Mortgage default insurance (MI) supports housing finance and macro-economic goals for a growing number of housing finance systems, both in mature and still-developing economies.

Starting with a historical perspective, this chapter will help public- and private-sector officials who may be considering whether MI may have some useful role to play in their country’s housing markets, and, if so, what options for implementation may be more or less attractive to pursue.

Drawing upon examples from a number of diverse countries, we shall look in particular at prerequisite conditions for MI to succeed, key program features, regulatory and capital issues, credit-risk management tools, consumer issues, technology, forms of sponsorship, and options for public-private collaboration. The chapter ends with examples of adverse experience in several countries that may suggest ways to avoid similar pitfalls elsewhere.

1. Also known in certain countries as mortgage credit insurance, mortgage guaranty insurance, mortgage indemnity insurance, and lenders’ mortgage insurance. This chapter’s discussion of MI is directed at mortgage lending secured by individual, primarily owner-occupied, residential dwellings. Much more limited MI programs also have been used in several countries for income-producing residential and commercial properties.
Definition and Unique Features of MI

Stated simply, MI protects mortgage lenders and investors against loss by reason of borrower default. Such losses arise when the realizable value of the collateral property securing the mortgage is insufficient to repay in full the borrowers’ outstanding debt.

Whether government or privately sponsored, MI has several unique features relative to other forms of insurance:

- The nature of the hazard covered—economic catastrophe.
- The long duration of the insured risk, that is, the full term or life of each mortgage loan.
- The unusually long cycle of risk, which follows general economic cycles.
- Risk performance that is uniquely dependent upon government economic policies.

Because of the long-term need to protect against economic catastrophe, MI requires special analytic and regulatory tools, even in countries where prerequisite conditions for MI are favorable.

Purposes of MI

MI can serve to meet a number of worthy public policy goals, including:

- expanding homeownership via lower down-payment financing, including to households of limited means;
- developing mortgage and capital markets by building investor confidence; and
- strengthening credit risk management in the banking system.

While the predominant reason given at present for individual countries’ use of MI is to reduce the amount of cash required to buy a home, there are significant exceptions, both now and historically. One of the leading objectives of public MI programs both in the United States and Canada four
decades ago was to set improved physical standards for new and existing housing. While that goal has largely been achieved in these countries, it is one that should not be overlooked in less affluent areas. In some economies where lenders are reluctant to make any home mortgage loans, MI can be used to jump-start the process. Government-sponsored MI in particular may be directed at unserved or underserved market segments defined in ways other than just inability to accumulate cash savings.

Some developing countries faced with serious market impediments, mainly relating to foreclosure proceedings and collateral recovery, have considered introducing MI so that lenders might avoid these problems by shifting collateral recovery risks and costs to a third-party insurer, at least until needed market reforms are implemented. MI is not well suited to solving this particular problem.

Compared with direct subsidies, publicly sponsored MI may be a more efficient, off-budget policy tool for expanding residential mortgage markets, but only where an emerging economy’s underlying primary market mechanisms are already working reasonably well.

Countries that Have MI Today

MI in some form is available for residential lenders in over two dozen countries (see table 13.1). Most of these programs are government sponsored and are of fairly recent origin.

The following discussion focuses mainly on programs that have insurance like features, such as risk-based premiums and capital reserves. Where public sponsorship is involved, a government’s ability to structure and run its MI program according to long-established insurance and commercial principles has been, and will continue to be, a key success factor, both for long-term viability and for achieving social and public policy objectives.

Prerequisite Conditions for MI Success

In order for mortgage default insurance to help a country advance toward its macroeconomic and housing policy goals, its primary housing markets
Table 13.1. Selected Countries with MI Programs, 2008

<table>
<thead>
<tr>
<th>Country</th>
<th>Year of origin</th>
<th>Sponsorship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>2000</td>
<td>Public</td>
</tr>
<tr>
<td>Australia</td>
<td>1965</td>
<td>Private*</td>
</tr>
<tr>
<td>Belgium</td>
<td>2004</td>
<td>Public (regional government)</td>
</tr>
<tr>
<td>Canada</td>
<td>1954 and 1963</td>
<td>Public and private</td>
</tr>
<tr>
<td>Colombia</td>
<td>2004</td>
<td>Public</td>
</tr>
<tr>
<td>Finland</td>
<td>mid-1990s</td>
<td>Public</td>
</tr>
<tr>
<td>France</td>
<td>1993</td>
<td>Public-private combination</td>
</tr>
<tr>
<td>Guatemala</td>
<td>1961</td>
<td>Public</td>
</tr>
<tr>
<td>Hong Kong, China</td>
<td>1999</td>
<td>Public-private reinsurance</td>
</tr>
<tr>
<td>Iceland</td>
<td></td>
<td>Public</td>
</tr>
<tr>
<td>India</td>
<td>ongoing project</td>
<td>Public-private combination</td>
</tr>
<tr>
<td>Ireland</td>
<td>1999</td>
<td>Private</td>
</tr>
<tr>
<td>Israel</td>
<td>1998</td>
<td>Private</td>
</tr>
<tr>
<td>Italy</td>
<td>2003</td>
<td>Private</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>2004</td>
<td>Public</td>
</tr>
<tr>
<td>Latvia</td>
<td>** Public</td>
<td>Public</td>
</tr>
<tr>
<td>Lithuania</td>
<td>1999</td>
<td>Public</td>
</tr>
<tr>
<td>Mali</td>
<td>1998</td>
<td>Public-private combination</td>
</tr>
<tr>
<td>Mexico</td>
<td>2004 and 2007</td>
<td>Public and private</td>
</tr>
<tr>
<td>Morocco</td>
<td>2004</td>
<td>Public</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1997 and 2004</td>
<td>Private and public</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1957</td>
<td>Public-private combination</td>
</tr>
<tr>
<td>Peru</td>
<td>1999</td>
<td>Public</td>
</tr>
<tr>
<td>The Philippines</td>
<td>1950</td>
<td>Public</td>
</tr>
<tr>
<td>Portugal</td>
<td>2003</td>
<td>Private</td>
</tr>
<tr>
<td>South Africa</td>
<td>1989</td>
<td>NGO/private reinsurance</td>
</tr>
<tr>
<td>Spain</td>
<td>2002</td>
<td>Private</td>
</tr>
<tr>
<td>Sweden</td>
<td>1992</td>
<td>Public and private</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>pre-1970</td>
<td>Private</td>
</tr>
<tr>
<td>United States</td>
<td>1934, 1956, and 1987</td>
<td>Federal, private, and state</td>
</tr>
<tr>
<td>West Bank and Gaza</td>
<td>2000</td>
<td>Public</td>
</tr>
</tbody>
</table>

Sources: MI program surveys conducted by author.
first must function reasonably well. Otherwise, not only will the cost of MI be excessive, its presence might actually mask the urgent need for primary market reforms.

Table 13.2 provides a checklist of prerequisite conditions for MI success.

Each factor above should be examined for any specific shortcoming that would impede the ability of MI to function as intended, or would raise its cost prohibitively. Some of these factors (for example, collateral recovery) are more critical than others (for example, industry associations).

An added consideration, thought not an absolute prerequisite, is a country’s geographical size and diversity. “The law of large numbers” and the need to diversify risk are universal underpinnings for all insurance lines, including MI. A large, populous country having many far-flung urban and regional markets, such as the United States or India, can better avail itself of MI’s potential benefits than can a geographically compact nation with one or two dominant urban centers. The latter type of country, when contemplating MI, will face both greater overall risks and diseconomies of scale.

