Establishing Mortgage Guarantee Insurance in Transition and Emerging Markets: A Case Study of Kazakhstan

by Sally Merrill and Douglas Whiteley
The Urban Institute, Washington DC

1.0 Overview

Introduction. There are a variety of insurance products that support mortgage lending, including hazard insurance, borrower life and disability insurance, title insurance, earthquake insurance, and so forth. Mortgage guarantee insurance (MI) is a crucial addition to these products, and one which can play a key role in harnessing housing finance as a development tool in emerging and transition markets. MI is a credit guarantee for mortgage lenders and can provide a wide range of benefits: improved affordability for borrowers, risk sharing for lenders, improved standardization and risk management for the mortgage finance sector, and supervisory benefits to regulators, especially in the context of Basel II. Additionally, there are benefits to borrowers who wish to utilize the equity that exists in their current housing to start a business or purchase goods and services. Many of the former soviet satellites, such as Kazakhstan, have adopted a policy of transferring the ownership of the previously state owned residential housing to their occupants. This has resulted in the creation of a considerable amount of "home equity" but to date relatively little opportunity has existed for homeowners to use this asset.

Over the last several years, *Housing Finance International* has chronicled the development of mortgage guarantee insurance in both developed and emerging markets.[1] This article updates the status of the spread of MI worldwide, discusses the benefits of MI, especially to developing and transition economies, and provides a case study of the process involved in establishing an MI company in Kazakhstan.[2]

Mortgage Insurance is Becoming Important Worldwide – Mortgage default insurance has played a crucial role in the development of modern mortgage finance systems. Decades ago, major publicly sponsored mortgage insurance programs in the U.S. and Canada helped pave the way for long-term, self-amortizing mortgages, and the increased affordability of the insured loans gave rise to a tremendous boom in housing construction and homeownership. Mortgage insurance is now established in many other OECD countries, and in the last few years has spread worldwide, through both government-sponsored companies and large international mortgage insurers. MI is now in operation or under active development in several emerging and transition economies.

Prerequisites for Establishing MI. MI has the potential to offer considerable benefits to certain transition and emerging markets. However, MI is not appropriate for countries whose financial sectors, mortgage markets, and legal infrastructures have not yet reached at least a modest level of sophistication and development. If it is to work properly MI needs to be established in a sufficiently supportive environment with a growing mortgage portfolio. From the limited experience to-date of establishing MI in developing markets, the following criteria are offered as prerequisites. First, it goes without saying that reasonable macroeconomic and monetary stability are required. In addition, the country's legal and administrative framework for mortgage finance, - for example, the mortgage law, titling and registration, mortgage procedures and IT systems, and especially foreclosure procedures and sale at auction - must be adequate to support effective mortgage lending and collateral acquisition in the event of default. The banking sector should be market-driven and competitive, with privatization and consolidation having already taken place or be well underway. Finally, regulation and supervision of the banking and insurance sectors must be effective, and ideally, a favorable regulatory regime would be established for loans carrying MI.

Establishing a Mortgage Company. There are numerous issues to address in considering first, whether to introduce MI in a given developing economy, such as:

- the real estate market potential for growth;
- the real estate ownership and foreclosure laws;
- the existing and proposed banking and insurance laws and regulations;
- the social disposition toward property ownership and foreclosure held by the citizen and the judicial system; and
- the resolve of the government to make market driven improvements in their economic environment;

and secondly, how the company should be capitalized, designed, and operated. These include decisions regarding:

- a public vs. private vs. public/private partnership program;
- the capital and reserve rules;
- the MI coverage level and the premium rate;
- the company's status as a monoline insurer; and
- the regulatory regime for MI: the mandatory application of MI for higher LTV (loan-to-value) loans and whether such loans receive favorable regulatory capital requirements.

How these decisions were made for Kazakhstan are discussed below. Interestingly, the rapid growth of MI start-up efforts in the transition economies has inspired a comparative analysis of the risks inherent in a number of MI companies in OECD. Using an options based approach, the authors assess risk based on the premiums charged, the required reserves, and the inherent riskiness of the economic environment. The analysis includes an early version of Kazakhstan's proposed mortgage company and should prove useful for evaluating its ultimate structure as well as those for MI efforts in other transition and emerging markets.[3]

Overview of Kazakhstan's Guarantee Fund for Mortgage Credit: FGIC. FGIC is a publicly owned guaranty fund, fully capitalized by the National Bank of Kazakhstan. FGIC (FGIC is the acronym in Russian) is expected to open its doors for business quite soon. A CEO and Deputy Director have recently been put in place by the National Bank and the business plan is nearly final, as are decisions regarding the MI coverage level, the MI programs to be offered, and the premium structure. The premium rates offered by FGIC are expected to be actuarially sound from the inception date of the company. It is projected that FGIC will show a negative operating cash flow position during the first several years of its operation, and thereafter be fully self-sustaining. having set its premiums on an actuarially appropriate and self-supporting basis.

In the initial stages of development, a private or public/private MI company was considered, but at present Kazakhstan's insurance companies and other potential investors do not have sufficient funds to make this feasible for operating as a monoline company. However, although it is publicly sponsored, FGIC will be operated as if it were a strictly private venture. FGIC is conservatively capitalized, and like MI companies in the U.S., is a monoline insurer. The United States Agency for International Development (USAID) has provided developmental support for FGIC .

