firms cannot be owned or controlled by insured lenders, nor can they pay insurance commissions to lenders. Private insurers in the U.S. must maintain AA- or higher investment grade ratings in order to be accepted in the marketplace. The rating process applies a stress test of claims-paying capacity that simulates depression level economic conditions.

Most individual states maintain guarantee funds that pay policyholders' claims in the event of insurance company insolvency. However, because mortgage insurance companies assume catastrophic economic risks, this unique line of insurance is excluded from the state insolvency funds.

Canada

Two mortgage insurers, one a federal government crown corporation and the other privately owned and capitalized, currently serve Canadian mortgage lenders. The government insurer, Canada Mortgage and Housing Corporation (CMHC) began insuring home loans in 1954 and has, since the outset, generally dominated the market for insured home loans.

At one time, Canada was served by three private MI firms that eventually combined. The one remaining private insurer now is GE Capital Mortgage Insurance Canada (GEMIC). In 1995 GE purchased the license of the then-inactive Mortgage Insurance Company of Canada (MICC), which began business in 1963.

Total annual mortgage originations in Canada run roughly US$50 billion, the mortgage-insured share of which is about US$20 billion. A half dozen or so lenders account for about three-quarters of all MI purchased. CMHC insures about 400,000 units annually. GEMIC, competing mainly on the basis of technology and service, insures a smaller, but growing number of loans. Basic coverage terms, premium pricing, and target markets of the government and private MI programs are quite similar.

The secondary/MBS market plays a much smaller part in Canada's mortgage market than in the U.S. Since issuing its first mortgage-backed security in 1986, CMHC has been the dominant MBS issuer in Canada. In 2000, CMHC issued about US$7 billion of guaranteed mortgage-backed securities. As discussed further below, individual high-LTV loans insured by both CMHC and GEMIC are eligible for inclusion in CHMC-guaranteed mortgage pools.

Canadian MI provides 100% coverage on individual loans. MI premiums are all fully prepaid at loan closing. Maximum insurable LTV ratios typically are 95%, although in 2000 GE announced a limited 100% LTV pilot program.

Prepaid premium rates for loans over 80% LTV typically run 2% to 3.75%. Private MI in Canada does not require an investment grade rating, because the solvency of the private MI is protected by a government guarantee. While GE Capital's Canadian MI company is not rated, it does have access to its AAA-rated parent's financial backing if needed.

As in the U.S., a Canadian MI firm operates as a monoline carrier. It maintains a contingency reserve against catastrophic losses and does not pay insurance commissions to originating lenders. Risk-based capital requirements are based upon a sliding scale according to LTV ratio, percent of coverage and age of loan.

Australia and New Zealand

Total 2000 mortgage originations in Australia amounted to approximately US$53 billion. Of this total, about US$22 billion carried MI, including traditional insurance of high LTV ratio loans and bulk insurance of securitized pools. In both Australia and New Zealand, most MI is purchased by fewer than half a dozen lenders.

In Australia, mortgage securitization has jumped in five years from US$1.7 billion in 1995 (all domestic) to US$9.4 billion (over 50% foreign investor) in 2000. Most securitized pools consist of loans that are all privately insured, either with standard 100% loan-level coverage or bulk insurance. Whereas in the U.S. and Canada, timely payment coverage on securitized loans is provided by a government agency or GSE, in Australia limited cashflow protection (up to 24 months) is provided as supplemental coverage by the private mortgage insurers for a modest additional premium.

Most MI coverage in Australia is 100%, whereas in New Zealand it is top cover—typically the first 20%-30%. MI premiums, prepaid at loan closing, may be financed as an add-on to the mortgage balance. Typical life-of-loan premium rates, depending mainly on LTV ratio, run from about 0.5% to 2%. Maximum LTVs, held to 95% for some years, have recently been raised to 97%, and in limited instances to 100%. The market—in particular the secondary market—requires MI firms to maintain a rating of AA on claims-paying capacity.

Both premium rates and long-term claims incidence rates have been notably lower in Australia and New Zealand than in other counties with established MI programs.

