Chapter 4

Primary Mortgage Market Infrastructure

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This chapter addresses the key functions needed to support an efficient primary mortgage market: property appraisal; mortgage-related insurance products, including catastrophic insurance against earthquake and flood; and assistance with credit risk assessment via credit bureau information. The successful development of these support functions and of a sound mortgage market is mutually supportive. For example, the increasing sophistication of the appraisal industry both responds to, and supports, a growing primary market. Similarly, the demand for property insurance is a function of a growing mortgage market that enables insurers to achieve diversification and scale economies and offer reasonably priced products. As these support functions help to measure and share the risks, they shape the evolution of primary mortgage markets (needed before developing secondary mortgage markets) and they facilitate the penetration of housing finance markets through lower-income groups.

Yet, these support functions do not represent absolute prerequisites for would-be candidate lenders, as demonstrated by the Housing Development Finance Corporation (HDFC)—pioneer and now leader of housing finance

in India—which went forward without any of these supports in place (plus the critical lack of long-term funding, and of any enforceable foreclosure).

An effective appraisal process is arguably the most important of these functions. The accuracy of the valuation, through its impact on loan-to-value (LTV); the level of property insurance; and the validity of higher- or lower-risk weight assignments ultimately impacts credit risk, collateral risk, capital charges for banks, and improved affordability for the borrower. Building a credible appraisal industry, however, is demanding and takes time.

Credit bureau reports on borrower debt and loan repayment history are crucial inputs to determining credit risk through both the debt-to-income ratios and knowledge of past repayment behavior. Many emerging markets have trouble convincing leading market lenders and other suppliers of credit that information sharing is beneficial to all. Moreover, of course, newly established markets require time to develop credit histories and other information that ultimately offers the benefits of a full-service credit bureau.

Finally, mortgage-related insurance products are an important means of sharing collateral and credit risk and avoiding default and repossession. These include property insurance and mortgage life insurance, and, in a few countries, disaster insurance. Property insurance should clearly be mandatory, and fortunately, this is generally not a difficult insurance product to develop. Similarly, various approaches exist for mortgage life insurance products. In contrast, developing catastrophic risk insurance in countries prone to natural disasters such as hurricanes, floods, or earthquakes has proved to be a very daunting task, even in developed markets. A few higher-income emerging markets are paving the way, however. These products differ from mortgage default insurance (which shares credit risk with lenders [chapter 13]) developed in some emerging markets.

Worldwide trends, especially in appraisal, but also in credit information and disaster insurance, will assist emerging markets in developing effective support functions. These trends include the following:

- international efforts to standardize and improve appraisal methodology and certification of appraisers;

- development of more complete databases and IT platforms, leading to use of quantitative methods and modeling in both appraisal and credit scoring (many countries still lack any useful database on housing markets and prices);
- establishment of credit bureaus in many emerging and transition markets; and
- slow but steady progress in developing viable approaches to catastrophic risk insurance, combined with increased access to international reinsurance for emerging markets.

There has been worldwide movement toward standardization and conformity in appraisal methodology and appraiser qualifications. Also, although less widespread to date, credit scoring has become more prevalent with the use of consistent, quantitative estimates of credit risk. The reasons for this push are compelling. As funding of mortgage loans in both local and international capital markets becomes widespread, rating agencies and investors alike demand consistent underwriting information in valuing the portfolios. Similarly, as implementation of Basel II proceeds, lenders' capital requirements on residential mortgages will be influenced by obtaining the lower-risk weights on qualifying loans; this, in turn, demands consistency and conformity to accepted standards of valuation and underwriting.

Finally, although numerous emerging and transitioning nations are in the process of developing secondary markets based on mortgage-backed debt products offered in local or international capital markets, there is increasing realization that the primary market must exhibit effective standards before a secondary market can thrive. This implies sound and transparent approaches to controlling credit and collateral risk via good appraisal methodologies, credit information, and support from insurance products offered by appropriately capitalized and regulated insurers. In sum, a sound primary market and prudent underwriting depend on a solid infrastructure able to value and protect collateral and to determine the relative worthiness of would-be borrowers.

Appraisal

The Importance of Sound Appraisal

An accurate assessment of the value of residential real estate may be the most crucial support function in mortgage lending. First, without consistent and accurate appraisal to guide LTV decisions, lenders cannot achieve their desired distribution of risk and portfolio size. The level of LTV has been shown to be the single-most-important predictor of default, and thus the accuracy of the valuation is key to knowing "true" LTV levels. Without this assurance, "real" LTV levels in emerging markets are likely to be lower than what might be expected, because risk-averse lenders reduce the appraised value by a significant percentage (the so-called "haircut") or rely on their clients to pay a higher price than what is officially declared to the seller or developer. Second, capital market funding, especially if internationally accepted ratings are sought, will be much more difficult without acceptable appraisal practices among the underwriting standards. Finally, the valuation is again linked to collateral risk, as it may form the basis for the level of a homeowner's property insurance coverage.

In the last 15 years, appraisal quality and methodologies have received a great deal of attention in the United States and throughout Europe. A number of real estate crises have reemphasized the importance of competent appraisal practices: the U.S. savings and loan crisis of the 1980s, real estate asset bubbles in various OECD countries and the Asian collapse in the 1990s. As a result, the U.S. and European appraisal industries have developed more stringent standards for methodology, certification, and ethics, which are now contributing to improvements in appraisal practices worldwide.

The strong push to standardize appraisal has spread to numerous emerging markets. As noted, the "internationalization" of capital market funding of mortgage lending requires standardized and transparent underwriting criteria, especially if rating agencies are involved. In addition, under Basel II, regulators are looking to standardize the risk-weight treatment of various categories of mortgage lending, and receiving the lower recommended risk-weight assignment will require adequate valuation processes. Finally, the appraisal standardization effort joins a broader effort to standardize financial-sector functions, such as international accounting and regulation.