Importantly, FGIC offers only "top tier" coverage, not a 100 percent guarantee; the coverage level will be 30 percent for the initial programs. The LTV level above which MI will be utilized is 70 percent, and, initially, the maximum LTV for insured loans will be 85 percent. The underwriting criteria, which are now under development, will be compatible with best practice by the mortgage lenders in Kazakhstan and consistent with the requirements established by Kazakhstan Mortgage Corporation, the country's recently established secondary mortgage market institution, also capitalized by the National Bank. Borrowers will pay the MI premium, which although not yet finally determined, is likely to be around 4% of the loan value. An up-front charge (single premium payment) is the likely mode of payment during the early years, and it may be amortized with the loan payment. Relations between FGIC and the lenders have been codified in a Blanket Policy and Contractual Agreement, Finally, the bank regulatory framework, specifically the risk weight policies for high LTV loans and loans carrying MI, is also under development.

Why Kazakhstan? As will be detailed below, Kazakhstan's financial sector and mortgage market meet most of these criteria. Nevertheless, the development process has been fairly lengthy, as there are numerous practical issues involved in designing an MI program in a country which, until fairly recently, not only had no mortgage finance, but whose citizens had lost faith in the banking sector following various monetary crises. In particular, the lack of historical information, and lack of experience with default and foreclosure, render it difficult to measure, and therefore price, the credit risk to be addressed. Notably, however, Kazakhstan has a very effective financial sector "reform champion" in the Governor of the National Bank - Grigori Marchenko - who has pushed policy and institutional development on a wide variety of fronts. The impact of an effective champion has no doubt been important.

2.0 Mortgage Insurance is Growing Worldwide

MI is now spreading rapidly worldwide in developed, emerging, and transition markets.

Throughout the OECD countries, the large international private insurers are quickly making inroads, testimony in part to greater interest in credit enhancement in the primary market and the emergence in Europe of a wider variety of mortgage-back debt products.[4] GE Capital, PMI, and AIG are among the most active international companies. In addition, mortgage insurance programs are also coming into operation in emerging and transition nations. Hong Kong and South Africa have established mortgage default insurance programs and Lithuania initiated a public program in 2000. MI is under active development not only in Kazakhstan, but also in India, Latvia, and Thailand. Finally, MI is under consideration in a number of other CEE and NIS economies, including Poland.

Table 1 summarizes MI programs worldwide, the public or private sponsorship, and the coverage levels. In the developed nations the international insurers are establishing private MI companies.

In contrast, in transition and emerging nations, MI is generally either a government sponsored program, or a public private partnership, possibly with international finance institutions, such as IFC, providing support (this is the case in India). The loan coverage levels, that is, the portion of the loan under guarantee, range from 100

Table 1
Mortgage Default Insurance Worldwide

Country	Type Of Mortgage Insurance	Loan Coverage
U.S.: FHA and VA, 7 Private MI Companies	Public and Private	Public, 100% Private, 20% - 30%
Canada: CMHC Private MI Company	Public and Private	Public, 100% Private, < 100%
Australia: 3 MI Companies	Private; 1 public until 1997	100% or less
New Zealand: 3 MI Companies	Private	20% - 30%
United Kingdom: numerous general insurance companies	Private MI Insurers and mortgage indemnity insurance*	< 100%
France	Public	100%
Italy	Private	20% - 40%
Spain	Private	20 %- 40%
Netherlands	Public	Public - 100%
Sweden	Public	Varies; less than 100%
South Africa: HGLC	NGO	20%
Hong Kong	Public/private	30% or less
Israel	Private	20% - 30%
Lithuania	Public	100%
Kazakhstan (expected)	Public	30%
Latvia (expected)	Public	22%
India (expected)	Public/Private/IFC	Not available
Thailand (expected)	Public	Not available

* mortgage indemnity insurance differs from the classical mortgage insurance described here.

percent for some public programs to 20 percent to 40 percent for most private programs, which is referenced here as “top tier” coverage.

3.0 How MI Works.

Mortgage Insurance is a credit guaranty that is provided to a financial institution that makes residential mortgage loans to individuals. The credit guaranty is payable if the specified loan becomes delinquent and enters into foreclosure, and the lender fails to recoup its outstanding principal and other associated costs. The guarantee is payable in an amount up to the level of “coverage” specified in contract between the lender and the insuring entity[5].

As noted, the LTV norm for mortgage loans is Kazakhstan is 70 percent and the proposed coverage level for the initial MI program in Kazakhstan is 30 percent. On a 70 percent LTV loan without MI, the bank’s loan risk is clearly at 70 percent of the property value. With MI coverage of 30 percent, the bank’s loan risk level falls to 59.5 percent. This loan level risk does not include the increased losses that will be incurred by the bank as a result of foreclosure time and expenses, which are estimated to be 15% to 30%. (Also, the actual loss will be significantly impacted by the salvage value of the property.)