Experience across numerous countries suggests that the threshold of initial feasibility for government to offer MI is lower than for private enterprise. For example, a private firm will need a proper regulatory framework and some mortgage experience (actuarial) data in order to launch MI in a country where none has existed theretofore, whereas a public start-up program may not require so rigorous a foundation. Accordingly, where private MI exists

<table>
<thead>
<tr>
<th>Regulation and legal</th>
<th>Primary mortgage market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laws and judicial system (esp. foreclosure, collateral recovery)</td>
<td>Banks’ lending and loan servicing practices</td>
</tr>
<tr>
<td>Mortgage and title registration</td>
<td>Insurance product acceptance</td>
</tr>
<tr>
<td>Bank/lending regulation</td>
<td>Transaction costs (transfer, regulation)</td>
</tr>
<tr>
<td>Insurance regulation</td>
<td>Property taxation</td>
</tr>
<tr>
<td>Mortgage insurance regulation</td>
<td>Property valuation/appraisal practices</td>
</tr>
<tr>
<td></td>
<td>Condominium governance and maintenance</td>
</tr>
<tr>
<td></td>
<td>Industry associations, standards (lenders, builders, sales agents)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Information</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing markets, sales price information</td>
<td>Economic policies fostering stability, personal savings</td>
</tr>
<tr>
<td>Borrower credit information (credit bureau)</td>
<td>Government, political support</td>
</tr>
<tr>
<td>Standard definitions—residential lending</td>
<td>Citizens’ attitudes toward homeownership, debt repayment</td>
</tr>
<tr>
<td>Mortgage portfolio experience/performance</td>
<td>Pricing model data requirements</td>
</tr>
</tbody>
</table>

Source: Author’s own research.
today, almost invariably a publicly sponsored program has preceded it (for example, United States, Canada, and Australia).

Even emerging economies that appear to meet prerequisite conditions for adopting MI should not view MI as a panacea. Table 13.1 shows that most of the numerous MI programs operating in developing markets are of recent origin and have not undergone the test of time and economic stress.

**Key Program Characteristics**

Among the many variables that drive the risk of home mortgage default and loss, loan-to-value (LTV) ratio (a proxy for borrower equity) has predominated, both historically and across international boundaries (table 13.3). So strong is this correlation that some emerging economies—and historically even the United States—have imposed regulatory LTV limits on bank lending or loans eligible to back mortgage securities.

Countries that offer MI use it predominantly to induce lenders to make higher-risk, higher-LTV-ratio loans, thereby reducing the amount of cash savings that borrowers must accumulate to purchase their first home. Maximum LTV ratio—insured versus uninsured—in any given country, is, therefore, the first MI program feature to consider.

**Table 13.3. LTV Correlates Strongly with Default Risk and Losses**

<table>
<thead>
<tr>
<th>LTV ranges (percent)</th>
<th>Default probability</th>
<th>Loss severity</th>
</tr>
</thead>
<tbody>
<tr>
<td>50.01–60</td>
<td>0.26</td>
<td>0.15</td>
</tr>
<tr>
<td>60.01–65</td>
<td>0.62</td>
<td>0.40</td>
</tr>
<tr>
<td>65.01–70</td>
<td>0.73</td>
<td>0.63</td>
</tr>
<tr>
<td>70.01–75</td>
<td>0.84</td>
<td>0.83</td>
</tr>
<tr>
<td>75.01–80</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>80.01–85</td>
<td>1.20</td>
<td>1.15</td>
</tr>
<tr>
<td>85.01–90</td>
<td>1.48</td>
<td>1.29</td>
</tr>
<tr>
<td>90.01–95</td>
<td>1.88</td>
<td>1.41</td>
</tr>
<tr>
<td>95.01–98</td>
<td>2.31</td>
<td>1.46</td>
</tr>
<tr>
<td>98.01–100</td>
<td>2.69</td>
<td>1.52</td>
</tr>
</tbody>
</table>

Source: Fitch IBCA 1998. Model assumptions applied to BBB-rated MBS.

Australia, Germany, Netherlands, Spain, United Kingdom, and United States
In most countries, at the time MI is initiated, mortgage lenders generally are willing to lend without insurance up to some benchmark LTV ratio, beyond which they feel overexposed to loss in the event of borrower default. While this LTV benchmark varies from country to country and also may increase over time, the introduction of MI covering at least the top layer of risk exposure above the lenders’ benchmark LTV can induce lenders to raise their top LTV up to the insurer’s higher limit. Insured LTV limits, likewise, will vary from country to country, and tend to increase over time as satisfactory experience unfolds.

A reasonable “rule of thumb” where MI is new to a market may be initially to set the maximum insurable LTV at a level where it reduces the required borrower down payment by one-half. Hong Kong and Kazakhstan, for example, used MI to cut the minimum borrower down payment from 30 percent without MI to 15 percent insured. U.S. private insurers originally introduced MI that lowered minimum down payments from 20 percent to 10 percent. Israel’s new MI program permitted borrowers to buy homes with 20 percent down, compared with 40 percent previously. Once a successful underwriting record could be demonstrated, the United States and Hong Kong programs, for example, then further reduced their minimum down payments—the United States in several increments over 30 years. Until now, some 100 percent of LTV loans are insurable.

**Individual Loan Coverage**

How much coverage against losses should MI provide for individual home loans? Two principles should apply in making this important decision regarding program design: (1) to avoid “moral hazard” and to control catastrophic losses, the MI provider should share some risk with the originating lender; and (2) the lender’s likely collateral recovery under adverse conditions should be estimated and need not be insured. Where MI is used as credit enhancement for MBSs, the amount of loan level coverage needs to fulfill rating agency requirements. Further, if a country’s risk-based capital

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2. “Moral hazard” refers to a party that acquires insurance cover whose behavior changes as a result of the curtailed exposure to loss in such a way as to increase the risk that is being insured.
regulations (discussed further below) bestow a lender benefit on those who use qualified MI, the amount of coverage must be sufficient to earn such favorable treatment.

Admittedly, some MI programs that provide 100 percent loan-level coverage, both government and private, have succeeded. Among these are the Federal Housing Authority (United States) and public and private MI programs in Canada and Australia; however, many others, both old and new, have benefited from risk sharing (“coinsurance”) with their lender-policyholders. These include the U.S. private and state-level public insurers, as well as programs in Hong Kong, South Africa, Israel, and Lithuania (the latter of which changed its program from 100 to 25 percent coverage in 2002). New MI programs in Kazakhstan and Mexico also are designed with partial (top-down) loan coverage.

**Premium Rates**

Establishing an MI premium rate structure appropriate to any national market entails several considerations. Most important, of course, is to set rates at a level that are both sufficient to cover future losses, including under severe economic stress, but not so high as to impair affordability.

In most countries with newly developing mortgage markets, there is little or no usable mortgage performance history to provide the type of data required to project, even roughly, future default frequency and loss severity. Where policy makers conclude that MI will bring near-term benefits to a country’s housing and mortgage markets, they need not await the time when such data becomes available. As long as the national economy and financial and housing markets show reasonable stability, a suitable MI premium can be adopted to enable a government-sponsored program to get under way. The initial MI premium should be set conservatively (it can always be reduced later on), based upon benchmark foreign-experience data, adjusted to reflect potentially higher risks and volatility associated with the domestic market. This approach recently was used in Kazakhstan and, to a lesser degree, in Mexico, where some local data existed, but was insufficiently robust for rate-making purposes.
Elaborate pricing models are not needed to create a public MI program. It will normally suffice to apply conservative rates at the outset, with later refinements as experience develops. This data then can also be held out to attract private, including foreign, MI risk capital.

The inclination (unique to a government-sponsored MI program) to set premium rates at levels insufficient to cover future losses—in order to improve affordability—should be resisted. Rather than risk the future insolvency of a public MI fund, given the political and fiscal pain such a failure would cause, it is far better to target transparent needs-based subsidies—including MI premium subsidies—to work in conjunction with an actuarially sound MI fund. An example of this enlightened approach is found in Lithuania, where many of the less-indebted middle-income country’s borrowers are income qualified to receive separately budgeted MI premium subsidies, thereby boosting affordability.