Developing an Appraisal Industry

A number of important elements are required in developing an effective, transparent, and professional appraisal industry. These include the following:

- adherence to internationally accepted norms of appraisal methodology;
- adequate accreditation standards and educational and professional training opportunities under which a group of appraisal professionals can emerge, and also participate, in ongoing educational opportunities;
- independence from parties to real estate transactions and acceptance of an accepted code of ethical conduct;
- appropriate fee structure
- appropriate levels of government regulation and development of a structure of taxes and fees in real estate transactions that support transparency and honesty; and
- a professional association of appraisers responsible for enforcing these requirements.

International Standardization of Appraisal Methodology

For the last two decades, appraisal methodologies and valuer qualifications have become more standardized and codified, providing an important benefit to development of appraisal competency in emerging markets. Several major groups have played important roles: the International Valuation Standards Committee (IVSC),[1] the Royal Institute of Chartered Surveyors, the U.S. Appraisal Institute, the U.S. Appraisal Foundation, and The European Group of Valuers Associations' development of the International Valuation Standards has been guided by three main principles:

1. An IVSC publication, *International Valuation Standards, Sixth Edition*, 2003 (International Valuation Standards Committee 2003), is an important international documentation of valuation concepts and valuation codes of conduct. The latest edition also contains a white paper, "Valuation in Emerging Markets," which is intended to assist valuers in emerging markets and guide development assistance efforts by national institutions, IFIs, and other donors.

- facilitating cross-border transactions in international property markets by promoting transparency in financial reporting and reliability of valuations performed to secure loans and mortgages;
- serving as a professional benchmark for valuers around the world; and
- providing standards of valuation and financial reporting that meet the needs of emerging markets and newly industrialized countries.

Market Value (MV) is the approach recognized by IVSC, the Appraisal Institute, the Royal Institute of Chartered Surveyors, and many other EU and OECD countries.[2] MV is the standard adopted by numerous emerging markets as their benchmark as they develop their appraisal industries. Market value is defined as the estimated amount for which a property should exchange on the date of valuation between a willing buyer and a willing seller in an arm's length transaction after proper marketing wherein the parties had each acted knowledgeably, prudently, and without compensation. MV includes the cost approach, sales comparison approach, and income capitalization approach. For residential real estate, the sales comparison approach forms the key basis of valuation, and secondarily the cost approach is a basis of valuation; for commercial real estate, in contrast, the income capitalization approach is paramount. Unlike larger and riskier loans to finance commercial property, single-family mortgage loans normally do not require any costly renewal of a detailed appraisal, as long as the portfolio performance is satisfactory.

The move to standardize appraisal within the EU has revealed a difference in the appraisal methodology used in Germany, Austria, and Hungary, among others, which rely on a concept called mortgage lending value (MLV) to appraise the collateral of the mortgage loans that back covered mortgage bonds. As defined by IVSC, MLV is a "value at risk" concept: the valuer makes a "prudent assessment of the future marketability of the property by taking into account the long-term sustainable aspects of the property, the normal and local market conditions, and the current use and alternative appropriate uses of the property."

2. For detailed information on the definition of market value, see IVSC and Appraisal Institute publications, available at www.appraisalinstitute.org, and the Royal Institute of Chartered Surveyors' "Red Book."

According to the German Pfandbrief Association, MLV is based on the following principles: assessment of future marketability, elimination of speculative elements, long-term sustainable use of the property, and considerations of the conditions of local real estate markets. Thus, MLV introduces into market value the notion of "smoothing" of market trends, rents, and yields, in order to eliminate some cyclical effects inherent to real estate markets, and to provide a more conservative estimate for the purpose of rating high-quality and long-term covered bonds. MLV is a more conservative concept than MV, as implicitly recognized by the Basel I Accords.[3]

Does this dual approach between MV and MLV matter for emerging economies? A country like Poland uses both methods, which simply mirrors the fact that mortgage lending is done by both universal banks (which use MV) and specialized German-style mortgage banks (which use MLV). As noted, pressures to define a single international standard are being driven by the global rise of mortgage-backed securities (residential mortgage-backed securities [RMBS] and covered bonds), and by the risk-based approach of Basel II, in which the LTV is of paramount importance. Most emerging nations have adopted the MV approach, which had emerged as the worldwide standard, probably because of its operational simplicity in countries where no historical data records are required for MLV. On the other hand, smoothing out some conjectural short-term fluctuations through collateral prices is a laudable purpose for assessing the quality of long-term mortgage securities. This point has gained visibility through the ongoing adverse cycle in the United States, where the market values of housing assets related to subprime loans are rapidly declining with adverse effects on the value of residential mortgage backed securities. Yet, parties other than appraisers may be better positioned to forecast real estate cycles and determine corrective discounts (MBS arrangers, rating agencies, or regulatory authorities).[4]

Both MV and MLV have valid advantages and disadvantages, and it is likely that countries that have historically used MLV will continue to do so, as least so far as it is a regulatory requirement for their covered bonds. The

3. For commercial loans, the preferential risk weight treatment (50 percent) is only accorded if the loan does not exceed 50 percent of MV or 60 percent of MLV.
4. The German regulatory authorities periodically revisit the minimum discount rates applied by appraisers.

MV-MLV duality matters less as long as it is clear to lenders and investors of mortgage-backed debt which approach is being used.

Appraiser Qualifications, Appraisal Associations, Independence, and Ethics

The key international appraisal organizations strongly emphasize the importance not only of establishing methodological standards, but also of ensuring more professional implementation and enforcement. The issues include establishment of self-regulating professional bodies, certification requirements, appraiser independence, disciplinary procedures, and professional indemnity insurance.