4.0 The Benefits of Mortgage Insurance in Transition and Emerging Markets.

Benefits of MI. Mortgage default insurance can be expected to bring significant benefits to the economies of those transition and emerging markets that meet the prerequisites for making MI effective. As noted, MI provides risk sharing for lenders, improved affordability for borrowers, improved management of the mortgage finance sector, and supervisory benefits to regulators.

Reducing Risk for Lenders and Helping Outreach to more Borrowers. Banks face a number of risks in mortgage lending, and credit risk can be among the most important. MI significantly reduces the banks' credit risk due to borrower default; in many cases, it may entirely eliminate this risk. Because FGIC will share the credit risk, lenders can offer an expanded portfolio of mortgage loan products appropriate to a larger group of borrowers.

MI can help reduce non-price rationing of homeowner loans. Lenders ration via requiring large downpayments and/or establishing low payment to income ratios and conservative risk profiles for qualifying the borrower. Lenders in emerging and transition markets are generally very risk averse, and perhaps rightly so, as there is often little information on credit risk in very young markets and the information systems are so limited. Thus, they seek only the highest income and formally employed borrowers, households that make up only a fraction of the potential market.

Those with informal income, or self-employed income, even if it is steady and adequate, are refused loans, often because banks simply do not attempt to underwrite them effectively. Thus, lenders ration mortgage credit to the detriment of numerous potential clients who are credit worthy, as well as to the detriment of stimulating economic growth. A "zero percent" default goal, seemingly the quest for many lenders just entering into mortgage finance, results in a sub-optimal equilibrium all around.

Improved Affordability for Borrowers. Mortgage insurance allows banks to provide mortgage loans with higher LTVs than currently being offered. Thus, households need smaller down payments, and many more households should be eligible for mortgage loans. Requiring lower down payments will enable borrowers to realize their homeownership goals much sooner than if they had to save for a lower LTV loan. With risk sharing, banks can become more competitive by reducing rates, increasing term, and extending loans to borrowers with more modest income and/or informal sector income.

Which Borrowers Can Benefit from Mortgage Insurance? Mortgage insurance, as discussed in this paper, is not designed to be a subsidy program. MI does not address the housing problems of the very poor. Nor is it intended for the wealthy, who can afford mortgage loans on terms that do not require insurance. Rather, it is aimed at households of moderate income, and especially those that have not had the opportunity to accrue a large cash down payment for their housing or those that wish to use the equity in their current home for other purposes. By reducing the amount of their own savings, which must be made available at the time that the loan is taken (that is, increasing the LTV), the number of qualifying households will be increased. Likely candidate borrowers might include young households, professional households, and possibly military personnel.

Mortgage Market Effectiveness. MI can be a catalyst for development of the mortgage market, which will help unleash the considerable potential that housing has to offer in economic development. FGIC can work side-by-side with Kazakhstan's lenders and private insurance companies and help pave the way for expansion of the mortgage market through new methodologies of risk sharing. Working together with the Kazakhstan Mortgage Company (KMC), and new institutions such as the proposed credit bureau, MI will help create an important synergy for development of the mortgage market and housing sector. In sum, MI can:

- promote better risk management, underwriting and delinquency management;
- improve standardization: standardizes underwriting & documentation;
- support better delinquency management and loan "workouts";
- encourage improved property appraisal; and
- encourage streamlined foreclosure.

Finally, MI may assist in efforts to develop secondary mortgage markets in developing nations. There has been limited success to-date in developing markets for capital market funding of mortgage finance.[6] It is perhaps not reasonable to expect secondary markets to develop in countries with weak legal and administrative structures in their primary markets, no credit enhancement tools, and little information on risk. As a key credit enhancement, MI can play a significant role in this regard.

Benefits to the Economy and Government Housing Policies. MI is a cost-effective tool for helping affordability, as it can help reduce non-price rationing at an actuarially fair price. Most importantly, MI works with market forces, and can thus be more cost-effective than interest rate subsidies or builder subsidies in reducing rationing. Finally, it is expected that MI can expand homeownership faster than contract savings schemes. The savings period for a borrower receiving a high LTV loan with MI could be considerably reduced; in addition, if the borrower qualifies, mortgage lenders are free to offer a larger loan that might be available under the terms for the contract savings scheme. As a result, enhanced demand for housing should stimulate both new construction and improvements to existing housing. Together with the improved labour mobility provided by a more flexible market, a "virtuous" circle of economic activity can benefit the economy.

Bank Supervision. Study after study has estimated the very significant increase in the probability of default as LTV increases. MI can become a partner in implementing risk-based supervisory regime based on LTV; ultimately, this will be supportive of the Basel II framework. In introducing MI, it is desirable, and preferably mandatory, that all loans with LTV exceeding a certain level must carry MI or an equivalent type of credit enhancement in order to receive favourable risk weight treatment. This type of regulatory environment not only helps control risk but also helps assure that MI will reach a large enough scale to make a difference in the risk profile. Finally, from the viewpoint of bank regulators, MI transfers a portion of the credit risk outside the banking system. This is beneficial as long as FGIC is prudently managed and the insurance regulators do their job regarding FGIC's risk profile and that of the private insurers offering MI.