The major variables that determine default frequency or loss given default (severity) also drive premium rates, including, most notably, the following:

- Loan-to-value ratio
- Loan term
- Percent of insurance coverage (for programs that offer different coverages)
- Type of mortgage instrument (for example, fixed versus variable rate or payment)
- Owner-occupation versus investor-owned rental unit

A detailed exposition of MI pricing methodology is beyond the scope of this chapter. We shall note only that MI pricing does entail economic stress modeling to ensure the buildup and retention of capital reserves sufficient to withstand abnormally high default and loss rates associated with severe national economic adversity.

A second programmatic pricing decision to be made, after overall rate adequacy and risk classifications have been established, is how to structure the actual MI premium payment. The lender, as beneficiary, purchases the MI coverage, but—one way or another—the cost of the MI coverage must be passed through to the borrower (who also “benefits” by making a lower down payment). Among the premium payment options are the following:
- Add the cost of MI to the loan interest rate
- Charge MI as a separate add-on cost, monthly or annually
- Charge the full cost of MI as an up-front lump sum, due at loan closing
- Add the full up-front MI premium charge to the initial loan amount, thereby financing the cost over the loan life (but also increasing the initial LTV ratio)

Each of these options has advantages and disadvantages with varying degrees of transparency. In a developed market, the ideal is for the MI provider to offer as many payment options as the market may have reason to use. For a start-up situation in a less-developed market, the up-front lump sum charge, “capitalized” as part of the beginning loan amount, may be preferable. It is the most affordable for the borrower; it provides maximum funding to the insurer’s loss reserves; and it is administratively simple. Whatever payment options may be offered, the lender should clearly disclose this cost to the consumer.

Eligible Loans

All MI programs, both public and private, define and restrict what is an insurable loan. Limits can relate to property type (for example, individual dwelling units versus entire apartment buildings); loan purpose (for example, home purchase versus home construction or improvement); or mortgage instrument terms (for example, fully amortizing loans versus loans with lump sum due dates) and first lien mortgages versus junior or subordinated loans. Table 13.4 below reveals some variety among country MI programs regarding types of insurable residential loans.

As discussed in the “lessons learned” section later in this chapter, efforts to extend MI beyond the insurance of mortgage loans secured by individual, mainly owner-occupied dwelling units—even to financings that on the surface seem quite closely related—has sometimes failed at considerable cost.
Another key feature of all MI programs relates to the method by which risks are assumed, which typically will be stipulated contractually with the insured lender. This program feature entails not only risk management, but also marketing, information technology, and cost-efficiency aspects, each of which needs to be weighed and balanced in designing and implementing an MI program.

There are basically four types of underwriting methods available to an MI provider:
• Substantial participation with the insured lender in the direct underwriting of the loan
• Underwriting review and prior approval of loan documentation generated by the lender
• Electronic data transfer and “automated underwriting” (AU) using experience-based decision model, with human review of “marginal” cases identified by the “AU” decision program
• Authority to bind the MI coverage on individual loans delegated to the lender subject to the lender’s compliance with agreed-upon standards and procedures and periodic reporting

Few, if any, examples of the first of the above methods is found today, although the U.S. government’s FHA program operated in this fashion for many years, even to the extent that the entire property valuation process was run by the FHA independent of the lender. This alternative, though perhaps the safest, is simply too cumbersome and costly to be accepted in any competitive marketplace.

Review underwriting of individual loan documents—either selected documents or the full loan package—strikes a balance between the need to screen risks adequately versus cost and efficiency concerns. Such “review underwriting” was for many years the dominant process for MI underwriting in most advanced markets, including the United States, Canada, and Australia—first via mail, later by fax. The process worked successfully, with same- or next-day response meeting market needs.

Automated underwriting now has largely supplanted MI review of loan documents in most advanced markets where credit and loan experience databases are sufficiently rich to validate the decision models that underpin automated underwriting systems. The efficiency of this underwriting method has reduced MI costs considerably, with no apparent weakening of risk management until the market turmoil that started in 2007, which generated high delinquencies in insured portfolios such as the “Alt A” segment (borrowers with decent credit records but undocumented income), or 100 percent LTV loans with no borrower equity. In the United States, another strong impetus for this advance has been the dominant role of Fannie Mae and Freddie Mac both as providers of MBS capital to insured lenders, but also as standard set-
ters for all mortgage-market participants in terms of both automated underwriting and information technology.

Underwriting authority delegated by the MI provider to the lender is a common, though far from universal, practice in both developing and advanced markets. Among the programs outside North America that employ delegated underwriting are the National Housing Credit Guarantee Board (BKN) in Sweden and Home Loan Guaranty Company (HLGC) in South Africa, while Hong Kong is just beginning to test it out. The simplicity and efficiency of this method of risk assumption makes it appear a very attractive option for both the lender and the MI provider; however, this approach also entails three potential disadvantages:

First, the MI that delegates its underwriting function to the insured lender may find that it has assumed greater risks than anticipated.

Second, the “value added” that secondary mortgage investors may perceive from an independent third-party review of pooled mortgage loans by the insurer may be diluted.

Third, the lender who assumes delegated underwriting authority may find later that the insurer will find “technical violations” of the delegated underwriting agreement as an excuse to deny the payment of claims. The potential for such contention can increase with the frequency of claims submitted.

One reasonable approach to delegated underwriting can be for the MI provider to award this benefit to individual insured lenders that demonstrate their commitment and ability to produce quality loans. Of course, the supporting technology needs to be in place to assure timely monitoring, and regular on-site compliance audits are essential.

In any event, the underwriting method(s) employed over time in any country should balance the inevitable needs for adequate information and control, prompt and cost-efficient service, and technology platforms available to both the MI provider and its users.

Public MI programs typically—though not always—have incorporated additional program features that emphasize their social and public policy goals, as discussed in further detail in the following section.
Meeting Social Objectives

Government MI programs in particular need to justify themselves, not only in terms of being financially self-sustaining but in also stimulating more homeownership and lending opportunities. Usually they are also expected to serve a targeted segment of the population that may otherwise not have access to home financing. In developing economies such groups most often include both lower-income families and the “informal sector,” where non-salary incomes tend to be irregular and hard to document. Government-sponsored MI, though not a direct housing subsidy, should not be expected to serve the very wealthy or to help finance luxury housing.

Typically, there are three simple means, one or more of which government MI uses to target its benefits to low-, moderate- and middle-income households. These methods are insurable limits expressed in terms of (1) loan amount, (2) home price, or (3) household income. Of these, household income limits tend to be the most restrictive, while loan amount limits are the most permissive. Even with insurable loan limits, for example, a wealthy borrower could still purchase a very expensive home.

While social goals for most public MI programs may be most directly addressed with some form of household income limits for eligible loans, as noted above conditions in developing markets may not permit many borrower incomes to be reliably documented. Of the above-noted targeting methods, loan amount is the most easily verified. Any such limit, however, ought to reach well up into the middle of the market so as to create a broad base of demand and to include a relatively low-risk segment of the market in order to strengthen credit risk management. As a practical matter, any public MI program with household income limits probably does not need either insurable loan or home price ceilings.

Any subsidies associated with a public MI program are best designed to be both transparent and distinct. That is, separately budgeted funds may be used to subsidize lower-income borrowers’ MI premiums, to directly subsidize a portion of the required cash deposit, or even to temporarily “buy down” or subsidize the borrower’s interest payments. But the MI program’s premium rates should be fully loaded, and reserves fully funded, to cover all future losses and ongoing program costs. Such precautions will help to avoid the political
backlash that might well accompany future calls for the government to “bail out” a depleted MI fund facing large immediate and future claims obligations.