MI in Australia and New Zealand is in a state of flux. For a number of years prior to 1998, Australia was served by four mortgage insurers. Housing Loans Insurance Corporation (HLIC), the government insurer originally formed in 1965, held about a 45% market share. The balance of the market was served by three private firms: MGICA, the first private Australian MI, also formed in 1965, Royal & Sun Lenders Mortgage Insurance, and CGU Lenders Mortgage Insurance, Ltd.

A series of changes began in December 1997 with the privatization of HLIC and its purchase by U.S.-based GE Capital. In August 1999, San Francisco-based PMI acquired MGICA from its Australian owners and renamed it PMI Mortgage Insurance Ltd. Then, in July 2001, PMI announced its acquisition of CGU Lenders Mortgage Insurance from its U.K.-based owners.

All three of Australia's private MI firms also serve New Zealand, which has no government-sponsored MI. The privatized HLIC, renamed GE Mortgage Insurance Pty Ltd, now has entered New Zealand. So, as 2001 draws to a close, barring any further announcements, it appears that Australia and New Zealand will be served by three private MI providers, two of which are U.S.-owned.

Private MI firms in Australia and N.Z. are chartered as monoline, although unlike in the U.S. they are authorized to insure both residential and commercial mortgages. Australia has stricter MI regulation than New Zealand, including a special sliding scale capital reserve for loans over two-thirds LTV ratio, a contingency reserve, and a prohibition on paying commissions to lenders for "regulated" loans on owner-occupied homes.

United Kingdom

Mortgage insurance in the U.K. differs markedly from other countries. Commonly known as mortgage indemnity guarantee, or MIG, coverage in the U.K. typically has been written for British banks and building societies and other lenders by multiline domestic carriers (e.g., Royal & Sun Alliance, Norwich Union). Mortgage default coverage has been marketed to lenders as part of a larger blanket insurance package.

Until the early 1990s, U.K. mortgage insurers paid for pricing adequacy or risk management. The recession of the late 1980s and early 1990s, however, caused enormous MIG claims and losses, followed by rising claims denials and, eventually, a revamping of the entire business. Premium rates were effectively increased, risk analysis intensified, and coverages redesigned or reduced to impose real risk-sharing with the lender. However, the cross selling of other profitable lines of insurance remains a core incentive for the multiline MIG providers. Published MIG industry data still is sketchy at best.

GE Capital, along with Lloyd's and French-owned GAN, entered the U.K. market as it was beginning to recover and reform. GE's de novo entity, GE Capital Mortgage – U.K. Ltd., commenced underwriting in 1995. Some of the major mortgage lenders are effectively self-insuring via thinly capitalized offshore captive insurers. These captives may be capturing more than half of all MIG writings, but further growth may be constrained by successive changes in the tax laws.

MI fees in the U.K. either appear as an add-on to the loan interest rate or are paid upfront, sometimes added to the loan balance. Insured 100% LTV loans are offered for a limited portion of a lender's total insured book, and recently, "flexible" loans over 100% LTV have been offered by some lenders.

Since the mid-1990s more custom-tailored MI products have emerged also to meet the credit enhancement needs of specific financings, including excess of loss and catastrophic reinsurance for lender captives.

With the conversion of many banks from mutual to stock ownership several years ago, there has been growing interest in the cost and management of bank capital, including the potential for mortgage insurance to expedite securitization. While some U.K. mortgage insurers do not carry investment grade ratings, the use of MI in support of securitization to offload assets from lender balance sheets undoubtedly will draw greater attention to MI financial strength and ratability.

The British government's posture regarding MI has been laissez faire, with no special regulation or support. MI firms in the U.K. are not subject to special regulations, such as minimum risk-based capital and contingency reserves for economic catastrophe, nor is separate regulatory reporting required. U.K. insurance regulation does not restrict mortgage insurers from offering financial incentives to lenders for the placement of mortgage insurance.

ISMI is a form of government mortgage insurance in the U.K. that is available to less affluent homebuyers. However, ISMI differs from MIG in that ISMI operates as a form of payment protection plan for the borrower's direct benefit in the event that adverse circumstances such as unemployment, illness or accident causes an inability to pay.

Hong Kong

Mortgage insurance in Hong Kong is a recent development, having been instituted by the Hong Kong Mortgage Corporation (HKMC) in March 1999. HKMC is a quasi-public secondary market agency that began operating in late 1997. Like Fannie Mae and Freddie Mac, HKMC buys home loans from approved private lenders and issues securities backed by pooled mortgages it has purchased.