5.0 Kazakhstan's Financial Sector and Mortgage Market.

As discussed in the Introduction, certain economic and financial sector prerequisites that must be met before MI can be established in an effective manner in emerging markets. There are clearly no hard and fast criteria, and at some level this simply becomes a value judgement, but it would appear that Kazakhstan has reached an adequate level of development. Kazakhstan's financial sector has emerged from the 1998 Russian debt crisis as stable and growing, gradually regaining the trust of the country's households. The nation's financial sector has been praised as "small but elegant".[7] Kazakhstan has a positive economic environment and falling inflation. The banking sector has been consolidated from 230 banks in 1993 to 38 today, with three large banks holding 60 percent of the banking assets. While in 1999 household deposits were a meagre $311, they are now over $1.8 billion[8]. Among other developments, pension reform, corporate bonds, and deposit insurance are in place and a credit bureau is on the way. The important role played by the National Bank of Kazakhstan has already been mentioned.

Kazakhstan's mortgage market, only begun in 2001, currently stands at over $150 million, expected to reach $200 million by the end of 2003. The average loan size is about $7,000, with an LTV of 70 percent. Most mortgage loans are five to seven years, although a few now have a ten-year term. There are eight major mortgage lenders and market competition is definitely increasing, which will help lead to increasing term and lower rates. The legal and administrative framework appears adequate in most respects. Property registration is efficient, and Kazakhstan has developed a non-judicial foreclosure process, with strictly sequenced steps and time limits between them. While this is important from the perspective of MI, the system is almost totally untested, as defaults are thus far extremely low. Notably, several private insurers are now offering a limited version of MI, although as discussed below, capital adequacy concerns may arise if this business grows rapidly. Finally, the Kazakhstan Mortgage Corporation, the newly formed secondary market institution, is the first in the NIS to issue a mortgage-backed bond.

The sector is not without problems, of course. While interest rates have been falling, spreads are likely still too high. The property valuation process seems particularly "non-transparent", with banks arbitrarily discounting the appraisal results. Although this practice may seem beneficial for bank regulators and mortgage insurance it is not a practice that will serve the real estate market well in the long term and does not provide borrowers with a fair and arm's length transaction. Mortgage loans are now made in dollars, or in tenge indexed to dollars; the National Bank is making strenuous efforts to have more loans (not indexed) in tenge.

Finally, the business plan for FGIC requires an estimate of the future growth of mortgage lending, as well as the proportion of loans that will carry MI. It has been particularly difficult to predict future effective demand. First, Kazakhstan's population is actually declining, due, in part, to emigration to Russia. There is also substantial urban in-migration and the mortgage market is largely centered in Almaty, Astana (the new capital), and several other cities in the oil producing regions. These trends emphasize the limited nature of geographic diversity, which can pose problems for MI. In addition, as mentioned, most banks have been willing to underwrite only high income and formally employed borrowers; therefore expected demand would probably change significantly if the underwriting parameters were liberalized.

6.0 The MI Development Process for Transition and Emerging Markets.

As noted in the introduction, there are numerous issues to address in considering how MI should be designed and priced in transition and emerging markets. These include at least the following topics, which are briefly discussed below, along with the "tools" used in the development process - the economic scenarios, the premium model, and the business plan[9]. The issues include:

- public vs. private vs. public/private partnership sponsorship;
- capital and reserve requirements and status as a monoline insurer;
- the portion of the loan that is insured - the "coverage";
- the number and types of MI programs and the premium rate for each;
- the characteristics of the loans, and possibly the borrowers, that trigger the requirement for mortgage insurance. The key factors are the loan-to-value ratio (LTV), types of financing and the proportion of a household's income that may be devoted to the loan payment;
- real estate laws and regulations regarding ownership ("title") and the foreclosure process;
- the regulatory framework - that is, risk weights - for high LTV loans and loans carrying MI; and under what circumstances MI is mandatory on high LTV loans; and
- in the case of Kazakhstan, integration of rules and procedures for FGIC consistent with those for KMC, the secondary market agency noted above.

Public vs. Private MI. Ideally, newly established MI programs would be privately capitalized and operated. In the OECD countries, where the large international insurers are now expanding, the countries are benefiting from international capital, international MI know-how, and international analysis regarding the potential role of MI under Basel II. However, in smaller, less developed economies, the private international companies to-date have generally found the markets too undeveloped and/or the potential too limited. Kazakhstan's mortgage market is not yet large enough or sophisticated enough to entice the large international players. Similarly, local insurers lack sufficient capital. As a consequence, FGIC does not have contributions from IFC; although interest was expressed, IFC participation would require a majority private contribution.

Publicly sponsored MI programs have the advantage of being able to be quickly implemented by Government so that MI can assist in the mortgage market development process. A not-for-profit approach, if adopted, can lower premiums. Finally, as has been the case in the U.S., Canada, and Australia, public MI companies can pave the way for later introduction of private MI companies.

On the other hand, there are decided risks of public sponsorship. First and foremost is the moral hazard that banks will insure only their most risky loans, and the problem is exacerbated when the public company offers 100 percent coverage. Also, a public MI company may slip into the role of a "social" agency, and lose its market-based focus and commercial pricing philosophy in order to achieve political objectives. If premiums are arbitrarily reduced below actuarially sound levels (in order to enhance affordability), the MI Company may fail to remain commercially sound. This can lead to non-budgeted, non-transparent charges against the public budget. Finally, under these circumstances, incentives for developing a private mortgage insurance market would disappear, as the playing field would no longer be level.