Lithuania's MI program is unusual in this regard. About one-half of insured borrowers—those below a set income threshold—currently benefit from significant MI premium subsidies. In the United States, lower-income borrowers covered under the Commonwealth of Massachusetts' MI program receive a 20 percent MI premium discount, but this benefit is achieved via an internal cross-subsidy from higher-income borrowers covered under the program. The Philippines' Home Guaranty Corporation program employs similar cross-subsidies to support qualified “social housing.”

Another type of subsidy—cross-subsidies—can play a useful role in some countries’ MI programs. Rather than classifying premium rates according to variations in credit risk, some countries intentionally cross-subsidize among classes of insured borrowers, either by applying a uniform rate (historical policy of the FHA in the United States) or by applying lower rates to higher-risk classes (the Philippines). In both instances, the public-purpose goal is to secure for borrowers of lesser means access to home financing on terms at least equal to the rest of the market.

To the extent that premiums are cross-subsidized or other means are employed to serve borrowers at the lower end of the income spectrum, to compensate for the added risk and remain viable, the public MI must adopt suitable alternative underwriting and risk management standards (for example, rigorous homeownership and credit counseling).

Special MI Products for Mortgage-Backed Securities (MBS)/Structured Finance

For the primary home mortgage market, nearly all MI programs provide, that is, “certify,” coverage for individual home loans, most often with partial risk coverage. Although 100 percent coverage tends to use insurance capital inefficiently and is susceptible to moral hazard, such coverage does translate easily from the primary to the secondary and MBS market, where investors have no appetite for assuming unfamiliar risks. Modern-era MI programs that provide primary lenders less than 100 percent loan-level
coverage can provide two types of companion products when the need arises to satisfy MBS investors, as well as rating agencies upon whom such investors will rely.

**Mortgage Pool Insurance**

Mortgage pool insurance provides a specially designed second-tier MI coverage for institutional MBS investors who are unfamiliar with mortgage risks and who wish to rely on investment ratings, including third-party credit enhancements. Mortgage pool insurance typically provides 100 percent cover for individual defaults in an MBS mortgage pool. Pool coverage, however, is subject to a stipulated aggregate loss limit for the overall pool. Normally, the rating agency, using stress-test modeling, will establish the pool policy’s required aggregate loss limit (“stop loss”), a percentage that will depend upon both the risk characteristics of the particular mortgage pool and the desired rating for the security that is backed by the insured loan pool.

**Timely Payment and Cash-flow Protection**

Timely payment and cash-flow protection often will be needed on an investment-grade-rated MBS issue as an adjunct to mortgage default insurance. Security holders expect not only ultimate recovery of their mortgage principal, but also timely repayment of principal and interest according to the payment schedule provided in the offering document. If a number of insured loans in the mortgage pool fall into arrears, a temporary cash-flow shortfall will develop that is not acceptable to the security holder. While a variety of structured financing techniques exist to address such shortfalls (for example, lender obligation to advance payments owed by delinquent borrowers, special reserve funds), a timely payment guaranty from a government-backed or highly rated private third-party insurer has become an MBS mainstay in several countries.

The largest, and most well-known, MBS timely payment guaranty program is the Government National Mortgage Association (Ginnie Mae) in the United States, which is used in tandem with pools of loans insured by the
FHA and guaranteed by the Department of Veterans Affairs. The Ginnie Mae cash-flow guaranty, which backs up the loan servicer’s obligation to advance out-of-pocket all payments due on delinquent loans, is provided for an added annual fee of six basis points. These insured advances are recovered later when the underlying FHA or Department of Veterans Affairs claim payment is made, or when the delinquent borrower brings the loan current.

Timely payment guarantees are provided in some other countries with active MBS markets, including Australia, where all MBS and all MI are private. In Australia, for a nominal premium, private “AA”-rated MI providers offer timely payment guarantees of up to 24 months for pooled loans that back highly rated MBS issues.

In short, as some countries’ primary mortgage markets mature to include securitization, primary MI also can and should evolve, mainly in two respects that will satisfy non-mortgage investors’ needs: first, to eliminate most loan-level credit risk; second, to protect not only against ultimate loss of capital following borrower default and collateral recovery, but also against interruption of mortgage pools’ scheduled cash flows from borrowers’ periodic loan repayments.

Credit Risk Management

Although they have little control over external forces affecting risk, including macroeconomic policies of the national government, public and private MI providers alike have at their disposal a powerful array of credit risk management tools. Most of the risk management tools noted below can be put in place during a program’s planning and design and start-up phases.

Regulatory Issues

Regulatory concerns mainly, though not exclusively, relate to privately sponsored MI programs. These concerns fall into two basic categories:

- Rules directly governing how an MI program will operate
- Rules governing how banks and secondary investors use MI
### Table 13.5. Credit Risk Management Tools

<table>
<thead>
<tr>
<th>Risk management tool</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rules and incentives to prevent adverse selection of risk by insured lenders</td>
<td>Seek reduced risk-based capital for high-LTV-ratio insured loans</td>
</tr>
<tr>
<td>Share risk exposure with originating insured lenders</td>
<td>Partial, rather than 100%, loan-level coverage</td>
</tr>
<tr>
<td>Share risk exposure with qualified third parties</td>
<td>Quota share loan-level or excess-of-loss portfolio-level reinsurance</td>
</tr>
<tr>
<td>Employ risk-based pricing based upon economic risk modeling and proper risk classification</td>
<td>Charge higher premiums for rate-indexed loans, based on simulated volatility</td>
</tr>
<tr>
<td>Define clearly both risks covered and risks excluded</td>
<td>Do not “second-guess” a lender’s underwriting to deny a claim. Exclude fraud or material misrepresentation from coverage</td>
</tr>
<tr>
<td>Define clearly insurable loan types</td>
<td>Maximum LTV ratio; first liens; completed properties; single dwelling units</td>
</tr>
<tr>
<td>Define master-policy (lender contract) terms and conditions meticulously and clearly</td>
<td>Describe clearly all lender actions needed to sustain coverage, submit claims</td>
</tr>
<tr>
<td>Define clear eligibility and performance standards for originators and administrators of insured loans</td>
<td>Insured lenders must have their own regulators; administrators of insured loans must have adequate IT platform; apply sanctions against substandard loan administrators</td>
</tr>
<tr>
<td>Require adequate information reporting, internal and external, to monitor significant risks</td>
<td>Design and maintain a loan-level database capable of tracking significant risk factors and concentrations; invest early and wisely in information technology</td>
</tr>
<tr>
<td>Maintain effective loan underwriting methods, approval criteria</td>
<td>Review each individual insured loan document package until alternative methods are proven to be reliable; publish and adhere to approval criteria</td>
</tr>
<tr>
<td>Diversify risks geographically</td>
<td>In a large country, maintain a physical presence in all key regions; in a small country, if private MI, seek to write MI in multiple countries</td>
</tr>
<tr>
<td>Maintain effective local and regional housing market intelligence</td>
<td>Establish independent “human intelligence” on major builder-developers; deploy underwriting and quality control staff in regional facilities</td>
</tr>
<tr>
<td>Invest in comprehensive, proven methods of quality control, including fraud detection</td>
<td>Employ qualified internal and external operational auditors</td>
</tr>
<tr>
<td>Control excessive or adverse risk concentrations</td>
<td>Limit, by various means, aggregate risk assumed in very large projects</td>
</tr>
<tr>
<td>Employ conservative loss-reserving methods</td>
<td>Track and analyze delinquent loan behavior patterns and reserve accordingly</td>
</tr>
<tr>
<td>Manage defaults and pending claims aggressively and mitigate losses creatively</td>
<td>Offer incentives to defaulting borrowers to convey property title voluntarily</td>
</tr>
<tr>
<td>Shield the entire operation from political influence</td>
<td>Strictly limit staff dealings with elected politicians on business matters; structure board with strong private-sector representation</td>
</tr>
</tbody>
</table>

