

# HOUSING FINANCE INTERNATIONAL

The Quarterly Journal of the International Union for Housing Finance



- ➔ **Causes of the Financial Crisis**
- ➔ **Thailand**
- ➔ **Colombia**
- ➔ **Mortgage Insurance**
- ➔ **Government Supported Housing Finance Agencies in Asia**
- ➔ **South Africa's Financial Sector Charter**



# International Union for Housing Finance

## Housing Finance International

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## Contents:

4..... Editor's Introduction

5..... **Housing Finance:**

**Too Much Finance, Not Enough Housing?**

Renu Sud Karnad

7..... **Global Financial and Economic Crises 2008 – 2009:**

**A View from Thailand**

Ballobh Kritayanavaj

13..... **Mortgage Securitization Market in Colombia**

Alberto Gutierrez and Mónica Ospina

20..... **Regulation of Mortgage Default Insurance:**

**Principles and Issues**

Roger Blood

30..... **Addressing Financial System Pro-Cyclicality:**

**A Role for Private Mortgage Insurance**

J. Robert Joyce and Michael F. Molesky

38..... **Housing Finance Agencies in Asia**

Michael Davies, Jacob Gyntelberg and Eric Chan

47..... **Measuring the Impact of the Financial Sector Charter (FSC)**

**with Respect to Low Income Housing in South Africa**

Vuyisani Moss

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# Editor's Introduction

↳ By Friedemann Roy

Despite the deepening of the global financial crisis, we could probably observe a couple of remarkable proposals of how to restore confidence in the financial sector which should allow lending to resume. Within the global economic slump, the financial sectors/systems of some countries have, to date, proven more resilient to a collapse. The Canadian financial sector appears to be a notable example in this context. According to the Financial Times, Canadian banks have remained the strongest among the G7 economies. Their strength is attributed to a conservative lending culture (including housing finance with LTV ratios not higher than 75%), a vast and stable retail branch network and a clubby working relationship.<sup>1</sup>

This and future editions of the HFI aim to provide responses and examples of systems that have performed better in a recession. In the September 2008 edition of the HFI, the Spanish case of dynamic provisioning was presented.<sup>2</sup> In this edition, we look more closely at Thailand and Columbia. As for systems, we analyse mortgage default insurance as a potential vehicle to stabilise housing finance.

In our first article, Renu Karnard briefly summarises the causes of the financial crisis. Her contribution refers to the speech she gave during the 27<sup>th</sup> IUHF World Congress, which took place from 29 September to 3 October 2008 in South Africa. Among the most important factors, she mentions the relaxation of credit underwriting as well as the dispersion of risk being confused with the reduction of risk and capital requirements.

Our next article by Ballobh Kritayanavaj presents a view from Thailand. Before this crisis, the country was already affected by a number of regional crises. As a response, lenders introduced measures to make their loan portfolios more resilient to macro-economic shocks. In addition, research capacities have been substantially widened to better recognise imbalances in supply and demand for housing. To stabilise the global financial system, he believes that a global central bank could do the trick.

Alberto Gutierrez and Monica Ospina are the authors of our third article. They explain how the Columbian Government introduced regulatory reforms after the economic crisis of 1999. Furthermore, it created Titularizadora Colombiana, an organization specialized in the

securitization of home mortgage loans, which promoted high quality standards of mortgage loans and market transparency that paved the way for a sound upturn of the Columbian housing sector. They point out that mortgage securitization in Columbia is not comparable with securitization in the U.S.A. because of different patterns in origination of mortgage assets, development of financial structures and the macroeconomic situation. The lack of subprime loans in the country and the differences between the Colombian and the U.S.A.'s securitization schemes show that there is no risk of contagion caused by defaulting mortgages in Columbia.

Our next two articles deal with mortgage insurance. The first is presented by Roger Blood. After briefly outlining the objectives of mortgage insurance in the first part of his article, he discusses the regulatory framework of mortgage insurance and highlights critical aspects for a regulator (e.g. the case for mono-line insurers, the Basle framework and mortgage insurance, etc.). In the second part, he assesses necessary parameters of mortgage insurance programmes.

The second article is by J. Robert Joyce and Michael F. Molesky. In their article, they address the pro-cyclical concern from the perspective of residential mortgage risk – of critical importance because residential mortgages and related securities have played a central role in fuelling the current crisis, and continue to comprise a large percentage of banks' portfolios. Sound regulation in the U.S.A. that takes into consideration "lessons learnt" from as far back as the Great Depression era in the 1930s have enabled private mortgage insurers to continue to pay claims reliably during today's financial crisis. To reinforce the counter-cyclical role of mortgage insurance, they propose a public "catastrophic" guarantee, which should be organized in the form of a private-public partnership.

The authors of our next article are Michael Davies, Jacob Gyntelberg and Eric Chan, who examine the role of government-supported housing finance agencies in Asia. They estimate the size of the government subsidies received by these agencies and their distribution among households, financial institutions and the agencies themselves. They come up with three main findings: (i) the level of government support

provided to housing finance agencies in Asia varies, but is generally small relative to the economy; (ii) the housing finance agencies have transferred most of the benefit of their government support to either households or financial institutions; and (iii) agencies that participate directly in primary housing finance markets have been most successful in passing on their government support to households.

Our last article is by Vuyisani Moss. He analyses the recent trends and developments of the Financial Sector Charter (FSC). The FSC is based on a Memorandum of Understanding (MoU) signed in April 2005 by the South African Government and South African Banks, whereby the banks agreed to extend ZAR 42bn (about USD 4.2 billion) for affordable housing in the five years to end-2008. Vuyisani Moss provides a critical examination of product development and innovations with respect to FSC targets and deliverables in serving this group. Additionally, he explores how far financial institutions under the FSC have made credit more accessible and affordable for the low to middle income households in South Africa.