FGIC was established as a public company both because the Government wanted to have MI in place quickly, and because the amount of capital available to local insurers is limited. Ultimately, however, it is recommended that FGIC be privatized or evolve into a public private partnership, with local, international, and/or IFI (international financial institutions, such as IFC and EBRD) contributions to capital.

Capital and Reserve Requirements and Monoline Status. Given a past history of bankruptcy, private MI companies in the U.S. are now very conservatively regulated. Mortgage insurers are required to be monoline and have significant initial capitalization requirements, which are imposed by the state insurance licensing agencies. In addition, the secondary market agencies set minimum requirements in order for the insurance company to be approved to insure loans that Fannie Mae and Freddie Mac purchase. Initial capital of $5,000,000 is the minimum regulatory level in the U.S. As a practical matter, mortgage insurance companies that have begun operations in the last ten years have had initial capital and confirmed commitments for additional capital contributions ranging from about $18 to $23 million. U.S. mortgage insurers are required to maintain a minimum risk to capital ratio of 25 to 1 to retain their operating capability, but again, in practice, the ratio is generally more conservative.

The capital of 500,000,000 tenge (approximately $3.33 million) proposed for FGIC appears to be adequate for initial capitalization. In addition, it will assist FGIC to cover its start up expenses, via its investment earnings, as well as support its future growth. The $3.33 million in capital should be sufficient to insure 30,000 to 34,000 loans before additional risk capital would be required. This amount of capitalization is approximately one third more than the amount of capital that a start-up mortgage insurer in the U.S. would need for the comparative risk levels envisaged for FGIC.

The issue of monoline status is also important. FGIC will be a monoline insurer. As mentioned, several private insurance companies in Kazakhstan have already begun to offer a version of MI. On one hand, this is certainly beneficial, as many instances of private and public MI existing side by side exist, and the MI programs offered by public companies often pave the way for expansion by the private ones. However, many of the insurance companies in Kazakhstan are subsidiaries of the large banks, and their capital and reserves are co-mingled in ways that may not prove to be adequately prudent for a risky business like MI. The resulting dual use of the capital, to support the insurance as well as the mortgage functions, places both the bank and insurer at greater risk due to lack of diversification; this should ultimately be of concern to the regulators with respect to providing bank capital relief under this type of structure. Therefore, in the long-run, this may be an issue in Kazakhstan with regard to the capital adequacy of the insurance companies offering private MI, leading to an assessment of whether MI should be provided only by companies set up on a monoline basis.

MI Coverage Level. As discussed, top tier coverage helps avoid the serious "moral hazard" of lenders insuring only their highest risk loans or simply just passing the underwriting decision to the mortgage insurer to see what gets approved! Mortgage insurance operates most effectively as a "review" underwriter and not the primary underwriter of the mortgage loan. FGIC has a coverage level of 30%, and top tier coverage was the only option ever considered for FGIC, as it was clear that this would mandate risk sharing between FGIC and the lenders, and thus ameliorates considerably the moral hazard inherent in 100 percent coverage. (While 100 percent coverage is offered by public programs such as FHA in the U.S. and CMHC in Canada, they utilize years of experience, and strict lender qualification guidelines, to avoid this problem to the greatest extent possible. It should also be noted that mortgage insurance programs, both public and private, that have offered 100% coverage have traditionally experienced significantly higher default rates than programs only offering top tier coverage.)

Setting Market Scenarios for Kazakhstan. Three market scenarios, each with a different risk profile, have been defined for use in he Premium Model and Business Plan for FGIC (see below). These are: (1) a positive economic environment, noted as "low" risk in the model; (2) the moderate risk environment - the "expected" economic environment and (3) severe risk, or a negative economic environment. The three scenarios, each yielding a separate premium value, are utilized in a weighted manner to determine the premium. The pricing model weights the positive and negative scenarios as follows: a 25% weight for each of the low and severe risk scenarios and 50% for the expected market.

The logic of this approach stems from the long-term nature of the pricing decisions in mortgage insurance. Unlike premiums for auto insurance or property insurance where the insurer can change the premium annually, an MI premium is fixed for the life of the loan on the date of loan closing. At the same time, the MI Company must look forward and anticipate what future mortgage market conditions are likely to be. Thus, over the life of any given cohort of loan insured by the company, market conditions are likely to vary from good to less good in accordance with business cycles and/or economic downturns and recoveries. In this sense, the premium rate must represent an "average" price that can maintain the health of the MI Company's financial position over time.

The Premium Model. The types of mortgage insurance programs that might be offered by FGIC and the premiums that should be charged for alternative MI programs are being assessed through analysis using a Premium Model developed for Kazakhstan. The Model has been tailored to the maximum extent possible to reflect the mortgage market conditions now prevailing in Kazakhstan. The market is described by such parameters as the loan interest rates now offered by the main mortgage lenders, and by assumptions made about default rates, foreclosure laws, prepayment rates, operating costs, salvage value of foreclosed properties at auction, and so forth.