*Source: Author’s own analysis.*
Key regulator concerns regarding MI behavior, taking account of its unique features noted earlier, should include the following:

- Maintaining adequate capital reserves relative to total risk exposure, including ability to survive economic catastrophe
- Segregating this unique form of insurance from other insurance lines
- Controlling conflicts of interest and maintaining underwriting independence between the mortgage insurer and the insured lender
- Defining classes of insurable loans
- Defining insurable lenders (for example, regulated lenders only)
- Requiring suitable loss provisioning on delinquent and foreclosed loans
- Ensuring adequate, but not excessive rates; nondiscriminatory rates; disclosures
- Requiring appropriate examinations and actuarial audits
- Restricting excessive risk concentrations
- Ensuring sufficient liquidity; avoiding risky, illiquid, or other inappropriate investments
- Applying appropriate standards and reserve requirements for potential reinsurers

The most comprehensive MI regulation is found in the United States, where all insurance is regulated by the individual states. The National Association of (state) Insurance Commissioners has promulgated a “Model Act” for mortgage guaranty insurance that provides a useful and comprehensive reference point for undertaking MI anywhere in the world. Some markets, for example, Hong Kong, Canada, Australia, and Israel, have enacted individual regulatory provisions similar to some of those appearing in the U.S. Model Act, such as the monoline restriction, special MI contingency reserve, and stringent risk-to-capital ratio limits, while not adopting the entire Act. One alternative to having a comprehensive MI law is to adopt a more abbreviated regulation under which the regulator then issues an MI insurance license based upon its approval of, and the insurer’s adherence to, a detailed business plan. Canada, for example, operates in this fashion.
Although not regulated in the same sense as private MI providers, the most soundly conceived government-sponsored MI programs are those that operate under rules similar to those governing private insurance programs. Most important are the rules requiring actuarial soundness, including premium rates and reserving formulas. Less important for government programs are the rules relating to conflict-of-interest and consumer protection.

Public MI programs that have, since the early 1990s, benefited from stringent rules include, most notably, the FHA’s Mutual Mortgage Insurance Fund (MMIF) and the Canada Mortgage and Housing Corporation’s MI fund. As described in the final section of this chapter, each of these programs encountered solvency challenges in the late 1980s. As a result of their financial stress, each was subjected to stringent new rules and required to operate under more rigorous commercial principles; each is stronger today as a result.

Some developing countries that have, or are contemplating, a public MI program do not yet have any legal or regulatory provision for a mortgage-insurance type of fund. Mexico and Mali are examples where the MI fund has been established, at least temporarily, as a special type of banking institution. Although the risks of home mortgage lending and mortgage insurance are similar in some ways, the MI fund does need insurance-specific rules, for example, for segregated capital accounts, actuarially based premiums, and rules for catastrophic loss reserves and loss provisioning that are different than for banks. In short, while private MI may require more extensive regulation than a public provider, the public MI must be subject to effective core regulations requiring a prudential, commercially based activity. The final section of this chapter discusses historical MI failures in several countries; weak regulation or supervision often was a contributing factor.

Because MI risks embody both insurance and real estate lending traits, its ideal regulator in a national government probably is of the type where all major financial institutions (banking, insurance, securities) are consolidated under a single authority, for example, Sweden (Swedish Financial Supervisory Authority), the United Kingdom (Financial Services Authority), Canada (Office of the Superintendent of Financial Institutions), and Australia (Prudential Regulatory Authority), rather than under fragmented authorities, most notably the United States. As MBS activities have grown, along with the
influence of the Basel Accords, over risk-based capital, this type of regulatory framework for MI becomes even more advantageous. As noted further in the following section, a unified and coordinated financial-institutions regulator can minimize lender opportunities to engage in unhealthy “regulatory capital arbitrage.”

Finally, consideration should be given to what rules governing MI should be statutory versus what should be established by ministerial regulation. In short, rules that are rarely in need of change are better enshrined by law; those that may evolve with changing market conditions are better left to the regulator’s discretion.

**Bank Risk-Based Capital Rules**

In gauging the outlook for MI in any country, banking regulation can be at least as important as insurance regulation. Of course, the MI provider needs its policyholders to be financially stable and competent lenders. More specifically, however, how banks’ risk-based capital regulations are implemented under the Basel Accords in any given country can directly influence—positively or negatively—prospects for MI success.

It may be only a small overstatement to say, “There is no natural market demand for MI.” In fact, left to their own devices over time, private lenders may be inclined to retain for themselves (while possibly underestimating) whatever risk premium the market may be willing to pay for making higher LTV-ratio home loans. Even where MI is seen as a tool to jump-start a dysfunctional or reluctant private-lending market, natural demand for MI may not be sustained over time, or lenders may adversely select for insurance protection only those loan applications they perceive to be inferior risks.

For the public-purpose objectives of MI to work well—reaching underserved market segments, extending affordable homeownership, and fortifying credit risk management system-wide—regulated banks need a broad-based incentive to use MI in a way that averts adverse risk selection. Experience in some countries shows that the risk-based capital weightings judiciously applied to home mortgages can be used to achieve these ends.

As noted earlier and illustrated in table 13.3, LTV ratio is the predominant variable, over both time and geography, which drives default risk on home
loans. High LTV (low borrower equity) loans in any given environment produce much higher default and loss rates than lower LTV loans.3

In deciding how, and whether, to grant favorable risk weightings on residential mortgages, it makes sense for a central bank to recognize this dramatic inverse relationship between borrower equity and risk, first by setting a sensible LTV cap on home loans eligible for favorable capital treatment. If domestic mortgage experience data is lacking, this important decision can be well grounded in rich international experience tying borrower equity to mortgage risk.

Then, to advance the above-noted public policy goals associated with the use of MI, it also makes sense for a central bank to recognize—consistent with Basel—the added insurance-sector capital support of MI serving to offset the higher credit risks of high LTV lending. Without qualified MI credit enhancement,4 home loans exceeding the set LTV benchmark should not be risk weighted any more favorably than a commercial mortgage.

Countries whose banking regulators currently assign a reduced-risk weight for home mortgages exceeding a designated LTV ratio but covered by private MI coverage include the United States (90 percent LTV); Australia, Italy (80 percent LTV); and Israel (60 percent LTV).

Finally, financial-sector regulators operating under emerging Basel II rules need to guard against “risk arbitrage” by primary lenders. Credit-risk-based capital rules need to be consistent, particularly among direct primary lenders, mortgage holders under various forms of structured financings and securitization, and mortgage insurers as third-party credit enhancers. The rules should not provide any incentive for perverse lender behavior, that is, to undertake transactions that allocate, shift, or substantially increase credit risks solely to exploit inconsistency in risk-based capital rules.

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3. Overall loss rates are computed as default frequency × loss severity. Table 13.3, shows expected losses on 98–100 percent LTV loans to be more than four times the expected losses on 75–80 percent LTV loans. Recent empirical studies suggest that several variables, including credit scores, rival LTV as predictors of borrower default. These indicators, however, relate more to early borrower credit failure than long-term mortgage loss incidence.

4. MI that is government backed or that has been assigned a high investment rating for claims-paying capacity. Also, loan coverage that reduces lender exposure to an LTV level that is considered safe without MI.
Consumer Issues

Several issues related to consumers (borrowers) have arisen in countries having the most extended MI experience, including:

- Definition of beneficiary
- Subrogation rights\(^5\)
- Refund of unearned premiums

Issues relating to who is the beneficiary and what are (or what should be) the rights of subrogation under the MI policy are somewhat related, so we shall discuss them together.