Prior to the launching of its MI program, HKMC would purchase loans up to a maximum LTV of only 70%, which also was the originating banks' effective LTV limit. With the advent of MI, the HKMC and the banks it serves increased their maximum allowable LTV to 85%. Selling lenders were required to secure MI for the amount of the incremental layer of the loan exceeding 70% LTV. HKMC concurrently arranged to reinsure this same excess layer with qualified mortgage reinsurers.

In August of 2000, HKMC, having gained confidence from its initial MI experience, expanded the program to include LTVs up to 90%, in which instance the originating lender would still be required to secure MI coverage down to the 70% LTV level. Also, beginning in April 2000, HKMC began to retain a 20% share of the total MI risk with some of its reinsurers. Most MI is written on a prepaid basis, with rates typically running about 1.4% for loans up to 80% LTV, about 2% of loans >80% to 85% LTV and about 3% for loans >85% to 90% LTV.

Annual home loan originations in Hong Kong totaled about US$15 billion in 2000. Of this, HKMC issued insurance commitments on US$1.2 billion of loans on nearly 50,000 MI applications, or about 8% of total lending volume in Hong Kong. Over 40 of HKMC's approved lenders—mostly commercial banks—now participate in HKMC's insured high-ratio lending program.

HKMC has qualified a total of five reinsurers—three domestic and two U.S.-based MI companies, PMI Mortgage Insurance and

United Guaranty, a subsidiary of AIG. Some key features of the Hong Kong program are fashioned after the U.S. model, including the allocation of 50% of net earned premiums to a special contingency reserve to cover possible catastrophic losses in accord with MI regulatory guidelines.

Currently HKMC is working to use its MI capabilities to support the efforts of the Hong Kong Housing Authority to finance the sale of part of its physical inventory of housing, thereby enabling renters of more limited means to achieve homeownership for the first time.

Israel

In a country that has recently recognized MI as a tool to help advance national housing goals, Israeli government officials have responded positively to a proposal by a group of private investors to establish a new private mortgage insurance firm.

After several years of planning and development, EMI-Ezer Mortgage Insurance Company, Ltd. by mid-1998 was capitalized, licensed and writing its initial business. AIG made an essential capital infusion through two of its affiliates, the U.S. mortgage insurer, United Guaranty and AIG Golden Insurance, thereby assuming an 80% ownership interest in EMI-Ezer. The AIG/United Guaranty backing has enabled EMI-Ezer to attain AAA ratings from Fitch IBCA and Ma'alot, the domestic affiliate of S&P.

The Israeli mortgage market is served mainly by nine mortgage banks, of which three predominate. Total mortgage originations currently approach US$5 billion per year. Uninsured loans have typically been extended up to 70% LTV ratio. Prior to the introduction of mortgage insurance, higher ratio loans could be secured under a formalized system of personal guarantees from individual third parties. However, in 1992 lenders were considerably restricted in their use of these personal guarantees, thereby creating an opportunity for the introduction of mortgage insurance.

Initially, the EMI-Ezer MI program extended LTV limits to 80%. More recently, that insured loan limit has been increased to 90%, a change, which has considerably expanded the potential market and lender interest in MI. While the initial MI product offering was 100% coverage, subsequent changes were made to achieve a more efficient use of capital and to establish some degree of risk sharing (coinsurance) with the insured lender. Typical MI coverages now range from 20% to 30% of total loan amount.

All MI premiums are prepaid and typically run 3% to 4% of the initial loan balance. Rates are based on a combination of LTV ratio, percent coverage, and term of loan. The mortgage instrument in Israel is unusually complex, with one particular feature unique among countries that offer mortgage insurance. Home loans in Israel normally are price-level adjusted mortgages (PLAMs), with outstanding balances periodically adjusted to an inflation index.

While the initial objective of Israel's new MI program was to improve access to home financing via lower initial downpayments, both government officials and private market participants also see the MI as a key to the development of a secondary mortgage market. Presently, interest in a secondary/MBS market in Israel, as in some other countries, relates less to any shortage of mortgage funding and more to lenders' desire to reduce capital costs by selling mortgage assets.