The long-term data needed for this type of MI pricing model simply do not yet exist in Kazakhstan. The Kazakhstan mortgage market is barely three years old. There are few long-term mortgage loans, no loans "seasoned" for more than a few years, and almost no experience with default or foreclosure. Thus, the so-called LTV ratio default curve (see below) has been formulated using data based upon non-Kazakhstan economic experiences. A crucial task FGIC in the future will be to create Kazakhstan-specific mortgage origination and default data to ascertain more accurate default probabilities and other Premium Model input data.

LTV Ratio, Mortgage Insurance Coverage, and Premium Rates. It has been assumed that the primary mortgage program that will initially be offered by FGIC is for loans carrying MI to have a maximum 85% LTV ratio and 30% mortgage insurance coverage. At present, this represents the highest LTV ratio and largest mortgage insurance coverage level proposed for The Guaranty Fund for Mortgage Insurance of Kazakhstan (FGIC). A limited number of other program options should be considered, however, for utilization at start-up or in the future.[10] Thus, the model offers premium rates for numerous additional combinations of LTV and level of coverage. These are displayed as output in the Premium Model, and are shown for information purposes as well as for potential use by FGIC. The user-determined variables for the premium model include the loan interest rates, the book year default rates, number of months of delinquent interest, the loan payoff rate, operating costs, claim costs, and salvage value at foreclosure sale,

Premium rates are calculated by the Premium Model for the following combinations of parameters strictly for comparison purposes:

- LTV Ratio (70%, 75%, 80%, 85%, and 90%) - 85% LTV is the FGIC maximum
- Mortgage Insurance Coverage Percentage (15%, 20%, 25%. 30%, 40%, and 50%) - only 30% Coverage will be offered by FGIC initially
- Annual or Single Premium Payment Plans - Single Premiums will be offered initially
- Loan Term: 3, 5, 7, and 10 years.

Default Probabilities in the Premium Model. Pricing MI is difficult in the best of circumstances. It is even more difficult in developing nations with loan portfolios that are not seasoned, and where little or no history of default, foreclosure, or sale at auction exists.

The frequency of defaults in the Premium Model is primarily but not entirely, a function of the LTV ratio and loan term default curve. This is a matrix of default probabilities defined for each year of a cohort of loans, and for each combination of loan term, LTV, and coverage level in the Model under 3 economic scenarios: low, moderate and severe. The default probabilities are calculated on the basis of a "book year", which is a group of loans with similar characteristics that were all originated in the same year. Typically, default curves for long-term mortgage loans are in the shape of an upside down U-curve with a long right hand tail. That is, default probabilities are quite low in the initial years, increase to a maximum after a few years into the loan term, and then gradually decline to very low values again as the loan ages significantly.

As discussed, there is almost no experience with mortgage defaults in Kazakhstan. Similarly, there are not yet any book year data. As noted, mortgage loan terms are now increasing from 3 years to 5 and 7 years, with perhaps a few at 10 years. However, these loans have not yet aged sufficiently that their default and prepayment behaviour is evident. And again, the data are not yet available on a "book year" basis, which is the actuarial format underlying a mortgage insurers type of premium models. Thus, the ability to actuarially develop MI premiums based on Kazakhstan data - at least with any amount of confidence - simply does not now exist.

Under this circumstance, a "second best" alternative has been employed in the Premium Model: United States mortgage loan experience data on the default behaviour of loans of different terms and different LTV levels has been utilized in the model. U.S. databases containing this type of information are some of the largest and most complete worldwide. Note, however, that while the LTV default curves are based on U.S. information, the default rates are set to reflect current and expected Kazakhstan experience. The pricing model incorporates an adjustment factor, which can raise (or lower) the default curves. For example, at the current time, the default *rates* in the Kazakhstan premium model (book year claim termination rates) have been set using information provided by the mortgage lenders in Kazakhstan and the National

Bank of Kazakhstan (our MI Working Group as discussed below). The rate established for the reference loan - an LTV ratio of 85% and a term of 7 years, the norm now emerging in the market - is 4 percent. (Given the model's structure, this yields a default rate of 2.8 percent for the low risk economic environment and 12.9 percent for the high risk environment.) The current recommendation for the MI premium, at 30 percent coverage for the reference loan, is based on this default rate and Kazakhstan values for the other user variables in the model. As market experience evolves in the short-term, FGIC management would determine whether or not Kazakhstan's market experience requires a re-calibration of the default rate. In the long-term, not only the rates, but also the entire default curve structure should be modified to reflect Kazakhstan's market.

Credit Risk and the Regulatory Regime for Loans with Mortgage Insurance. We have begun a dialogue with the National Bank (NBK) concerning its risk weight framework under Basel I and, ultimately, Basel II, the role of LTV in assigning risk weight, and the treatment of high LTV carrying MI. This issue includes:

- the role of the LTV in the determination of the risk weight assigned to a residential mortgage loan;
- the role of mortgage guarantee insurance in this risk weight framework; and
- NBK regulation of the mortgage guarantee insurance function itself.

