FEBRUARY 08

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A bridge linking housing research and practice

volume 5, number 2

A National Crisis with Global Impact

At our headquarters in the nation's capital, HUD's Office of Policy Development and Research (PD&R) recently assembled a panel of experts in international housing finance for a roundtable discussion of the subprime mortgage crisis. Moderated by Britt Gwinner, Lead Housing Finance Specialist for the World Bank, participants provided a global perspective on current and future prospects of the mortgage market and rising foreclosure rates in the United States. Panel participants included David Chow of the China Development Financial Holding Corporation of Taiwan, Alan Elizondo of Mexico's Sociedad Hipotecaria Federal, Gregory Ingram from the Lincoln Institute of Land Policy, and Allen Frankel, a consultant with the Bank for International Settlements.

Secretary Alfonso Jackson convened this roundtable to examine global implications of the housing market slowdown and rising foreclosure rate. In his opening remarks, the Secretary observed that the subprime market is "not just a housing issue, but an economic issue. The housing crunch affects consumers, banks, credit markets, and job creation throughout the world."

Secretary Alfonso Jackson (at podium) addresses participants at the International Housing Finance Policy Roundtable.

To frame the dialogue, Moderator Gwinner noted that although the U.S. subprime market is relatively small in the larger scope of international housing finance, the ripple effect of the subprime crisis is significant. It focuses worldwide attention on what went wrong, how the crisis can be resolved, and how to safeguard markets by preventing a recurrence. Mr. Gwinner suggested that some of the basic causes of the crisis appear to be both classic and avoidable (such as the lack of thorough due diligence on the part of investors), but other elements were unexpected and need to be better understood. Since developing nations have traditionally turned to wealthy nations for models when building their housing finance markets, analyzing the present crisis is of particular interest to the developing sector.

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HUD has taken steps to help qualified homeowners avoid foreclosure. Further information is available at www.huduser.org/whatsnew/intlhsgfin.html.

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PD&R U.S. Department of Housing and Urban Development Office of Policy Development and Research

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Alan Elizondo, Chief Operating Officer of Mexico's Sociedad Hipotecaria Federal, discusses the downside risk of global capital markets.

In exploring what led to the present crisis, discussants identified some contributing developments of the last 10 to 20 years:

- Declining international capital markets' real interest rates;
- Investor dissatisfaction with low returns, prompting development of potentially volatile new products with higher yields and greater risks;
- Rising home prices, stimulated by a combination of low interest rates, income growth, and competition;
- Demand by U.S. households for residential mortgage credit, stimulated by these lower interest rates;
- Rising rate of construction costs that exceeded income growth, both of which were surpassed by a sharp increase in land prices; and
- Restrictive land use regulations that fueled soaring housing prices and the demand for subprime loans.

These conditions form the backdrop for the now evident—and unfortunate—consequences of combining higher risk financial products and lower mortgage underwriting standards. Outcomes resulting from a lack of foresight, insufficient due diligence, and fragmented regulation include a global capital market at risk, an opaque and uneven flow of information between buyers and sellers, disillusioned foreign investors, and a reduced demand for U.S.-based securities. Income growth in developing countries has slowed and the U.S. economy is experiencing the effects of discrepancies in rates of spending, perceived wealth, and income growth. In tandem with higher borrowing costs, these conditions jeopardize a balanced flow of international capital. The resulting distortion and contagion in global markets is leading central bankers to regard this as a major crisis; one that encourages them to play a larger role in guiding housing markets.

What Now?

Proposed remedies for resolving the crisis and safeguarding future markets revolve around some modification of U.S. mortgage institutions to improve due diligence, regulatory oversight, and risk management activities. First, it was suggested that consideration be given to strengthening loan origination standards. It was recommended that mortgage contracts to nonprime borrowers be kept simple, that full disclosure to borrowers be required, and that borrowers qualify for credit at the fully phased-in interest rate, rather than an introductory teaser rate. It was also suggested that the U.S. reexamine incentives that shape behavior in the mortgage market. For example, any incentives that encourage reliance on fraudulent appraisals should be eliminated, while incentives to monitor the quality of assets behind securitized loans would be appropriate.