The MI regulation adopted by the Israeli commissioner of insurance is fashioned after the U.S. (Wisconsin) MI regulation, including provisions for risk-based capital, contingency reserves, prohibition against lender commissions, and monoline requirement.

Although growth in MI volume to date has been gradual, lenders have expressed increasing interest in the program and most have become active users.

South Africa

For the past decade, South Africa's Home Loan Guarantee Company has been working in its own unique way to broaden homeownership financing opportunities in that country. Unlike the other MI companies and government agencies described above, HLGC operates as an independent, non-profit, non-governmental organization (NGO). HLGC pays neither taxes nor dividends, with all retained earnings accruing to its reserves.

HLGC's loan guarantee programs are designed to offer private lenders a greater incentive to lend to lower-income homebuyers. Unique among programs discussed in this article, HLGC applies strict borrower income limits. The range of HLGC coverages has been expanded from mortgage-based guarantees to guarantees based upon the security of a borrower's pension fund and savings, which guarantees may also be provided to nonbank lenders, including housing associations offering "rent-to-own" financing.

For mortgage loans, HLGC guarantees up to 20% of the home purchase price. Prepaid premium rates run about 8% to 10% of the amount guaranteed, i.e., roughly 2% of the total insured loan amount.

Although HLGC has guaranteed nearly 50,000 home loans over its ten-year life, annual volume remains relatively low, with year 2000 volume amounting to US$41 million. HLGC has been able to secure reinsurance for its guarantee programs from Centre Re, a subsidiary of Zurich Re. This credit enhancement, together with conservative re-

serves, has helped earn HLGC an AA+ investment grade rating from Fitch IBCA and Duff & Phelps and to garner wide lender acceptance of its program.

Although an active secondary mortgage market has not yet developed in South Africa, HLGC envisions the investment grade rating of its guarantee program as a significant element of plans by Gateway Home Loans, Ltd. to become a secondary market intermediary.

MANDATES AND INCENTIVES—KEYS TO MI SUCCESS

As with any other enterprise, a successful MI program needs to achieve volume and growth, while limiting risk. Even if a country's market and regulatory environment is conducive to high-volume low-risk mortgage financing, the mortgage insurer faces this critical challenge: It must avert "adverse selection of risk," i.e., it must overcome the mortgage lender's natural inclination to choose—loan by loan—which cases to submit for insurance and which cases to "self-insure." After all, who more than the lender is likely to know which credits and which properties present significant incremental risks most in need of insurance against default-induced losses?

Yet, any risk-sharing relationship in which the insured is able to adversely select individual risks can be lethal to the insurer, and in particular to a mortgage default insurer. The challenge has two facets: risk management (controlling losses)) and building sufficient volume to operate efficiently and maintain reasonable premium rates.

An excellent example of this pitfall can be found in the U.S. mortgage insurers' failed effort in the 1970s to extend their early success in residential mortgage insurance to the insurance of mortgages and leases on commercial properties. A crucial and costly difference—overlooked—was the fact that the U.S. secondary market for home loans imposed a virtual mandate that all loans over 80% LTV be insured. This mandate served to restrain adverse selection of risk and to assure a large and growing volume of new insurance.

The commercial mortgage market had no such mandate. Commercial borrowers and lenders with sharp pencils could agree to purchase default insurance only in cases when the risk—uninsured—was perceived to be excessive. Commercial mortgage insurers (monoline affiliates of the residential insurers) suffered heavy losses and quickly withdrew from this incremental line of business.

Thirty years of international experience with residential mortgage insurance shows there to be two proven mechanisms which, once adopted, can largely resolve the MI's adverse risk selection challenge and establish a rational incentive for lenders to use mortgage insurance. These two mechanisms, both of which require supportive government and regulatory action, are:

1. Mandate the use of mortgage insurance by regulated lenders and investors on all loans that exceed some defined risk parameter—most commonly a designated loan-to-value ratio.

2. Grant some specified reduction in the amount of risk-based regulatory capital that a mortgage lender or investor must hold if a certain class of loans carries mortgage default insurance.

Let us look at how public policymakers have employed these two support mechanisms in countries where MI already is established.

United States

National housing legislation passed in 1970 contained a virtual mandate that all over-80% LTV conventional (non-government insured) loans sold to Fannie Mae or Freddie Mac had to carry insurance issued by a qualified MI firm, with coverage reducing exposure at least down to the 80% level.