National Bank regulatory policies regarding residential mortgage loans are an important tool, both for controlling the level of risk in the mortgage finance sector and contributing to a successful expansion of mortgage lending. The first and foremost credit risk factor for residential loans is the LTV (loan-to-value ratio). Data from numerous countries show that default rates increase with the level of the LTV. As one example, data compiled for the U.K., Canada, the U.S., and Australia illustrates the increase in the default rate as the LTV increases from 80% to 95%. Setting the default rates for loans with LTV of 80% as an index with value = 1.0, the relative probability of default nearly triples for loans with LTV of 90% (a factor of 2.84). For loans with LTV of 95%, the increase was seven-fold (7.26).[11]

As discussed, mortgage insurance can play an important supporting role by helping borrowers qualify for higher LTV mortgage loans. To be fully effective, however, MI must be coordinated with an appropriate regulatory environment. In countries where MI is an integral part of the market, this generally involves risk weight parameters based on both the LTV and the use of MI or a similar type of credit enhancement. Thus, regulators in numerous countries require that high LTV loans must carry a higher risk weight. The LTV value that determines the "higher" or "lower" LTV risk weight classification varies from country to country, but is most frequently between 60% and 80%. Under Basel I, risk weights of 50% are generally used for lower LTV loans, and a risk weight of 100% for residential mortgage loans above the country's chosen LTV cut-off.

NBK currently differentiates risk in residential mortgage loans, using risk weights of 50% and 100%. Residential mortgage loans that meet the "definitions and requirements of the Kazakhstan Mortgage Company" receive a risk weight of 50%; all other residential mortgage loans carry a capital charge of 100%. Thus, implicitly, NBK differentiates risk in residential loans by LTV, as KMC purchase requirements include an LTV of 70 percent or less at this time.

The establishment of FGIC provides the National Bank of Kazakhstan with an additional tool with which to address risk and fine-tune its regulatory policy for residential mortgage loans. It also offers KMC an opportunity to expand the definition of the loans meeting its requirements. We have proposed that NBK explicitly include both the LTV level and MI in the risk weight decision for residential mortgage loans. The proposed risk weights would be:

(1) Risk weight = 50 percent for:

- Loans with LTV of .70 or less, meeting requirements of KMC
- loans with LTV > .70 having MI (FGIC)
- loans having MI offered by other insurers (with an FGIC equivalent capital and operating structure) or other acceptable credit enhancement at least equivalent to that offered by FGIC

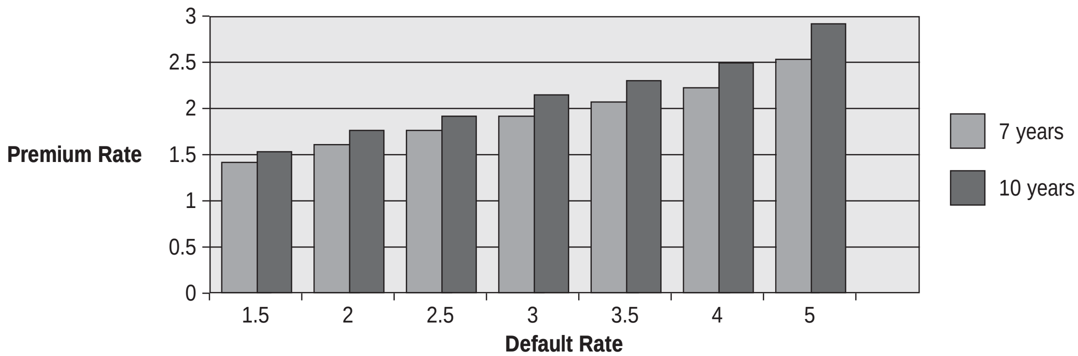
(2) Risk weight = 100 percent for:

- all other loans

The Business Plan and Pro Forma. A business plan and pro forma have been prepared based, in part, on the results of the mortgage market growth scenarios and the results of the Premium Model. In addition, assumptions have been made regarding financial returns from investment income on capital and reserves, the staffing requirements for FGIC, operating costs, claim costs, and so forth. The Business Plan will now be assessed and updated by FGIC's newly selected management.

"Selling" Mortgage Insurance to the Market. Finally, it was clear that in 2001, when this effort in Kazakhstan was initiated, that MI was a new concept in the transition nations. Considerable effort has been made to explain the role and benefits of MI to both the staff of National Bank and the lenders and to involve them in as many of the decisions as possible. Two Working Groups were established - one composed of legal experts to ensure that FGIC's charter and the Blanket Policy were in concert with Kazakhstan laws and lending practices, and the second, composed of lender representatives and the KMC, to address the details of the MI programs: coverage levels, LTVs, expected default rates, and underwriting norms. The Working Groups also played a major role in selection of the variable values used in the Premium Model for the three separate Kazakhstan economic scenarios. In addition to the Working Groups, we have conducted numerous information sessions, and done "live" runs with the premium model. Figure 1, which shows the variation in premium rates by default rate and loan term (this is illustrative

Figure 1
Premium Rate by Default Rate and Loan Term



only) provides just one example of the type of simulations that are developed at these information sessions. Holding constant the remaining variables in the "reference" set of user variables from the Kazakhstan market context, Figure 1 shows in the increase in the premium rate for the reference loan as the values for the default rate are changed. Thus, for a 7 year, 85 percent LTV loan, given a default rate of 4 percent (for the expected market scenario), the single payment premium is roughly 2.3 percent; at a default rate of 5 percent, the premium rates increased to about 2.55 percent.