Issues of ethics and appraiser independence have received international attention. Both European (IVSC) and United States (Appraisal Institute) associations have published codes of conduct for appraisers. Appraiser independence from the control of both borrowers and lenders has been addressed worldwide, thus requiring the proper incentives for the appraiser to perform any unbiased valuation. In general, appraisals should be a credit administration function, most appropriately controlled by the credit risk or credit policy functions of the lender, not the credit production (loan officer) staff. Ordering and review of appraisals should be located away from the "hands, eyes, and control" of the loan staff. These principles are implemented as rules or at least as self-regulatory codes of conduct in several emerging markets (for example, Bank of Thailand appraisal rules for loan provisioning purposes). The increasing importance, however, of mortgage brokers, who are not subject to the same compliance rules as banks, continues to be a grey area.

While meeting the above-mentioned principle of independence, many lenders fear that the collateral value may be over-appreciated by external appraisers paid by borrowers, who may shop around to obtain the highest valuation. Therefore, even when contracting external certified appraisers, banks should keep sufficient in-home expertise to review the work of outside appraisers. They may also use statistical valuation models (see below) for pre- or post-quality control.

Quantitative Appraisal Models and Real Estate Data

Most emerging countries are confronted by a lack of reliable data on the evolution of housing prices and rents, thus affecting the quality of any professional appraisal, whatever the methodology or model. Beyond the data collected from or through official sources (registration offices, tax authorities, public housing finance institutions, and so forth), vital information must also be gathered from the market operators (appraisers, developers, realtors, banks, brokers, and so forth). In many emerging economies, market players are reluctant to share any information, although all parties would collectively gain from an effective real estate information center. Databases actively supported by market players (for example, Poland) perform better than those only supported by the public sector.

In countries where quality data can be gathered on a large scale, statistical models of valuation—automated valuation models (AVMs)—are increasingly utilized in developed economies, where real estate databases have become more widespread and accessible and have supported the development of complex AVMs and house price indices (HPIs). The United States, Denmark, Germany, Spain, and the United Kingdom are using these methodologies, and elsewhere in Europe AVMs are in the development phase.[5]

There are a number of approaches to AVMs: hedonic indices, repeat sales methods, and various hybrids of these. These models have a number of useful applications: mass valuation of real estate for tax purposes, valuation for development of HPIs, assessment of the error variances of conventional appraisals (quality control), loss mitigation analysis, and, as noted above, internal bank review and portfolio valuation. While the statistical aspects of the various models have advanced, the data quality and quantity for calibrating and testing them—across time, location, and property details—still determine their utility.

5. See Calhoun 2001; EMF 2000b; and Bates, Johnson, and Brzeski 1999.

The Challenges of Establishing an Appraisal Industry in Emerging Markets

The development of effective appraisal methodology in emerging markets faces numerous challenges and is inevitably a long-term process. Some of the many issues include the following:

- Emerging markets generally lack a sufficient number of adequately trained inspectors, especially those with all-important on-the-job experience. Appraisers are often engineers, trained in the cost replacement methodology, although estimation of MV for residential properties using the "comparables" MV methodology is the priority.
- There is no overview of the broader market and its trends on which to base a comparable estimation. Data are generally held by individual appraisers, realtors, and banks. Large databases, such as the Multiple Listing Service (MLS) in the United States, do not exist. Thus, even when appraisers are trained in the theory of market valuation, they are limited in their ability to put it into practice, especially effective utilization of the comparables methodology and the development of computer models. Commercial databases are unlikely to come into being until realtors, lenders, and appraisers recognize the benefits from cooperation and follow defined "rules of the road" for exclusivity and cost-sharing arrangements.
- Actual transaction prices may not be recorded in an effort to reduce the taxes and fees often levied on transactions; this renders the data less useful than would be the case if the true relationship between market price and the characteristics of the property could be studied and ultimately used to develop hedonic models.
- Appraisal associations must be established that create effective governance conventions, including rules for independence from lenders and buyers. A fee structure must be established that is "flat"; that is, does not represent a proportion of the valuation. The issue of independence from lenders, or from the banks' lending officers, or from developers—the official sale price of a newly built unit not always reflecting the actual market value—also needs more attention. Appraisal associations in most emerging countries have not managed

Box 4.1. Developing the Appraisal Industry

The Polish Association of Property Appraisers and the National Association of Romanian Valuers, the Romanian appraisers association, have both developed good appraisal industries in a limited time frame, having made good use of donor technical assistance and membership in international appraisal organizations. U.S. and British standards were used for licensing requirements, which include a college degree, specialized education, and on-the-job training. Poland's appraisers are trained in both the MV and MLV methodologies. In contrast, although the mortgage market is growing rapidly, there is no formal association of appraisers in India. India's premier housing lender, HDFC, handles the appraisal process as an in-house function. Over the years, an extensive centralized property database has been developed that can be tapped by HDFC's entire network of offices. In certain cases, independent appraisers are consulted, but it has been a conscious decision not to outsource this critical function.

yet to become credible self-regulatory bodies, capable of granting and revoking licenses, taking sanctions, providing training to their members, enforcing codes of conduct, and so forth.

- Appraiser fraud is an issue in both developed and developing countries. For example, "flipping" refers to the practice of buying a property at the market price, getting an appraiser to inflate the value, and reselling at the inflated price. While AVMs may be one approach to reducing such fraud, the requisite databases generally do not exist in emerging markets, as discussed. There is no easy fix to the problem. Requirements must be in place for minimum standards in training, experience, and adherence to international valuation standards, with offending appraisers subject to civil and criminal penalties. In addition, banks can use trusted, licensed appraisers to perform periodic spot checks.