Second, regulators would benefit from a better grasp of the market practices of banks, securities firms, and insurance companies. One participant observed that the U.S. regulatory system appears to be too fragmented, a condition that gives rise to loopholes and incomplete regulation. Discussants saw the need for enough of "the right kind of regulation," consistently monitored throughout the life of a mortgage. Third, there was concern that the subprime market disburses risk too quickly, which tends to diminish international investors' confidence in the U.S. housing finance system. Requiring banks that make mortgage loans and sell them off as securities to retain a portion of the risk was one recommendation. It was further suggested that the U.S. look at models using covered bonds, wherein a financial institution backs the provision of credit.

Ultimately, participants emphasized that borrowers and investors want transparency and reforms in housing finance that will reduce uncertainties and promote housing affordability and economic prosperity throughout the world. A webcast of the PD&R-sponsored International Housing Finance Policy Roundtable is available to viewers at **www.huduser.org/resources/webcast.html**.

Secondary Mortgage Markets: Increasing Capital and Improving Housing Affordability

The success of an emerging secondary mortgage market (SMM) hinges on three factors: the existence of a strong primary mortgage market, stable legal and governmental infrastructures, and the availability of well-trained accounting and legal professionals. SMMs separate mortgage origination and mortgage investment, thereby increasing the number of mortgage investors and available capital in the primary market. This increased capital flow reduces the risk associated with carrying long-term loans, which in turn can reduce the cost of residential mortgages and make homeownership more affordable.

Mortgage Securitization — Lessons for Emerging Markets, a new study prepared for HUD's Office of Policy Development and Research, argues that in order to develop efficient SMMs, market transparency and predictability must be present across all market elements. With transparency and predictability, it's possible to attract and maintain a steady stream of capital investment. Primarily intended for an international audience, the report identifies the key participants and elements necessary to create and sustain viable SMMs, looking closely at the United States and presenting case studies of SMMs in Taiwan, Guatemala, and Romania.

Market Components

Because a secondary market cannot exist unless the primary market is strong, the first step in developing an SMM is to address any weaknesses in the primary market. In Romania, where the residential mortgage market emerged only within the past few years, this has meant improving economic conditions and making mortgages more affordable. One way to accomplish these goals is to extend loan terms from 10–15 years to 20–25 years, thereby lowering consumers' monthly payments. Traditionally, many Asian cultures attach a social stigma to borrowing. In Taiwan, this cultural aversion to carrying consumer debt is a hurdle to increasing residential mortgages; there, extended families are the main source of funds for homeownership. This cultural standard is changing, however, with younger Taiwanese becoming more willing to take out home loans, thus enabling growth in the primary mortgage market.

Reducing the risk of carrying long-term loans can help make homeownership more affordable.

Loan originators in the primary market will also need to standardize loan products and underwriting criteria. Defining loan terms (loan type, amortization, and payment frequency) and underwriting criteria (minimum downpayments, maximum loan-to-value ratios, and minimum credit standards for borrowers) across the primary market provides secondary market buyers with the necessary information to accurately price mortgage-backed security (MBS) products.

The report observes that for an SMM to attract capital investment, primary lenders and secondary market participants must have open and consistent avenues of communication. In addition, they must standardize the process of bundling and transferring primary-market mortgages to the SMM, so that all participants understand their rights and responsibilities regarding the MBSs' underlying loans. For example, one important element of transferring a loan is defining which party is responsible for loan servicing. In the United States, originators can retain servicing responsibilities, or another loan servicer can be designated with the approval of the MBS trustee. The party that retains servicing responsibilities maintains data on individual loan performance to inform the MBS trustee of activities in its loan portfolio and, in turn, inform investors.