The MI provider always issues its policy (typically in the form of a “master policy”) to the insured lender. Then, the lender, upon the payment of the MI premium and some form of underwriting review, receives certification that individual loans submitted for insurance are covered under its master policy. The question regarding who is the beneficiary has arisen largely because the premium charge ultimately is borne by the borrower. This question elevated into a heated consumer issue in several countries mainly when MI providers, upon the payment of claims—especially under depressed market conditions—have pursued dispossessed borrowers to pay off their remaining debt after the mortgaged home has been resold.

Problems arising from mortgage insurers seeking recourse against defaulted borrowers have arisen mainly in the United Kingdom, Australia, and New Zealand and, to a lesser extent, in the United States. In Australia and New Zealand, the issue was effectively clarified going forward by changing the name of the product from mortgage insurance (MI) to lenders mortgage insurance (LMI).

For those who may be structuring a new MI program—public or private—this question merits thoughtful attention and a balanced approach. One middle-ground approach used in the United States has been to exempt bona fide owner-occupant borrowers from mortgage insurer recourse (except

\(^5\) “Subrogation” is an insurance term referring to the right of the insurer, upon the payment of a claim, to “step into the shoes” of the insured and assert any rights the insured may have had to recover losses from a third party. In the case of MI, this means the MI assumes the lender’s rights to pursue the defaulting borrower for any unpaid debt outstanding after resale of the collateral property.
where any such borrower acted deceitfully). The argument can be made that one who borrows for investment purposes, that is, to rent out the dwelling unit, rather than live in it, is party to a commercial transaction who has not lost his or her home. Such a defaulting borrower should remain liable to pay any remaining debt after the pledged collateral has been resold.6

Under MI programs where the entire premium is prepaid—often 3 to 4 percent of the total loan amount—a consumer protection question can arise with respect to a program’s provisions for partial refund of premium paid in the event that the insured loan terminates much earlier than expected. Some such refund provision should apply, at least over the early years of the loan. Some programs, including in the United States and in Israel, have offered the choice of a nonrefundable premium at a discounted rate compared with the refundable MI premium option.

In recent years, so-called “captive insurance” has gained ground among MI users in several developing markets. Insured lenders have formed MI affiliates or subsidiaries expressly designed to capture a share of the total MI premium through various risk-sharing arrangements, for example, reinsurance. Consumer concerns regarding this practice may arise to the extent that the lender’s profit motive may result in the cost of MI being higher than it otherwise might be, or MI might be required on loans that would otherwise be made uninsured.

Finally, in some countries, an attractive consumer benefit has been appended to some existing MI programs. In mid-2004, two leading private MI firms, as well as the state-sponsored Massachusetts Mortgage Insurance Fund, announced the addition of “mortgage payment protection” coverage to their standard MI programs. For no additional premium payment, borrowers who become involuntary unemployed can have six to nine monthly mortgage payments made directly by the insurer to the lender on their behalf. Similar, though not identical, mortgage payment protection programs have existed for some years in France and the United Kingdom.

6. A corollary to this observation is that only borrowers who are personally liable for repayment under their mortgage loan agreement should be eligible for MI.
Information Technology

For the two key reasons of managing risk and controlling costs, the public or private MI provider must pay keen attention to applicable and specialized information technology.

All insurance lines rely heavily on statistical data. MI’s information needs are especially demanding. As noted earlier, MI needs three basic types of data: (1) housing market and home price data, (2) borrower income and credit data, and (3) home mortgage performance data. In most developing markets, for a number of reasons, such information is more difficult to obtain than, say, data needed to write auto, homeowner, or life insurance. More often than not, mortgage performance data of the character and duration needed by MI does not even exist at the outset.

For a public or private insurer to be financially self-sustaining it needs to operate under the “law of large numbers,” which means gathering and managing large amounts of external and internal data, and doing so efficiently.

In the most advanced markets, MI providers are electronically connected to their insured lenders, credit reporting bureaus, and property information databases. They rely on large mortgage performance databases to validate their automated underwriting decision models. Massive credit history databases and predictor models now generate Fair, Isaac and Company (FICO) and related loan-scoring systems to support both MI underwriting and pricing. Drawing on huge property transaction databases, automated valuations are even beginning to supplant individual home appraisal reports. Property and mortgage registry systems are being converted to electronic form, able to provide MIs and other market players with near-instantaneous reporting. Behavioral models now are being used to guide MI claims-servicing personnel on the use of their time and resources.

Government MI programs in particular need to “keep up” with private lenders for the sake of both risk management and marketing. In the United States, for example, lagging legislation and underinvestment in technology has proved costly to the FHA’s MMIF, both in terms of market share and loss management. By contrast, the CMHC has stayed “ahead of the technology curve”; for example, with its EMILI automated underwriting system and electronic lender interface for both issuing new insurance certificates and for processing claims.
Sweden's BKN is another MI program notable for its leading-edge investment in information technology, which has paid off in terms of extremely low operating costs relative to outstanding guarantees. Automated processes include lender registration of new loan guarantees issued as part of its “delegated underwriting” system, and the electronic linking of BKN’s database with a national database of property registrations.

Most developing markets are not prepared to take full advantage of these information technologies. But, any business or strategic planning for starting a public or private MI should consider these things as they relate to local market conditions and its anticipated rate of development. At a minimum, with respect to IT, the MI provider should keep up—and ideally remain a bit ahead of—the lenders it serves.

Whatever the state of a market’s IT development, any MI sponsor will have a vital interest in promoting standardized and robust loan-level mortgage data collection by lenders and loan administrators, including detailed loan characteristics at origination and loan-performance detail from origination to termination.

### Public-Private MI Partnerships

As noted earlier, most countries’ MI programs today are government sponsored. Yet, many public officials where government MI already exists or is planned also want to attract private MI risk capital in support of their public policy objectives.

<table>
<thead>
<tr>
<th>Public MI advantages</th>
<th>Private MI advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero or minimal regulatory capital</td>
<td>Credit risk management expertise</td>
</tr>
<tr>
<td>Ability to impose uniform standards</td>
<td>Cost and operational efficiency</td>
</tr>
<tr>
<td>Better able to cover catastrophic risk</td>
<td>Investment in technology</td>
</tr>
<tr>
<td>More inclined to serve small market</td>
<td>Ability to spread risk across international borders</td>
</tr>
<tr>
<td>More inclined to operate in untested primary market</td>
<td>Product design/marketing responsiveness</td>
</tr>
<tr>
<td>No requirement to pay taxes or produce a return on invested capital</td>
<td>Free from political influence</td>
</tr>
</tbody>
</table>

Source: Author’s own analysis.
Government and private MI bring advantages and disadvantages, respectively, to the marketplace, most notably those shown in table 13.6.

Not surprisingly, policy makers seek to devise constructive public-private MI partnership arrangements that can realize “the best of both worlds.” Following are a number of such arrangements that are currently in use or in active planning.

Public MI Provider Supported by Private Reinsurer(s)

This partnership device is used in a number of countries, including the following:

- **The United States**—The State of Massachusetts’ MI fund reinsures a quota share 90 percent of its credit risk with a large U.S. MI firm, thereby adding geographic diversification and writing capacity.
- **Hong Kong**—The HKMC presently reinsures 80 percent of its MI risk with four highly rated private reinsurers—two domestic and two United States–based.
- **Mexico**—Private reinsurance with one or more U.S.-based MI firms (initially 50 percent quota share) is a core component anticipated by Mexico’s revised public MI program, currently being launched by the Sociedad Hipotecaria Federal (SHF).
- **South Africa**—The Home Loan Guarantee Company (HLGC) (a nongovernmental organization originally capitalized by the South African government) has for some years relied upon a U.K. reinsurer for capital support and added writing capacity. Unlike the government insurers noted above, HLGC also depends upon its foreign reinsurer for the investment-grade rating that has made its guarantee viable with domestic lending institutions.