As noted, one result of these valuation problems is the lender "haircut." Thus, a valuation, whether done by bank appraisal staff or an independent appraiser, is often arbitrarily reduced by a significant percentage (say, 15–30

percent) in order to compensate for unknown appraisal error. As a result, true LTVs are often lower than the stated value, which hinders both development of the MV approach and reduces affordability for many would-be buyers. Much can be gained, however, from the substantial international efforts noted above in standardizing methodologies and certification procedures.

Mortgage-Related Insurance Products

This section addresses three mortgage-related insurance products: property insurance, mortgage life insurance, and catastrophic insurance, which is most commonly utilized to assist against the devastation of earthquakes, floods, and hurricanes. Property insurance is now available in many emerging markets; it can generally be developed without significant delay as both mortgage markets and the insurance sector mature. Property insurance is usually the first insurance product to become a mandatory underwriting requirement for mortgage loans. Life insurance required for a mortgage loan can take two forms: a general life insurance policy or a life policy specifically geared to pay off the mortgage in case of the borrower's death or incapacitation; this latter is referred to as mortgage life insurance. This product, too, can generally be made available as a country's insurance sector matures. In contrast to these insurance products, disaster insurance is now available in only a handful of emerging markets. Structuring and funding disaster insurance is, in fact, a worldwide problem for developed and emerging markets alike, as it requires design of appropriate roles for government, more mature local commercial insurers, and international reinsurers, all in a complex context of ex ante funding strategies, risk modeling, and disaster mitigation planning.

Property Insurance

Property insurance is generally mandatory in developed markets, whether as a result of regulation, commercial practice, or both. For example, most bank regulators would cite mortgage lenders making loans without property insurance as an audit deficiency—that is, bad lending practice. Property

insurers are generally multi-line insurers, offering other types of insurance such as car and commercial insurance; costs are reasonable, as a function of both scale and competition.

The most common, and most important, type of property insurance is for loss due to fire. Most lenders require minimum coverage amounting to the replacement cost of the structure, not including the value of the land. There are several types of policies, including fixed value and escalating value, the latter being adjusted with inflation or a construction-cost index. Lenders will insist that they are jointly named in the insurance contract or that their "interest" is noted. The initial amount of property insurance is highly dependent on the appraisal process.

Homeowner packages are also provided, insuring the contents of the homes against theft. Natural disasters such as tornadoes, lightning, and damage from internal water pipes may also be covered under some standard policies, as might structural damage under a home-builder warranty for new homes or resulting from termites, and so forth. Other types of protection, however, such as flood and earthquake, are "standard exceptions" in nearly all property insurance contracts, and are covered—if at all—in some type of disaster insurance, as discussed below.[6]

Whether formally regulated or not, property insurance is crucial in guarding against collateral risk. An increasing number of developing countries now require a generic homeowner's policy, particularly for fire insurance. The problem, however, is that market penetration is still very low, generally less than 5 percent of households, for example, in countries such as Turkey, Romania, and Mexico. In contrast, Colombia represents a "best practice" exception, with penetration of 30 percent for both general property and earthquake protection, as all mortgage lenders require such insurance. As a counterexample, however, property insurance is not required in the Philippines, which despite having a reasonably well-developed mortgage market, does not have adequate risk management for residential and commercial properties.

6. The EBRD *Mortgage Loan Minimum Standards Manual* indicates that both property insurance and mortgage life insurance should be regarded as a mandatory minimum standard; best practice would also include contents insurance (and mortgage default insurance, discussed in Chapter 13).

The problem is due, in part, to low income. Research has shown that the incidence of coverage increases as a country's income (per capita GDP) grows: there is a 1.3 percent increase in property insurance coverage for every 1 percent increase in GDP.[7] As noted in the introduction, the development of property insurance and the maturation of the mortgage market are mutually supportive. On one hand, mortgage markets require property insurance to reduce collateral risk, and on the other hand, a growing mortgage business provides the necessary incentives and scale for development of cost-effective homeowner property-protection packages. Higher insurance costs go hand in hand with limited scale and penetration, and low per capita income. As both the mortgage market and the insurance industry grow and become more sophisticated, competition, risk analyses, and increased scale will contribute to more efficient pricing. Regulators in emerging markets under a "best practice" approach should be encouraged to mandate property insurance as soon as possible.

A number of issues must be addressed in the course of making property insurance an integral part of lending, especially in the early phases of mortgage market development. These include the following:

- added expense for moderate-income borrowers, especially in the early phases of insurance industry development of the product;
- the adequacy of the appraisal function in providing an adequate measure of property value and of building standards and their enforcement in reducing risk;
- the adequacy of capitalization in the insurance industry and other regulatory parameters, such as solvency ratios, and appropriate insurance regulation (particular supervision of solvency, issue of "captive" insurers owned by lenders, and geographical dispersion).

Mortgage Life Insurance

Mortgage life insurance, a rapidly growing product line around the world, is typically life coverage equal to the outstanding mortgage loan balance at the time of death. The family or estate is thereby able to retain ownership

7. See the discussion in Gurenko and Lester 2004.

of the home without the responsibility of making the mortgage loan payment. Coverage is generally only for the primary borrower; joint coverage is available but not widely used. Although mortgage life insurance could be mandatory by law, it is generally simply dictated as commercial practice. When a voluntary program is in place, the premium rate is generally higher to allow the lender to earn a commission. Voluntary programs would usually have higher claims experience, since healthy people may be less likely to buy coverage.