Prior to their deregulation in the early 1980s, U.S. savings and loans were required to insure all loans over 90% LTV. Following deregulation and after promulgation of the Basle risk-based capital rules, mortgage loans over 80% LTV were assigned a 100% risk-based weighting, which weighting is reduced to 50% if such loans carry qualified mortgage insurance.

Canada

Canada employs both a strong incentive and a strong mandate for the use of mortgage insurance by regulated lenders. The Bank Act requires government or private insurance on all home loans originated in excess of 75% LTV, including those loans held in the bank's own portfolio. Furthermore, the Office of the Superintendent of Financial Institutions (OSFI) applies the Basle capital adequacy rules as a positive incentive to use MI. When loans over 75% LTV are insured by the government (CMHC) or the one qualified private insurer (GE), the risk weighting is reduced to zero and 5% respectively. (The government provides 90% backup coverage in the event of private insurer insolvency.)

Australia and New Zealand

Neither Australia nor New Zealand mandates the use of MI for high LTV ratio loans. However, the Australia Prudential Regulatory Authority (APRA) does confer a favorable 50% risk-based capital weighting on over-80% LTV loans if such loans are covered by qualified mortgage insurance, whereas such loans, uninsured, would be subject to a 100% risk weighting. In New Zealand, by contrast, no special risk-based capital treatment is accorded to home mort-

gage loans in recognition of MI protection. In fact, two of New Zealand's largest mortgage lenders do not use MI on their high ratio loans, whereas in Australia nearly all loans over 80% LTV are insured.

United Kingdom

The U.K. is a standout in that no special regulatory treatment has been accorded to lenders' use of MI, either in the form of a mandate or a capital-based incentive.

Hong Kong

Although there is a mandate for the use of MI on higher LTV ratio loans sold to HKMC, similar to the Fannie Mae-Freddie Mac mandate in the U.S., there is no regulatory capital relief directly attributable to the presence of MI protection. All qualified residential loans in Hong Kong qualify for favorable 50% risk-based capital treatment. While the sale of the loan effectively provides the selling lender 100% capital relief, the main motivator for the use of MI in the current market is the ability to increase lending volume by accessing the sizeable market demand for over-70% ratio loans.

Israel

There is no regulatory mandate for Israeli mortgage banks (which generally are bank-affiliated) to use MI, only the incentive of regulatory risk-based capital relief. The benchmark LTV for risk-based capital rules in Israel is 60% (analogous to the U.S. 80% LTV benchmark). The Bank of Israel's risk-based capital regulation imposes a 100% risk weight for loans over 60% LTV, unless a loan over 60% but not over 80% LTV is covered by a recognized MI down to at least 60% LTV, in which case the risk weighting is reduced to 50%. Although EMI-Ezer may now insure loans up to 90% LTV, loans over 80% LTV still are assigned a 100% risk weighting, even if insured. Market participants hope to see this regulatory capital relief eventually extended to 90% LTV with qualified MI coverage.

CURRENT ISSUES

Captive insurance/reinsurance Home mortgage lenders—most notably in the U.S—have identified an additional revenue opportunity via the formation of wholly-owned insurance or reinsurance entities which are able to collect MI premiums, either directly, or through reinsurance arrangements with established MI firms.

In the U.S., large mortgage lenders, restricted from earning agency commissions on MI, have in recent years been able to generate substantial revenues by negotiating captive reinsurance relationships with all the major MI firms. After nearly a decade of uninterrupted good times, MI profit opportunities have appeared highly attractive (especially when compared with the mortgage origination business), and risks quite low (see Figure 1). A growing share—now well over half of all U.S. MI business—is obtained through lender captive reinsurance, and the share of MI premium ceded to large lender-owned captives has reached up to 40%.

Among the issues that have been raised regarding captive insurance, including those by regulators and rating agencies, have been:

- Are the captives adequately capitalized for the risks assumed?
- Is there a substantive transfer of risk to justify the premiums paid?
- What capital relief, if any, should the MI firms receive on risk ceded to lender captives?
- Will the emergence of lender captives cause the cost of MI to increase?
- What are the longer-term financial implications for mortgage insurers?