Countries undertaking SMM development must have sufficient professional and legislative infrastructures to create and maintain SMMs. Governments must address early on what enabling legislation is needed and who will regulate the market, taking care to create a

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system that achieves consistent results. The trading and pricing of MBSs can be complex. Achieving transparency and predictability requires close interaction among well-informed direct and indirect market participants, including mortgage originators; insurers; regulators; and legal and technical advisors such as auditors, tax accountants, attorneys, and independent valuation providers.

Emerging Markets

The emerging markets examined in the report face several challenges in their efforts to develop or maintain an SMM. However, each country's efforts are proceeding in the hope of increasing housing affordability and attracting additional international capital. A quick scan of progress achieved to date shows that...

- After four years of reforming its financial and capital markets, Romania issued its first MBS in 2005. The report suggests that the country needs to clarify its legal infrastructure and tax rules for these securities before the SMM can move forward.
- Taiwan spent 10 years studying SMM development and issued its first MBS in 2004. Challenges for Taiwan's SMM include setting standards for mortgage products and underwriting criteria and developing a mortgage insurance system. Despite these impediments, the Taiwanese SMM is growing, having issued six MBSs in the past three years.
- Guatemala has many of the criteria needed to develop an SMM—an active primary market, a history of securitization, and an openness to international financial institutions. However, it lacks a fully functioning capital market system for trading MBSs. To overcome this hurdle, the United States' Overseas Private Investment Corporation is working with Guatemala and other small countries to develop a means of selling MBSs in foreign secondary markets.

Building an effective SMM takes time and a coordinated legal, economic, and regulatory infrastructure. *Mortgage Securitization—Lessons for Emerging Markets* is a helpful reference for developing and sustaining SMMs around the world. The report can be downloaded at no cost at **www.huduser.org/publications/hsgfin/mortgsecurity.html.**

Planning for Future Natural Disasters

Two articles in the most recent issue of *Cityscape* (Volume 9, Number 3) focus on preparedness for natural disasters. "Planning, Plans, and People: Professional Expertise, Local Knowledge, and Governmental Action in Post-Hurricane Katrina New Orleans" examines the successes and pitfalls of four recovery plans in New Orleans. "Hurricane Katrina: Environmental Hazards in the Disaster Area" shares post-hurricane lessons learned that can ease public apprehension about the environmental effects of future disasters. These articles are available as free downloads at **www.huduser.org/periodicals/cityscape.html**. The complete issue of *Cityscape* is also available in print for a nominal fee by calling HUD USER at 800.245.2691, option 1.

Credit: FEMA/Jocelyn Augustino

Waiting for Technology: A Research Agenda

Technology has made living spaces increasingly comfortable, energy-efficient, affordable, and easy to build — but even greater advances are within reach. Recent technological advances that will improve the quality of most new and existing homes await widespread acceptance.

One such technology is the tankless water heater, which has an electric, gas, or propane heating mechanism activated by the flow of water. Unlike heaters that store warmed water in storage tanks (which typically lose enough energy to account for 20 percent of the average household energy budget), *tankless* models heat water on demand. Although the initial cost of a tankless heater ranges from $500 to $900, this outlay is more than offset by reduced energy costs over time.

Field-tested and ready for widespread use, tankless water heaters are not commonly found in homes, despite potential savings in water, energy, and floor space. According to HUD's Partnership for Advancing Technology in Housing (PATH), several reasons account for this. First, builders and consumers are unaware of the advantages of tankless heaters. Second, most plumbers and electricians are not trained to specify and install these heaters. Furthermore, many local officials cannot interpret the installation of the temperature and pressure valve. Finally, the heaters are not uniformly available throughout the United States. As a result, the technology cannot be widely used until comprehensive information about the heaters has been disseminated, training sessions held, and interfaces made with existing systems and procedures — all of which takes time.