Mortgage life insurance is available in a number of the more developed markets in Latin America, Asia, and Central and Eastern Europe. For example, Malaysia has had mortgage life insurance for about 10 years; although it is voluntary, more that half of the borrowers elect to buy it. Indonesian lenders also promote mortgage life insurance, with the premium included in the loan amount. Romania and Bulgaria provide other examples. A number of issues should be addressed in considering the merits of mortgage life insurance in emerging markets:

- Should the product be voluntary or mandatory?
- Are insurers sufficiently well capitalized and prudentially regulated?
- Are there supply constraints, such as appropriate actuarial tables? Availability of adequate medical exams?
- Should the policy cover limited or temporary disability as well (how to control)?

In the U.S. market, mortgage life insurance is a voluntary product. As noted above, however, the EBRD *Mortgage Loan Minimum Standards Manual* (2007) for emerging markets lists mortgage life as a minimum standard requirement. Clearly, mortgage life insurance needs adequately capitalized and regulated insurers, just as for property insurance. The issue of mandatory versus voluntary coverage is more difficult. Mortgage life insurance can be a useful additional tool in controlling credit risk, especially in newly expanding markets, but it does not substitute for other reforms needed to manage credit risks (effective foreclosure, credit bureaus, and so forth).

Catastrophic Insurance

Natural disasters, by their nature, are events with a low probability of occurrence and a high level of loss given an occurrence. Developed markets rely on the international reinsurance market to transfer and spread these risks.[8] Even in developed countries, however, private disaster insurance is not comprehensive. The potential losses can be so large or indeterminate that commercial insurance markets cannot provide sufficient coverage at acceptable prices. This has resulted in some countries supplementing the private market with public programs. Examples include France, New Zealand, the United States, Norway, and Taiwan. In addition, not all types of disasters are insured. While flood insurance is available (and mandatory in floodplain areas) in the United States, for example, earthquake and hurricane insurance may be very difficult to obtain, as risks are both high and geographically concentrated. Thus, given the limits of commercial programs, individual states have stepped in, with Florida providing hurricane insurance and California earthquake coverage (even so, only 10 percent of Californians have earthquake insurance). Finally, significant moral-hazard problems exist with earthquake and flood insurance, stemming from insuring buildings in areas expected (or known) to have higher probabilities of disaster, and this is likely to be an issue in emerging markets as well.

Catastrophic insurance coverage against natural disasters, most frequently against loss from earthquakes, flood, and hurricanes, is far less common than property insurance among developing nations. For example, whereas disaster insurance in countries such as the United States and France cover 40 to 100 percent of loss from some types of natural disasters, in developing markets less than 1 percent of losses are insured. Furthermore, emerging markets are far more vulnerable to disasters, for reasons stemming from both geography and limited financial and real estate sector development. While the absolute economic costs of natural disasters in developed countries are higher than in emerging markets, the relative cost of disasters is generally greater in developing markets, where infrastructure and buildings are less resilient. For example, the 1985 earthquake in El Salvador destroyed 27 percent of GDP and losses from flooding in Bangladesh have resulted in losses as high as 17

8. International reinsurers include Munich Re, Swiss Re, Lloyds, Berkshire Hathaway, and Axa Re.

percent of GDP.[9] The 2004 tsunami in the Indian Ocean has tragically underscored the vulnerabilities in Asia.

A number of countries must deal with natural disasters relatively regularly, including Turkey, the Philippines, India, and Bangladesh. Yet, disaster coverage in emerging markets is limited by both low income and the relatively underdeveloped state of their insurance industries, which makes it difficult to transfer risk to the international insurers. As a result, because risks (and thus costs) cannot be spread internationally, governments in emerging markets are unlikely to engage in ex ante risk management. They respond to natural disasters after the fact, relying on emergency funding and grants from donors and charitable organizations, although such Good Samaritan alternatives are not as effective as ex ante hazard-risk management.

Colombia, Turkey, and more recently Singapore provide best-practice examples of catastrophic earthquake insurance programs, while Romania, where earthquake risk is present but less serious, provides an example of insurers offering a variety of "package plans," including property insurance, mortgage life insurance (see box 4.2), and earthquake insurance. Other countries, such as Iran, are in the process of developing plans for disaster insurance programs, often with the assistance of the World Bank and other donors.

Emerging economies have much more work to do in developing disaster-coverage insurance products, in order to reduce long-term losses and reconstruction costs. In countries with high vulnerability to huge catastrophic events, there is a legitimate role for government to act as insurer of last resort. Care must be taken, however, to minimize the moral hazard inherent in government insurance. The cost for commercial insurers of keeping sufficient reserves ready and liquid would lead to huge sums in low-yield products, the opportunity cost of which would be charged to their customers. In Turkey, disaster insurance is affordable because of adequate scale and because capital costs are reduced by the government's backup guarantee against catastrophe.

9. Gurenko and Lester 2004.

Box 4.2. Examples of Property and Disaster Insurance

Turkey. Turkey provides a good case study of both the positive effects of policy development and the problems initially caused by limited mortgage and insurance markets. In 1999, only 2 percent of households in Turkey had property insurance. The Turkish Catastrophe Insurance Pool, a risk-sharing arrangement among commercial insurers, the government, and the World Bank, was launched in 2000, following the devastating earthquake in the Marmara Sea in 1999. As of early 2006, penetration for earthquake insurance had risen to 18 percent—and over 13 million houses are covered—making Turkey second only to Colombia in terms of penetration.* Commercial insurers in Turkey write the earthquake policies but do not cover the risk; rather, most of the risk is passed on to international reinsurers, although Turkish insurers can provide additional coverage in excess of that offered by the pool.

During its development, the design of the Turkish Catastrophe Insurance Pool became a political issue: whether or not to make the insurance mandatory. The decision was taken to make coverage mandatory, but problems remain in enforcing this regulation. Turkey does not insure properties worth less than $5,000. Insurance is concentrated in Istanbul and Ankara, and the insurance markets in these cities are competitive. Penetration, however, varies widely—from 8 percent to 26 percent in different geographic areas. In addition, the renewal rate is only 33 percent, which the Turkish Catastrophe Insurance Pool intends to improve.