In Canada, lender-owned captive reinsurers must meet stringent financial requirements in order to write MI, including: (1) a minimum AA investment grade rating, and (2) a regulatory cap on outstanding risk equal to 10% of the parent lender's consolidated capital.

In Australia, lender-owned captive insurers have played a limited role for some years as direct MI writers. Lacking sufficiently strong investment grade ratings and facing diseconomies of scale, Australian MI captives' popularity has been waning in the face of the growing influence of securitization and evolving international risk-based capital rules.

In the U.K., the situation regarding MI captives is a bit different. There, captive mortgage insurers have been formed to provide coverage directly for their lender-owners, in lieu of purchasing MI from an independent provider. The lender's insurance affiliate books the mortgage insurance fee income, including certain tax advantages that, until recently, have made the lenders' offshore MI captives especially attractive. One issue regarding MI captives in the U.K. is whether they are sufficiently capitalized—without formal capital support agreements from their parent lending institutions—to provide the level of credit enhancement needed to support highly rated mortgage-backed securities.

Challenging the MI mandate Although the decision as to which MI firm will be used remains highly competitive in the primary U.S. mortgage market, the question about whether MI is to be used for high LTV loans sold in the secondary market has become a rather contentious issue. As noted earlier, national housing legislation passed in 1970 mandated the use of MI for high LTV conventional loans sold to Freddie Mac or Fannie Mae, which at that time were small, startup programs. Since then, these two agencies have grown to dominate the secondary mortgage market to the point

where most MI today is placed on loans that are sold to, and securitized by, Freddie Mac and Fannie Mae. The private MI industry in effect serves as a "first line of defense" against cyclical or depression-level losses by these two government-sponsored enterprises.

The MI industry views this 30-year-old legislative mandate as a time-tested component of the nation's housing finance system and essential to MI's continuing strength—including serving as a key defense against adverse risk selection. Freddie Mac, on the other hand, has asked Congress to eliminate the longstanding MI requirement on high-LTV ratio loans and to give the GSEs the discretion to use alternative forms of credit enhancement. While eliminating the mandated use of MI would increase the GSEs' revenues, some observers believe that catastrophic risk exposure to the GSEs—and, by implication, to the U.S.government—would also increase.

Allowing privately insured loans in government-guaranteed pools This question, of course, can arise only in countries where private MI and government guarantors co-exist, namely in the U.S. and Canada. Interestingly, the situation differs between the two countries. In Canada, where CMHC issues mortgage-backed securities carrying a government guarantee of both monthly cashflow and ultimate repayment, the mortgage pools that support these MBS issues are permitted to contain high-ratio mortgages insured by both CMHC and—effective in 2001—its private MI counterpart, GE. CMHC has been issuing MBS for 15 years, and for most of that time it also has provided catastrophic risk coverage to investors in the event of the MI insolvency of its private MI counterpart.

In the U.S., Ginnie Mae serves as the government's MBS guarantor, but over its 33-year life, only government insured loans have been eligible for inclusion in Ginnie Mae-backed mortgage pools. The U.S. Congress currently is considering legislation that would permit, for the first time, certain privately insured loans to be qualified for inclusion in Ginnie Mae pools. Those loans would carry a substantial top layer of private MI coverage, with the balance covered by the FHA.

"Down-market underwriting" Mortgage insurers are participating in an overall market trend toward underwriting higher risk home loans. There are two, sometimes overlapping facets to this trend:

- "Affordable housing" outreach to previously underserved groups, including lower-income, minority, immigrant, and inner-city households; and

- Borrowers with blemished credit histories, generally referred to as "Alt-A" (slightly blemished) or "subprime" (significantly blemished). Lender and MI actions to address the increased risks, depending on the circumstances, include mandated borrower education and counseling, stipulating more restrictive LTV limits and charging higher rates (risk-based pricing). Government regulators and consumer groups, along with lenders and mortgage insurers in the U.S., are sensitive to concerns about potential underwriting and pricing discrimination with regard to minority group borrowers. Because of the paucity of applicable experience data, full-cycle risk performance remains uncertain.

In developing countries, "down-market underwriting" may be just as important an objective as higher LTVs when considering the potential contribution that MI might provide. Until such efforts have a proven track record, government or other outside support may be needed to achieve desired results. This has been the experience, not only with government-sponsored programs in the developed economies, including the U.S., Canada and the U.K., but also more recently with the Home Loan Guarantee Company in South Africa.