Advantages of the government MI and private reinsurer partnership arrangement include the following:
- The up-front guarantee, issued by a government agency, serves to minimize—or even eliminate—insured lenders’ risk-based capital weighting under Basel rules that strongly favor government-backed loans. In many countries this has proved a major incentive for banks to engage in low-down-payment residential lending.
- The government MI program may be subject to added market discipline, especially in terms of pricing and screening of risks. The public agency can benefit from the reinsurers’ knowledge and experience regarding, for example, marketing and product design.
- If a small country, the government MI can effectively diversify its risk beyond national boundaries.
- The reinsurer can familiarize itself with a new or emerging national market without having to invest so heavily in establishing its own direct writing capability.
- The government program’s writing capacity—therefore, its mission achievement—can be greatly expanded without requiring a corresponding increase in capital or contingent risk.

Caveats applicable to this particular arrangement include the following:

- The reinsurer should thoroughly understand the MI business in country-specific terms
- The private reinsurer should be an active risk management and marketing partner, not just a financial partner for the government MI
- The government program should not become vulnerable to any sudden reinsurer withdrawal from the market
- Ultimate catastrophic risk coverage is left to the private partner, rather than the government

**Government Backup for Private MI Provider**

This type of partnership arrangement has worked well in Canada for many years. Canada has one public MI (CMHC) and one private MI (Genworth, formerly GE Canada). Under a catastrophic form of “reinsurance” arrangement, the private MI has paid about 10 percent of its annual premium into
a special reserve fund, and, in return, its policyholders are covered up to 90 percent on any claim that the private MI might ever fail to pay as a result of future insolvency. This special arrangement helps to place the competing public and private MI providers in Canada on a relatively “level playing field.” Of particular value, the 90 percent backup coverage translates into 90 percent risk-based capital relief under the Basel bank capital agreements.

The Homeownership Guarantee Fund, the Netherlands’ quasi-private MI program, also operates with a form of catastrophic government backup. In the event the Homeownership Guarantee Fund were unable to pay its claims, the national government and the municipalities are obliged to step in on a 50–50 basis and cover the fund’s entire deficit in the form of interest-free loans. This government backup translates into a zero risk-based capital weighting for insured home mortgage lenders in the Netherlands—as noted, a strong incentive for banks to make such loans.

Of the above two MI partnership models in which the public and private player respectively assumes risk in a primary or secondary role, given the above noted advantages of each, which alternative is preferable?

While the answer will depend somewhat on a country’s individual circumstances, including its stage of mortgage market development, a sovereign government should be better suited to filling a backup position that includes assuming ultimate catastrophic (systemic) risk; a private MI provider, in turn, ought to be better suited to providing direct primary lender and market interface and assuming the risks that are most measurable and predictable. As a practical matter, drawing a bright-line distinction between these two types of risk can be a difficult exercise.

So, one may ask, why is the more preferable of these two basic alternatives the one less frequently found in practice? Among the likely answers are: First, if the primary market is not well developed, private MI providers will be reluctant to engage in direct underwriting and market interface; they will prefer to negotiate reinsurance arrangements that assure reasonable control of risks and costs and opportunity for profit. Second, in a developing market, the government may be in a better position to impose rules and terms for the type of program that will meet its perceived public policy objectives.

A note of caution: While government might appear ideally suited to assume catastrophic MI risk, experience shows this not always to be the
case, as illustrated later in this chapter. A sovereign government under fiscal duress may not always fulfill its obligations when they are presented, whereas a triple-A-rated private MI will have rigorously stress-tested capital reserves dedicated to payment of claims at depression levels, and an enforceable obligation to do so.

These two alternatives for allocating risk between public and private MI partners need not be mutually exclusive. A working blending of the two may be found in a form of “mezzanine” coverage used elsewhere by private reinsurance firms. Under such an arrangement, the public MI would assume both a limited first-tier risk and ultimate systemic risk, while the private carrier would assume a middle, or mezzanine, layer of risk. In the private sector, the reinsurer’s liability may be triggered when the loss ratio in a given year reaches a threshold percentage; the reinsurer’s liability is exhausted, in turn, when the loss ratio for that period reaches and exceeds a second, much higher, trigger point.7

Government-Sponsored Enterprises (GSEs), Privately Insured8

Unique to the United States, this MI public-private partnership bears mention, if not imitation. Fannie Mae, Freddie Mac, and the Federal Home Loan Banks—all formerly government entities—are today federally chartered, privately owned special-purpose enterprises whose core mission includes providing capital market access for primary home mortgage lenders. Together, these three GSEs fund over two-thirds of all U.S. home mortgage loans. In their own right, they guarantee, for a fee, repayment of the mortgage pools they buy and securitize. As hybrid entities, the GSE boards include both private- and public-sector officials. Although privately owned, they receive

7. The applicable period for establishing the loss-ratio triggers may be either the year in which losses occur or the year during which the risk was originated, the latter being known as “book of business” risk.

8. This discussion describes the recent pre-crisis structure of the three U.S. housing finance GSEs. In late 2008 two of these quasi-government enterprises—Fannie Mae and Freddie Mac—facing severe portfolio losses and technical insolvency—were ordered into conservatorship by their federal regulator and infused with massive infusions of “bailout” capital by the national government. The U.S. Congress will eventually determine whether their future sponsorship will be public, quasi-public, or private.
special government benefits and are subject to some social targeting of their financing activities. All three GSE’s partner with domestic private mortgage insurers—two by statutory mandate and one voluntarily—by relying on private MI risk capital to cover top-layer credit risks on their securitized high LTV loans.

Whichever of the above public-private partnership models may be adopted, the national government should properly account for its net state exposure (contingent liabilities net of reserves and reinsurance) as part of its total public debt.

The matter of public-private MI partnership should be viewed dynamically, that is, in terms of possible sequencing of optimal arrangements as a country’s mortgage market develops and matures. The nature of this sequence normally should be toward progressively more private assumption of MI risk, subject only to continued fulfillment of core social objectives. Such a progression, tracking with overall market maturation, might go through the following stages:

**Stage One:** Government MI as sole provider

**Stage Two:** Government MI with private reinsurer(s)

**Stage Three:** Adoption of “sunset provision” for government provider

**Stage Four:** Possible entry of private MI provider(s) in tandem with government

**Stage Five:** Sale of minority ownership in government provider to private partner(s)

**Stage Six:** Ceding of controlling or 100 percent interest in government provider to private MI investor (that is, partial or full privatization, with exercise of sunset provision) with government assumption and retention of catastrophic (systemic) risk; also, possible reinsurance of higher-risk loans meeting targeted social goals.

### Public-Private MI Competition

Several advanced markets—notably the United States, Canada, and Australia—have experience with competing public and private MI programs.
In each instance, public MI preceded private MI. While this configuration evolved, rather than being an explicit public policy decision, both regulators and customers may derive certain benefits from it:

- Premium rate and service competition helps both the market and the regulator.
- While restraining monopolistic behavior by a single public or private provider, the government-sponsored MI program can continue to target “down market” or other underserved markets (for example, rural housing, low-income, informal sector) that a for-profit MI may find less attractive.

To endure, this type of public-private competition requires a conscious balancing act by politicians and regulators. The government insurer will have inherent financial and market advantages (for example, no taxes, no required investor returns, less stringent regulation, minimal risk-based capital weight for lenders). Yet, the competitive playing field must be kept reasonably level in law and regulation. Despite periodic grumbling, the United States and Canada have, for the most part, maintained such a balance. While the private MI share of Canada’s market is considerably smaller than in the United States, the Canadian government, as noted above, has continued its capital backup for the private provider, thereby helping to ensure that Canada’s MI market remains competitive.