Colombia. Mortgage lenders in Colombia require both property and earthquake insurance; 30 percent of households are covered—a major exception to the low penetration in other emerging markets. In contrast with Turkey, Colombia's earthquake program is entirely commercial; policies are sold to reinsurers as in Turkey but there is no government disaster pool. The law requires that lenders contract with licensed insurance companies to cover assets.

(continued)

* Also, see Ozay 2006 (available at http://www.ceemortgagefinance.org/). Ferhan Ozay is Executive Vice President of Garanti Sigorta A.S., the insurance company that recently won the right to manage the Turkish Catastrophe Insurance Pool via competitive bidding.

Box 4.2. Examples of Property and Disaster Insurance *(continued)*

Overall risk in Colombia is covered via two types of protection. First, life coverage is included as part of the insurance that covers the mortgage debt. Life policies with coverage for death and permanent incapacity correspond in their value to the outstanding balance of the mortgage, which is periodically updated. Second, earthquake insurance is generally an annex to a fire insurance policy, corresponding in value to the "destructible" portion of the property, determined by the average cost of construction of similar structures in the area where the insured asset is located. At the discretion of the debtor, it is possible to take additional coverage, for example, for explosion, terrorism, water damage, and flood. In practice, insured households prefer to take complete coverage.

Structures are covered under fire and earthquake policies with no restriction unless their insured value exceeds the capacity of the reinsurance, which is automatically contracted (the coverage is automatic once the mortgage credit is authorized by the bank). The life insurance must comply with the terms of the reinsurance contract in terms of the maximum value insured, and considering the age, health condition, and occupation of the debtor (which also determine the premium).

Romania. Several Romanian insurers offer package deals covering property and disaster insurance. The property insurance includes fire and water damage coverage (package A); package B adds supplemental earthquake coverage, and package C adds storms, floods, landslides, riots, and vandalism. Property insurance is mandatory, but the others are not. Premiums are determined by how many packages are to be in effect, and by type of housing and construction.

Title Insurance

Title insurance is insurance against loss from defects in title to real property and from the invalidity or unenforceability of mortgage liens, after a title has been recorded. It is meant to protect an owner's or lender's financial interest in real property against loss due to title defects, liens, or other matters. It will defend against a lawsuit attacking the title as it is insured, or reimburse the

insured for the actual loss incurred. Just as lenders require fire insurance to protect their investment, nearly all institutional lenders in the United States also require title insurance to protect their interest in the collateral of loans secured by real estate. The demand for title insurance has been mostly driven by the U.S. secondary-mortgage markets, as a requirement imposed by investors. As with mortgage insurance, the borrower pays the premium and the lender or investor receives the benefit in terms of cost and loss protection. The title insurance industry in the United States is quite profitable because of the accuracy of land registries in most jurisdictions and the widespread requirement for its use (even in cases of mortgage refinancing, new insurance may have to be contracted).

Although now available in many countries, it is principally a product developed in the United States mainly as the result of a comparative deficiency in U.S. land records laws. In most other developed economies, the land registration system sees the government determining in a conclusive way the title ownership and related encumbrances—any error made by the governmental office can lead to monetary compensation, but that aggrieved party usually cannot recover the property. By contrast, most states in the United States record documents without any official determining who owns the title or whether the instruments transferring it are valid, sparing the costs of legally skilled employees. But a third party must determine who owns the title by examining the indexes in the recorder's offices, scrutinizing the instruments to which they refer and making the determination of how they affect the title under applicable law. Title insurers perform these searches and make the determinations of who owns the title and to what interests it is subject. The insurance policies are fairly uniform and the insurers carry, at a minimum, the reserves required by insurance regulation to compensate their policyholders for their valid claims—notably important in large commercial real estate transactions. The policies also require the insurers to pay for the costs of defense of their insured in legal contests over what they have insured.

Title insurance has been introduced by U.S. companies in a number of emerging markets. Stewart Title offers insurance in 45 countries; however, their presence is often restricted to resort areas catering to foreign buyers. First American offers title policies in Asia, Europe, and Latin America.

In many emerging economies, title insurance is not a real prerequisite for developing residential mortgage markets, as lenders express confidence in the ability and performance of the individual attorneys they rely upon to examine title and mortgage documents prior to granting a mortgage loan. They can also rely on the conclusive determination by a government office that the recorded lien cannot be alienated. The product of title insurance may then be perceived as redundant or not worth its costs. A more serious threat sometimes comes from pre-registration issues with delays, costs, and uncertainties related to the transfer of title and granting of a mortgage lien, including the possible failure to register. Title insurance products cannot cope with that risk. The cases where a title is eligible to be registered but is subject to delay in establishing legal title and lien priority protection resulting from slow procedures for completing registration may correspond to an insurable risk, and gap insurance products may be developed during a transition phase until registration-process improvements bear fruits for lenders. Such was the case, for instance, in the late 1990s in Poland, at least in major urban centers such as Warsaw. In response, several private insurance firms began to offer a short-term "gap" insurance product to lenders whereby losses from borrower defaults that might occur during the registration delay period would be covered. The price of the product reportedly has dropped as a result of minimal losses and growing competition, and now costs about 60 basis points of the loan balance annually.