Consumer issues Two consumer issues of note have arisen in recent years relating to mortgage insurance. Both issues arose from the fact that, while most MI is purchased by the lender and the lender is the named policy beneficiary, the cost of MI premiums typically is passed through to the borrower—along with the costs of other loan-related services, including the property valuation and borrower credit report. These two issues are:

- Should borrowers have the right to terminate their MI premium payments when their LTV ratio has been reduced to a level where MI is not normally required?

- Is the borrower in any way a "beneficiary" of the MI coverage, given that the borrower bears the cost of MI?

Both of these issues have been effectively resolved in the countries where they arose.

The MI termination issue occurred in the U.S. After considerable media attention and public debate, Congress passed—with MI industry support—special legislation, effective in July 1999, that will require automatic termination of borrower-paid MI after a non-delinquent high LTV loan balance has been reduced to 78% LTV.

The borrower-as-beneficiary MI issue arose in several countries, including the U.K., Australia and New Zealand and, to a lesser extent, the U.S. This issue followed in each instance a period of higher-than-average claims. Some mortgage insurers asserted "subrogation" rights, whereby they could seek to recover from defaulting borrowers "deficiency" losses on claims paid. Such recovery efforts—always restricted in scope—were technically permissible. But they also

proved controversial, especially given the misunderstanding among the general public that MI—while affording the borrower the benefit of access to otherwise unavailable financing—is insurance designed to protect the lender against losses arising from borrower default.

One notable result has been that in Australia and New Zealand the MI industry has changed the generic name of its product to Lenders Mortgage Insurance (LMI). In the U.S. and the U.K., where the "Lenders MI" label was never adopted, court decisions eventually confirmed the lender's sole status as MI beneficiary, notwithstanding the pass-through of MI premium charges to the borrower.

Technology U.S. mortgage insurance firms have invested heavily in leading edge technology in support of both customer service interface and strengthened risk management. The lender application and MI approval process has evolved from mail to fax to electronic data transfer, including via the Internet. At the same time, delegated underwriting grew during the 1990s and now accounts for about half of new MI business volume. With delegated underwriting, the lender conveys loan level data to the MI periodically in batch electronic form after insurance has been placed. The MI then audits sample loan files on-site.

Technology has also enabled the MI industry to advance from manual (rules-based and human judgment) underwriting to automated (predictor risk model-driven) underwriting. Two key factors, in addition to the growing power of communications technology have enabled this advance to be achieved:

- The MI firms, as well as Fannie Mae and Freddie Mac, have amassed extensive historical loan level databases that they have employed, in conjunction with external economic and housing market data, to produce powerful models to predict mortgage default and termination rates.
- FICO credit scores based upon consumer credit reports have been integrated with the mortgage performance models to produce yet more powerful predictor scores that serve as the engines for both the MI and the GSE automated underwriting systems. Most underwriting at MI firms today is done via automated underwriting systems.

At the "back end" of the business, both the mortgage insurers and GSEs have gone beyond electronic data interchange; they have built behavioral models, again based upon massive loan level experience data, that predict which delinquent borrowers present a greater or lesser probability of foreclosure and loss. This powerful technology enables collections personnel and resources to be directed more efficiently to the highest risk cases.

Private network and Internet access to other third-party service providers, beginning with the credit reporting agencies, expanding to appraisers and, most recently to title insurers complements the lender-MI interface and, more broadly, the whole automated underwriting process. These advances are reducing the time and cost of originating a home mortgage, while improving credit risk management.

CONCLUSIONS

The time is ripe for at least some developing countries to consider whether mortgage default insurance would contribute toward the achievement of worthwhile housing goals. A number of the U.S. mortgage insurance firms are seeking opportunities to work with both public and private housing finance organizations in other countries. Partnering can take many forms, from technology and risk management support, to reinsurance, to direct ownership. Canada's CMHC also is actively seeking to support overseas efforts to institute new MI programs under the Canadian model.