7.0 Conclusions and Recommendations for Transition and Emerging Nations

Everyone is anxious to get FGIC up and running. The start-up assumptions will bear very close watching, however. As best as can be determined at the moment, the assumptions are sound. The analysis of the options model also seems to indicate that the mortgage insurance terms and implied risk are acceptable.[12]

An effective and efficient primary mortgage market can serve as an important engine for financial sector and economic growth. Despite the fascination that some developing nations have with establishing secondary markets, it is increasingly clear that solid and growing primary markets must come first. MI can play an extremely important credit enhancement role in developing primary mortgage markets, with benefits to borrowers, lenders, regulators, and the overall market.

The prerequisites for establishing MI are, in large part, simply the factors that make a primary market strong: a solid legal framework for mortgage lending, including effective foreclosure procedures; a market-driven and competitive banking sector; and effective processes for mortgage lending - underwriting, servicing, and information systems. It is also important to establish a supportive and financially conservative regulatory environment, addressing mortgage risk related to LTV and loans carrying MI overseeing both the banking and insurance sectors.

In conclusion, MI is a risky business even in developed economies. Thus, the risks of establishing MI in immature, volatile, geographically concentrated and small economies, especially if the banking sector is still publicly controlled and/or non-competitive, are significant. Leaving economic catastrophe aside, the MI company may face a serious moral hazard - taking on excessive risk - if banks insure only the more risky loans, and public MI companies may face pressure to segue into a non-commercial operating mode to support politically motivated social programs, resulting in unrecorded off-budget contingencies for the government. Thus, at a minimum, we recommend conservative capitalization requirements, monoline status, and top tier coverage (20 percent to 40 percent). If possible, it would be desirable to establish privately funded MI companies; however, this may be unlikely at present in all but the larger and more advanced emerging and transition markets. If a private MI company is not feasible, develop a public MI Company mimicking the structure, pricing, and operation of a private company. This will help ensure not only sound commercial operation, but facilitate privatization of the enterprise in the future.

References

[1] See Roger Blood, "Mortgage Default Insurance: Credit Enhancement for Homeownership". Housing Finance International, September 2001, Vol. XVI/No. 1; and David Liu, "Exporting Mortgage Insurance Beyond the United States, Housing Finance International, June 2000, Vol.XIV, No. 4. See, also, the IUHF Newsletter, July 2003.

[2] FGIC has been developed with the support of USAID's Financial Services Initiative Project in Kazakhstan, managed by the Pragma Corporation. The development work has been largely undertaken by Sally Merrill, The Urban Institute, and Douglas

Whiteley, an Urban Institute consultant. The Urban Institute has received invaluable assistance from Pragma's resident staff in Kazakhstan: David Lucterhand, COP, Steve Moody, Financial Advisor, and from the Kazak legal and financial experts on Pragma's staff. We are also indebted to assistance with the Premium Model from Paul Davenport, and for review of the overall effort by Roger Blood.

[3] See Buckley, Bob, Gulmira Karaguishiyeva, Robert Van Order, and Laura Vecvagare, "Comparing Mortgage Credit Risk Policies: An Options Based Approach", The World Bank, February 2003.

[4] See David Liu, op. cit. and Eric Klopfer and Sacha Polverini, "GE Mortgage Insurance: Benefits of a Mortgage Insurance System in Transition Economies", presentation at the OECD Workshop on Housing Finance in Transition Economies, Warsaw, December 5-6, 2002.

[5] Claims may include not only the principal, but also delinquent interest, foreclosure and auction costs, and routine maintenance.

[6] See Michael Lea and Loic Chiquier, "Capital Market Funding in Emerging Markets" , slide presentation , AREUEA, Cracow, Poland, June 17, 2003.

[7] The Economist, "Finance in Kazakhstan, Small but elegant", May 31, 2003, page 75.

[8] The Economist, op.cit.

[9] A series of Issue Papers have been developed for Kazakhstan by Sally Merrill and Douglas Whiteley during 2002 and 2003, including: "Mortgage Insurance Premium Rate Model: Description of User Variables and Outputs", "Benefits of Mortgage Insurance for Banks and Borrowers", "Mortgage Insurance Options Addressing Needs Of Banks And Borrowers", "Capital and Risk Alternatives in Establishing Guarantee Insurance Fund for Mortgage Credit (FGIC)", and Regulatory Requirements for Mortgage Lending and the Basle II Discussions.

[10] An example relates to underwriting for borrowers who appear to have adequate income, but some or all of which stems from the informal sector (or whose businesses are not registered for tax reasons). For such borrowers, banks, now willing to lend with an LTV of 50%, might consider a somewhat higher LTV (70%?) with MI.

[11] Data prepared by GE Capital for presentation at the OECD Third Workshop on Housing Finance in Transition Economies, December 2002. There is also a very large literature on default risk in residential mortgage loans.

[12] Buckley, et.al., op.cit.