Credit Information Bureaus

The Importance of Credit Information in Mortgage Finance

Worldwide, credit information bureaus, which collect, maintain, and distribute data on borrower credit activities, are a crucial mainstay of underwriting for both consumer and small business loans. Known by a variety of names—for example, credit bureaus in the United States, credit referencing agencies in the United Kingdom, *centrale rischi* in Italy, or *Kreditschutzverband von 1870* (Austrian Credit Bureau) in Austria—credit bureaus are universal in developed economies and well integrated into the financial system as service bureaus for both lenders and borrowers. Increasingly, especially in the

last decade, credit bureaus are now operating in many emerging and transition markets, and efforts are under way to develop them in many more. Thus, credit bureaus are now operating in many Latin American countries and in some of the higher-income countries of Asia, the Middle East, and Central and Eastern Europe.

Numerous types of lending depend on credit bureau information, including credit cards, small business loans, and personal loans. Solid credit information is especially important to risk management in mortgage lending. Credit bureau information addresses two of the "three Cs" of mortgage lending—*credit* and *capacity* (while appraisal, of course, upholds the third—*collateral*). Credit bureaus provide important insight into both a borrower's ability to pay, as evidenced by their past and current indebtedness, and willingness to pay, as evidenced by their debt repayment history. In addition, credit bureaus may be able to shed light on the source of down payment. Without the ability to determine whether the down payment has come not from own savings, but is rather a loan from another bank, lenders are at much greater risk than would otherwise be the case.

Credit Bureaus in Developed Markets

In many OECD countries, credit bureaus are sophisticated, automated, fast, and efficient. Three large international credit bureau companies—TransUnion, Experian, and Equifax—are highly competitive and operate across numerous countries, including the United States and most of Europe. These companies have now also opened credit bureaus in several countries in Latin America, Asia, and the Middle East. In other countries, they have established partnerships and alliances; they may manage the credit information process, but do not own the credit bureau, or may be a joint owner or developer with other private entities or government agencies. These companies also compete for business with large financial-sector clients to serve as database managers and credit-scoring experts. Other credit bureaus also offer international services; Schutzgemeinschaft für Allgemeine Kreditsicherung (German Credit Protection Association; SCHUFA), the German credit registry system, for example, has a regional presence in assisting countries in Central and Eastern Europe (CEE).

Credit bureaus perform a variety of functions, generally serving as the main credit information sources in many countries, and are utilized by a large number of bank and non-bank lenders, as well as by households. They offer their clients credit reports, credit scores, credit-score modeling, and database management and interface, among other products. In the United States, there are also credit-score modeling experts who work with lenders, credit bureaus, and borrowers. Credit scores in the United States are often referred to as FICO scores, named after Fair, Isaac and Company, the company that pioneered the modeling process. FICO scores are fundamental to mortgage loan origination in the United States, and Fair, Isaac is expanding services abroad to emerging and developed markets, including Brazil and Germany, for example (Palla 2000).

The benefits of effective credit bureaus can be substantial. With regard to lenders, for example, one of the large international credit bureau companies claims that its credit information can decrease the proportion of bad loans in a lender's portfolio by 45 percent and credit card default by 40 percent.[10] Some banks are now basing servicing and delinquency strategies on credit scores.

Credit bureaus also offer borrowers and potential borrowers a wide variety of services. First and foremost, of course, persons can obtain (for a fee) their credit reports and credit scores. The bureaus also offer a variety of products to help the customer manage risk and get the best price for his or her credit, given his or her credit profile. Other services include "credit watch" and "score watch," a home valuation service for help in buying or selling, credit management services, a credit advice column, and information on the national distribution of credit scores.

Credit bureaus represent a critical part of a sound infrastructure for housing finance, but their usage should not be seen as a panacea or as a substitute for the many elements of a sound credit underwriting policy. For example, just before the crisis, the average credit score of successive generations of adjustable-rate subprime loans in the United States has been improving between 2005 and 2007, yet the resulting performance of these credit vintages as measured through non-performing loans has been worsening because of other prevailing risk factors like the decline of home prices.

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10. From the presentation by Experian: "How a Credit Bureau Enhances the Credit Approval and Risk Management Process," by John Hadlow.

Credit Bureaus in Emerging Markets

Credit bureaus have now been established in many emerging markets: Peru, the Czech Republic, Thailand, India, Turkey, Poland, Croatia, Mexico, and El Salvador, to name just a few. Many other efforts are under way, for example, in Kazakhstan, Slovakia, Egypt, Russia, and Indonesia. Other markets have had, or still have, a limited form of credit information, usually managed by the central bank. The central bank, serving as the regulator of the banking sector, collects information on bad debts and defaults, which it will generally share with the banking sector. This activity, in fact, has been the precursor to credit bureau formation in many cases, and central banks have often become supporters or partners in credit bureau efforts. Generally, however, central bank databases have been viewed as inadequate to support effectively an expansion of lending, consumer, and small- and medium-scale enterprise lending, in particular. Although the central bank approach varies from country to country, the following limitations have been repeatedly cited:

- negative-only information, that is, data is gathered only when a loan fails;
- information only from banks, and not from the wide range of other lenders and credit providers, including non-bank financial institutions such as building societies and finance companies, microfinance lenders, utilities, and department stores; and
- data recorded for "large" loans only. The cutoff levels are generally larger than most mortgage and small- and medium-scale enterprise loans would be, so nothing is recorded when these loans failed.

Developing a full-service credit bureau is a long-term process in emerging markets. There are numerous barriers, including the structure of the banking system itself. Where there are a few dominant players, they often resist sharing information. As discussed in box 4.3, the Croatian Credit Bureau had to overcome reluctance by the banks with dominant market positions to join. In addition, there may be restrictive bank secrecy laws and problems establishing unique customer IDs. There is also the problem of cost: developing a bureau is not inexpensive, and potential members may not see that the risk-reduction benefits will ultimately out-

Box 4.3. Croatian Credit Bureau Development: HROK

The Croatian Registry of Credit Obligations (HROK) was championed by the Croatian Banks Association, which had to work diligently to overcome reluctance by banks with a major share of the market to become members. HROK, a private company owned by its member banks, was developed with assistance from TransUnion's internationally utilized systems, combined with European and CEE knowledge and support from CRIF, an international credit reporting service that operates International Institute for Risk, Security and Communication, the main Italian credit bureau. HROK will collect positive and negative data and will begin with banks and with information on numerous types of installment loans, credit cards, credit lines, and factoring; it will later expand to include other credit providers.