Local needs and circumstances must drive product design. Poland offers an interesting recent example: A private multiple lines insurance company in Warsaw, recognizing the lending risks associated with a poorly functioning mortgage and title registration system, designed a special policy protecting mortgage lenders against loss during the period from loan closing to the time of official registration of the mortgage and title to the property (reportedly six to 18 months). This was neither mortgage nor title insurance as these products are understood in more developed markets; but it is an example of private enterprise discerning a mortgage market risk and responding by offering an insurance product to address that need. Furthermore, it wasn't long before other Polish insurance carriers were offering lenders a comparable product at a lower competitive premium rate!

All mortgage insurers require good data, including:

- Loan level data in sufficient detail to evaluate risk and predict future defaults based upon historical portfolio experience together with external economic data.
- Data on home sales and property characteristics sufficient to support home valuations and to understand home price movements in local markets.
- Borrower credit information sufficient to judge the probability of loan repayment and, ideally, to enable the development of systems for the scoring of loan quality.

Extensive high quality data—especially loan level data—that mortgage insurers in devel-

oped markets routinely rely upon often is not available in developing markets. Competing lenders who wish to benefit from the introduction of MI may need to cooperate in helping to establish common standards for data collection to manage, price and insure mortgage credit risk.

Finally, in order for mortgage insurance to be successful, government should adopt supportive policies including rational lender incentives and/or mandates for the appropriate lender use of MI to manage credit risk. Depending on the degree of economic stability and the specific credit risks that MI will need to assume, government also should consider whether to provide some type of catastrophic risk backup to private MI providers or, if private investment capital is not forthcoming, whether to introduce MI directly under government auspices.

Should policymakers decide upon government-sponsored MI, such a program should be designed so as to not present unfair or unreasonable competition to an MI that is launched subsequently with private risk capital—especially with regard to the pricing of the product and the rules regarding its use. It may be advisable, moreover, when creating a government-sponsored MI program, to include at the outset a definitive plan for eventual privatization.

A growing number of countries are demonstrating that mortgage default insurance offers a workable and versatile credit enhancement to support expanded homeownership.

REFERENCES

Canada Mortgage and Housing Corporation, *1999 Annual Report*

Capone Jr., Charles A. "Credit Risk, Capital and Federal Housing Administration Mortgage Insurance," *Journal of Housing Research,* Vol.11, Issue 2 (2000)

CGU Lenders Mortgage Insurance Limited, *1999 Annual Review*

Credit Suisse First Boston Corporation, *Australian Mortgages: Down-Under-Valued,* June 2000

Deloitte & Touche, *Actuarial Review of the Federal Housing Administration's Mutual Mortgage Insurance Fund*

EMI-Ezer Mortgage Insurance Company, Ltd., *1999 Annual Report (Israel)*

Fitch IBCA Financial Institutions, Insurance, and Structured Finance reports

—*EMI-Ezer Mortgage Insurance Company, Ltd.*, January 29, 1999

—*Mortgage Insurance in Australia,* March 18, 1999

—*Offshore Investors Guide to Australian Residential Mortgages,* 17 April, 2000

—*CGU Lenders Mortgage Insurance Ltd.,* July 10, 2000

—*Home Loan Guarantee Company,* November, 1999; updated May 29, 2001

Home Loan Guarantee Company, *2000 Annual Report* (S.Africa)

Hong Kong Mortgage Corporation, *2000 Annual Report*

Inside Mortgage Finance, April 27, May 11, June 1, and July 27, 2001 issues

International Union for Housing Finance, *International Housing Finance Sourcebook 2000*

J P Morgan, *Ratings Developments for Mortgage Insurers: Minimal Impact on Australian RMBS,* October, 2000

Liu, David, "Exporting Mortgage Beyond the United States," *Housing Finance International,* June 2000

"More Falling Behind on Mortgage Payments," *The New York Times,* June 12, 2001

Mortgage Insurance Companies of America (MICA), *Annual Fact Books, 1981–2001*

Mortgage Insurance Companies of America, *OFHEO's Risk-Based Capital Regulation: Consideration of Mortgage Credit Enhancement Treatment and Other Issues Related to the GSE's Risk-Based Capital,* March 10, 2000

Mortgage Insurance Industry Outlook 2000-2001: Descending from the Peak, Insurance Ratings Service Commentary, Standard & Poor's, January 27, 2001

Salomon Smith Barney, *The Mortgage Market in Australia,* September, 2000