Australia has gone a different route; in 1997 the national government withdrew from the MI market, selling its once dominant public MI entity outright to a foreign-owned private MI firm. In New Zealand, by contrast, a pilot, publicly sponsored MI program was begun in 2003 with a single lender. Targeted at low-income, mostly rural and small-town borrowers, it does not for now appear to be competing directly with the two established commercial MI providers. Market expansion by either the public or private programs, however, could result in direct competition.

Despite the perceived advantages of sustaining competing public and private MI in some developed markets, this probably is not a model for a developing economy to emulate. Any of the previously referenced public-private MI partnerships probably would be preferable.
### Table 13.7. MI Program Reversals and Resolutions—Selected Cases

<table>
<thead>
<tr>
<th>Country</th>
<th>Problem</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>United States</strong></td>
<td>For about 20 years up until 1996, the FHA allowed insured lenders to receive a 100% claim payment on many delinquent loans without having to foreclose prior to submitting the claim. Instead, the lender would simply assign ownership of the delinquent mortgage to the FHA. Only borrowers who were delinquent &quot;through no fault of their own&quot; and who were determined to have a &quot;good chance of bringing their loan current&quot; could have their loans transferred from the lender to the government MI. Then, a 1995 study concluded that FHA's Assignment Program had cost the MI fund an extra $1.5 billion and that about 2/3 of all loans assigned to FHA ended up in foreclosure anyway. The government's effort to help distressed borrowers or save money by servicing delinquent loans in lieu of private lenders was a costly failure.</td>
<td>The FHA Assignment Program was terminated in 1996. Since then, improved techniques for helping delinquent borrowers resolve their problems and for mitigating MI losses have produced dramatic positive results.</td>
</tr>
<tr>
<td><strong>Canada</strong></td>
<td>Following two severe regional recessions in the 1980s, the government-sponsored CMHC's reserves became depleted to the point where it had to seek additional funding from the federal treasury. Funds needed to pay claims were advanced by the government to CMHC in the form of a loan. Prior to this event, CMHC's claims reserves had been funded based upon year-to-year loss projections.</td>
<td>Federal legislation was passed requiring that CMHC be run according to commercial insurance principles, including actuarially based premium rates and capital reserves. These reforms were implemented, including increased premium rates.</td>
</tr>
<tr>
<td><strong>United Kingdom</strong></td>
<td>The remaining private MI firm in the 1980s suffered severe claims losses in the country's major energy-producing province. These losses were aggravated by a provincial foreclosure law prohibiting lender or MI recourse against defaulting borrowers, regardless of ability to pay. Many borrowers simply &quot;walked away&quot; from homes whose resale values had fallen well below the outstanding mortgage balance. The competing government MI, exempt from provincial law, retained full recourse rights.</td>
<td>An extended effort, an agreement appears to have been reached to establish a &quot;level playing field&quot; between the public and private MI providers, including recourse rights for both only on loans over 75% LTV, with clear borrower disclosure required.</td>
</tr>
<tr>
<td><strong>The Philippines</strong></td>
<td>After 50 years of ongoing operations, the government-sponsored MI in recent years experienced heavy claims and losses and a depleted balance sheet. Lacking capital, it temporarily suspended writing new coverage, while awaiting a substantial capital infusion from the government. Although economic instability was a contributing factor, the severest losses were caused by defaults on large-scale development-related loans.</td>
<td>Despite the program's full government guaranty, many claims went unpaid during the program's suspension. Although claims gradually are being honored—partly in cash and partly with government credits and paper, many prior claims remain unpaid, still awaiting requested legislative appropriations. The insuring activities that caused such high claims have been terminated.</td>
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*continued*
This chapter began by relating the 1930s debacle of an entire MI industry in the United States. Learning from that experience, both public and private MI providers have operated more soundly over recent decades than they might have otherwise.9

Over the past few decades, a number of MI programs and providers have suffered significant, though less dramatic, reversals. From each of these, however, something of value might be gleaned for an MI program operating at a later time and in a different country. Table 13.7 provides a number of such experiences, including inferences that may be drawn.

Some useful inferences that may be drawn from these international MI experiences include the following:

9. While the MI industry largely avoided assuming the risks and devastating losses caused by subprime lending, it has experienced severe and growing losses from the Alt-A market segment, as well as on negatively amortizing “Option ARM” and 100 percent LTV loans.
The success or failure of an MI program in a developing market cannot be judged until it has faced and survived a major economic downturn. Very few emerging economies have to date reached a point where their current MI programs either have encountered economic adversity or have registered a major impact on the markets they serve.

The closer that an MI program adheres to its main mission of supporting homeownership—that is, insuring loans secured by individual owner-occupied dwelling units—the more stability it is likely to demonstrate in times of adversity.

MI pricing must be actuarially based and maintained at levels that will be self-sustaining over the long term. A false sense of well-being that prevails in upward-trending markets should not be the basis for reducing MI tariffs.

Though generally not required to make a profit or pay taxes, a public MI should adhere to established commercial and insurance principles.

The terms of MI coverage should be established clearly when a loan is first insured so that loss reimbursement at the time of claim is predictable and prompt, barring fraud.

Default risks covered by MI need to be shared with originating lenders in such a way that lenders face some contingent risk exposure on loans not properly underwritten or serviced.

Foreclosure laws need to permit recourse against defaulting borrowers who are able to repay their debt. MI providers need to have at least some limited ability to assume a lender’s recourse rights after the payment of a claim.

A sovereign MI guaranty may not be fully reliable, despite the favorable capital treatment it bestows upon lenders. Even government-backed programs need to have sufficient dedicated capital reserves and cautious screening of the type of risks to be insured.

Collateral recovery as a condition for claim payment is highly advisable. If the collateral property cannot be recovered in a reasonably predictable time frame, then the benefit of the mortgage being a high-quality secured asset, whereby loss exposure can be mitigated, is lost to the MI provider.
Conclusion

Mortgage default insurance can be a useful supporting component of a developing housing finance system, especially in reaching aspiring first-time home buyers who have difficulty saving the large down payment needed to qualify for an uninsured bank loan.

While potentially valuable, MI is not a panacea. Some developing economies may view public MI as a way to jump-start home mortgage lending without having to implement painful primary market reforms. Others may see MI as a costless way to subsidize homeownership for low-income or other socially needy families. Any such MI initiatives should be avoided; their true costs may be deferred or concealed for some years, but will eventually emerge at a most unwanted time.

Public MI should not become a vehicle for dumping bad contingent risks on the government. Enduring social benefits of a public MI will only materialize if the program operates under key insurance and risk management principles. This worthy goal, in turn, is unlikely to be realized unless the public MI is subject to strong, commercially oriented regulation and supervision.

Many developing countries will find it difficult to induce a private-sector MI firm to enter their market as a primary provider. Lack of historical mortgage performance data and other market information, impediments relating to collateral recovery and mortgage and title transfers, and limited business-volume prospects often present a level of uncertainty and perceived risk that will deter early entry by a private firm.

This does not mean a lack of interest; however, housing finance officials may need to chart an alternative course of action to make MI a reality and to eventually attract private risk capital. The government may need to assume the role of initial MI sponsor, at least as a model or pilot to demonstrate its viability. As part of a larger plan and effort to grow the housing finance sector, such a step can pay dividends beyond simply proving that it can be done. Properly positioned and supported, MI can serve as a market catalyst, not only for increasing loan volume, but helping to set standards that will raise the home mortgage's investment quality for banks and secondary investors alike.

This chapter has offered an international blend of historical experience, program information, suggestions, and caveats about MI, all for the purpose
of giving some insight and help to those who are facing decisions regarding whether to go ahead with MI, or having already decided, how to go about it.