Source: Bohacek 2003.

weigh the cost. The Thai Credit Bureau has had to overcome barriers of both cost and lender reluctance.

The Indian credit bureau's history points to the importance of credit bureau information to mortgage lending. HDFC, India's groundbreaking mortgage lender, set up India's first credit information bureau in 2001 in partnership with State Bank of India (India's largest commercial bank), Trans-Union International, and Dun & Bradstreet. The Credit Information Bureau (India) Limited deals with both positive and negative information that is sold to its members. Currently, there are 87 credit grantors. Credit Information Bureau (India) Limited launched the operations of its consumer credit information bureau in April 2004. While the process of populating the database is still under way, the bureau will be useful for HDFC to tap into a larger customer base without compromising on credit quality.

Finally, credit bureau development in emerging markets has generally been taken one step at a time, often beginning only with banks and offering only basic information. Development plans, however, should (and generally do) contemplate expanding membership to multiple credit providers and providing additional and more sophisticated products addressing credit risk, so that a full-service structure is envisioned from the beginning.

What features would a comprehensive credit information service exhibit? This has been widely discussed in countries where credit bureaus have been under development. The issues include the following:

- *Coverage:* Will there be banks only or a wide sweep of lenders?
- *Reciprocity:* Are only those supplying data permitted to purchase data?
- *Ownership:* Will it be private or public or mixed?
- *Management and development:* Do it yourself or use an international company?
- *Data types:* Will both "negative" and "positive" information be covered?
- *Borrower types:* Will they be individuals, small businesses, and companies, with links between them?
- *Data format, standardization, and volume:* What scope is hoped for?
- *Bank secrecy rules and borrower ID issues:* Do they limit scope and operations?
- *Updating and accuracy:* How frequently are the data updated?
- *Consumer protection:* Are legal safeguards in place to enable correcting errors?
- *Modeling:* Will credit scoring ultimately be addressed?
- *Competition and efficiency:* Is the bureau a monopoly and expected to remain one?

Placed against these issues, credit information bureaus, and especially newly formed ones in emerging markets, face ongoing challenges. Comments gleaned from recent experiences in emerging markets (including Poland, Croatia, and Thailand) include the following:

Membership

Information should be collected from all banks, especially the major lenders, and ultimately include all alternative lenders: non-bank financial institutions, retail stores, finance and leasing companies, micro-lenders, utilities, and so forth. Reciprocity is a cardinal principle: only those providing data are permitted to purchase it, and they must have a legitimate purpose in requesting

information. Staged development is important: begin with basic products, and then expand into value-added services such as scoring and antifraud. Should participation by lenders be obligatory, and if so, which lenders?

Ownership

Whether a credit bureau should be state-owned or private (a mix of the two), and the extent to which it is user owned, has been one of the most widely debated issues in emerging markets. Although there is no hard-and-fast rule, the majority of credit bureau experts and users worldwide opt in favor of full or majority private ownership. As with the financial sector overall, best practice is often not for the government to provide prudent regulation and a legal framework, but for the private sector to own and manage the credit bureau. Nearly all credit bureaus in the developed world are privately owned (with the notable exceptions of France and China).

Management and Development

Should a country try "do-it-yourself," or buy a black box? The issue is difficult: reinventing the wheel can be as costly in the long run as engaging a seasoned international firm. Another cardinal principle is economic justification. To be successful, the cost of establishing the credit bureau must be justified in terms of reduced risk and improved efficiency. Ongoing management poses similar issues, and emerging markets exhibit a wide range of solutions. As noted, the international credit bureau companies have affiliates in many countries where they do not own the bureaus, and most countries seek their help; they may be under contract to assist in development, and may or may not conduct ongoing management.

Data

Both negative and positive data should be collected—for example, all loan and credit types and amounts, and payment histories. Without this collec-

tion, lenders cannot compute capacity to pay and willingness to pay, or consider various "warning signs," such as obtaining many new credit cards. Other data may include public data, such as bankruptcies, pledges of real estate, and existing databases such as those from the central banks. Development of credit scoring capability, or providing banks with the information to do so, will go hand in hand with increased sophistication of the data and the data standardization process.

Consumer Protection

Consumer protection is an important issue that should be an integral part of any credit bureau development, including regulatory oversight, privacy protection, legitimate use criteria, and error corrections. Misinformation and mistakes have proved to be serious issues in the use of credit bureau information, as individuals and others may be wrongly denied loans or offered less advantageous terms than deserved. Individuals should have the right to access their data, to correct mistakes, to know the reason for rejection, and to know who has requested their information; the information must also be secure to fight against identity fraud. This is, however, an often-overlooked area in emerging markets. Credit bureau design should incorporate technological and organizational security and confidentiality. In Croatia, for example, the credit bureau has a control committee that includes both Central Bank and user representatives.[11]

In sum, credit bureaus have the potential to offer significant benefits to lenders, borrowers, and the government. For banks, costs should be reduced through both improved efficiency and reduced losses. Benefits to borrowers include easier access to financing, help in preventing over-indebtedness, and lower rates; bank spreads should fall (at least in a competitive lending environment). Regulators and the economy should benefit from more prudent lending, improved supervision potential, facilitated risk classification, and a reduced moral hazard of good borrowers "paying" for bad borrowers.

11. Bohacek 2003.