Reducing the Wait

The example of tankless water heaters demonstrates the obstacles currently hindering the adoption of new housing technologies. It generally takes 10 to 25 years for an innovative technology to spread throughout the residential construction industry, if not longer. To address this issue, a symposium of housing industry, government, and academic experts met in February 2006 in Washington, DC, to pinpoint and plan to eliminate obstacles that slow the diffusion of new housing technologies into American homes.

Among the most significant barriers to the spread of new housing technologies are risk aversion, tradition, poor information flow, and industry fragmentation. Builders prefer to stay with products, applications, and processes known to be reliable so as to avoid the risk of added costs and time-consuming litigation. Consumers and others favor the familiar over the unknown. Information and training on innovative techniques and practices fails to reach all industry players. The homebuilding industry is not tightly organized or coordinated; its participants often work independently.

The symposium participants agreed that accelerating the adoption of new housing technology will require a thorough understanding of research and development, as well as market adoption processes. Researchers must also understand the housing industry, its influences, and the typical ways that manufacturers, builders, consumers, and others contribute to home technology decisions. The group set critical research

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Top 10 Technologies for Homes

1. Mold-resistant gypsum
2. Solar water heating
3. Recycled concrete substitutes and aggregates
4. Combined heat and power
5. Horizontal axis washer/dryer
6. Hydrophilic, impact-resistant windows
7. Super-sized (vertical) insulated concrete forms
8. Induction cooktops
9. GPS for land development
10. Permeable pavers and pavement

PATH's list of technologies with the most promise for making homes more durable, stronger, and resource efficient can be found at **www.pathnet.org/sp.asp?id=10587**.

Which Type of House Would You Buy?

Although manufactured, modular, and panelized homes make up only one-fifth of housing starts in the United States, they can cost less than site-built homes with comparable features, amenities, and neighborhoods. Why, then, has factory-built housing been slow to penetrate the market? Optimal Solutions Group and the National Association of Home Builders conducted two surveys on behalf of HUD's Partnership for Advancing Technology in Housing to test the idea that consumers' familiarity, attitudes, and experiences with factory-built housing might be responsible for its sluggish adoption.

To assess the public's familiarity with site-built, manufactured, modular, and panelized housing, the researchers designed a web-based survey conducted with a market research sample of 10,000 respondents and a random-sample telephone survey of 2,500 heads of households. Respondents were first asked to indicate on a 5-point scale how familiar they were with each type of housing. To test their familiarity, telephone respondents were then asked to identify the construction features typical of each housing type, and web-based respondents were asked to match 10 construction features with site-built, manufactured, modular, and panelized housing.

In addition, researchers showed web-based respondents unidentified photos of the four types of homes and asked them to rate each picture on several factors important to potential homebuyers: resale value, overall value, purchase price, quality of surrounding neighborhood, time required for assembly/construction, ability to choose design features, quality of construction, and the look and feel of the finished home. Without pictures to serve as a reference,

Consumers are less familiar with factory-built housing, which accounts for 20 percent of U.S. housing starts.

Site-built, or stick-built, housing is constructed entirely on location.

telephone respondents simply rated each housing type on the same factors believed important to potential homebuyers. Finally, respondents were asked to rate the likelihood that they would purchase each type of housing.

In general, both sets of respondents were most familiar with site-built housing, which they perceived as having more features valued by potential homebuyers and which they were more likely to purchase. However, a number of factors appeared to influence the likelihood of purchasing a given type of house, including what respondents themselves had lived in, as well as their income, age, geographic location, knowledge of the housing features, and preferences.

Implications for Marketing Factory-Built Housing

Most respondents considered construction quality to be the most important factor in their decision to buy a home. This finding suggests that if factory-built housing is to gain wider acceptance and recognition, market strategies need to focus on the similarities in quality between manufactured/modular/panelized homes and site-built homes. The researchers suggested using fact sheets, final-product photographs, consumer education, and increased consumer exposure to promote acceptance of factory-built housing. The research team also recommended that marketing efforts be targeted to consumers who are most familiar with (and have a higher probability of purchasing) factory-built homes.

Factory-Built Construction and the American Homebuyer: Perceptions and Opportunities can be downloaded at **www.huduser.org/publications/destech/perception.html**. See the report for sample demographics, survey questionnaires, and detailed findings.

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Which Type of House Would You Buy? *continued from page 6*

Can you match each construction feature below with the corresponding type(s) of housing?
(a) site-built, (b) manufactured, (c) modular, and (d) panelized housing

1. Built to near-full completion in a factory.
2. Materials and components are transported to the home site in stacks on a truck.
3. Built on a steel frame with wheels.
4. Can readily be moved to another site after initial placement.
5. Often comes in two halves that are joined together at the home site.
6. Usually built or set on a permanent foundation.
7. Largely constructed at the home site.
8. Often purchased from a retail home dealer's lot.
9. Typically purchased through a homebuilder.
10. Typically financed with a mortgage.

Answers: 1-b,c; 2-a,d; 3-b; 4-b; 5-b,c; 6-a,c,d; 7-a,d; 8-b; 9-a,c,d; 10-a,c,d

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objectives for the next five years that will require public-private collaboration to advance the transfer of innovative housing technologies. The prescribed research agenda would produce much-needed information about the following:

- Industry performance and market segmentation;
- Product and process performance;
- Effects of new technologies on housing performance;
- Acquisition and transfer of knowledge about innovation;
- Ways in which distributors, suppliers, retailers, real estate agents, appraisers, and media drive innovation;
- Methods for standardizing data collection and analysis across the industry;
- Influence of perceptions, motives, and behavior of consumers, builders, and manufacturers on the diffusion and adoption of innovations in housing; and
- Technology application successes and failures experienced by homebuilding product manufacturers.

This research agenda promises better information that will lower the risk for all who have a stake in the quality of housing, economic growth, and improved standards of living. It offers opportunities for industry players to maintain a competitive edge, for the private sector to take part in collaborative research, and for the public sector to participate where it is needed most in facilitating the diffusion of innovative housing technologies.

Symposium recommendations and details are reported in *Residential Market Research for Innovation: 2006 Technical Report*. Prepared in cooperation with McGraw Hill Construction, the report is available for download at **www.huduser.org/publications/destech/Res_mrkt.html** or in print from HUD USER for a small fee by calling 800.245.2691, option 1. Read about PATH's list of technologies for concerted transfer or diffusion efforts at **www.toolbase.org/PDF/CaseStudies/toptentechnologies.pdf**.

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In the Next Issue of... research*works*

- Researchers have completed a study of overcrowding in living space from 1985 to 2005, using national American Housing Survey (AHS) data. Although each census since 1940 has measured overcrowded living space by the standard of more than one person per room, other standards are used as well, including persons-per-bedroom and unit square footage-per-person. We'll see how these measures, including the AHS data, inform issues related to overcrowded living conditions.
- The Partnership for Advancing Technology in Housing's (PATH) first concept house in Omaha, Nebraska was recently completed. The result of improved production methods and affordable, customizable designs, it features interior walls that move to accommodate changing family needs. Construction of a second concept house in Charleston, South Carolina, set to begin in 2008, will focus on durability in the face of hurricanes, flooding, high winds, and humidity, as well as energy-efficiency, flexibility, and sustainability. We'll "visit" these concept homes to see what they mean for the future of affordable housing in America.
- Research*Works* will examine the results of a 2006 study that considers changes to the American Housing Survey regarding mortgage finance and nontraditional mortgage products. We'll look at this study, and the characteristics of nontraditional mortgages in particular, to see why they are both important and controversial in today's housing market.
- Some provisions of the Energy Independence and Security Act of 2007, signed into law in December 2007, are designed to improve energy efficiency in American homes. In the spirit of this legislation, we'll explore the potential energy and consumer savings of a number of lighting and appliance technologies identified by PATH in its ongoing mission to advance housing technology.

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