I hope you will enjoy reading these articles and please do not hesitate to let me have your comments and recommendations based on them. They are more than welcome!

Friedemann Roy

## Corrections:

In the December 2008 edition of the HFI, the article of Mr Geoffry Payne on "Owning up: what price home ownership?" was not correctly listed in the edition's contents page.

In the September 2008 edition of the HFI, the biography of Ms Ann Jennervik contained some slight errors. The biography should have read: Ms Jennervik works as an independent consultant. She has had her own consultancy firm since 2002, which focuses on energy, environment and sustainable development, and business concepts (improving international cooperation towards a sustainable and equitable global development).

We apologise for these errors.

<sup>1</sup> See Financial Times, "Canada banks prove envy of the world", Friday, February 20, 2009.

<sup>2</sup> See S. F. de Lis/A. G. Herrero, "The housing boom and bust in Spain: impact of the securitization model and dynamic provisioning", Housing Finance International, September 2008.

# Housing Finance: Too Much Finance, Not Enough Housing?

↳ By Renu Sud Karnad

**Text of the Presidential Address by Renu Karnad, President, International Union for Housing Finance (IUHF), at the 27<sup>th</sup> IUHF World Congress, Sun City, South Africa, 29 September - 3 October 2008**

## Introduction

Welcome, on behalf of both the International Union and our distinguished hosts, the Banking Association of South Africa and the African Union for Housing Finance, to this, the opening session of the 27<sup>th</sup> World Congress of the International Union for Housing Finance. Rarely can any World Congress have been opened at a time of such turbulent and difficult conditions in the world's financial and housing markets. I would like to move on in a few moments to an analysis of the current difficulties and what actions might be used to address these difficulties, but let me first of all modestly celebrate the achievements of the International Union.

## The International Union

The single objective of the International Union is to enable housing finance professionals from all around the world to learn from the successes of their respective housing finance systems so as to be able to encourage – or warn – those with an interest in mortgage finance in other countries about how they might develop their systems. The Union has now been doing this since 1914. As you will see, we are very close to celebrating our centenary. These days we have three principal ways of sharing knowledge and experience. Our journal, *Housing Finance International*, is seen as a prime source of information, expertise and opinion on current issues; our website contains a range of information on housing finance systems from around the world and the World Congress gives everyone the opportunity to debate, face-to-face, the current issues of the day.

And what issues we have today! Had I written this speech even a month ago it would have been entirely different. Since then we have seen, among many other previously unimagined developments, explicit USA government intervention in the affairs of Fannie Mae and Freddie Mac, the bankruptcy of Lehman Brothers, the urgent and rapidly arranged merger of HBOS (the pa-

rent of Halifax Plc.) with Lloyds TSB in the UK, the mergers of two smaller building societies in the UK into a larger, stronger, competitor, and the moves by the Danish Central Bank to put together a rescue package for smaller lenders that was described in the *Financial Times* only last week. Similarly, very early on in the credit crunch, two German banks required significant intervention. It is clear also that credit markets throughout the world are suffering from a lack of trust on the part of participants that make their effective operation almost impossible. How did we arrive at this state of affairs?

## The Causes of the Crisis

To my mind, there are eight factors that have led us into the current situation.

### a. Relaxation of credit underwriting

Arguably, too much credit was available to too many people who had too little means of repaying it or even meeting the interest. In retrospect, it is easy to see that too many lenders moved too far down market too quickly, creating states of indebtedness in some countries that were insupportable. Allied to this perhaps was an idea that those of us in the International Union might find difficult to argue with – the idea that homeownership was a right for all; the sense of entitlement, of the right to a mortgage irrespective of income, seems to pervade some economies and societies. In other words, both borrowers and lenders made mistaken decisions in respect of their borrowing and lending respectively.

### b. Firms moving away from their traditional business

There are examples in many countries of firms under pressure to expand their profits in the light of very low returns on traditional mortgage lending, moving into areas of which they had less understanding. Institutions that know how one market operates well can sometimes gain an elevated sense of confidence that the business lessons they have learnt in that market are applicable to very different markets.

For example, it is quite clear that the lending techniques that one needs to adopt in respect of lending on commercial mortgages are quite different from those that are used in respect of residential mortgages – even though the basic economic transaction, lending money on the security of property, is identical. Firms too often saw the similarities as they sought to expand, but failed to appreciate the differences until it was too late.

### c. Expectations of house price inflation

Underlying much of the optimism surrounding mortgage lending was the expectation that house prices would always rise. This was perhaps not unreasonable given that, in the UK for example, house prices had risen every year, very often at double digit percentage rates, for more than 10 years. Those who warned that house prices might fall tended to be ridiculed and ignored as their predictions repeatedly proved unfulfilled. However, it is now clear that in this respect at least housing is like any other asset. Trading prices can settle above levels that are sustainable; as soon as confidence evaporates, prices fall. Lenders made the fatal assumption that if the personal covenant of the borrower failed, they would be able to obtain possession, sell the property and recover both the outstanding loan and the accrued interest. This assumption is proving incorrect in an increasing number of economies, as house prices fall.

### d. Over extended funding lines

The next factor was that lenders assumed that they would always be able to borrow the funds to continue lending for house purchases at a rapid rate. The credit crunch and its almost immediate effect on Northern Rock put paid to this assumption. It rapidly became clear that an institution funded 75% by the wholesale markets – which was the case for Northern Rock – would have increasing difficulties in maintaining its business in the event of a severe interruption to wholesale funding lines. Northern Rock also showed that difficulties in raising wholesale funds can lead to a severe



loss of confidence on the part of retail depositors. A big funding requirement was also seen by some commentators as one of the factors leading to the decision of HBOS to merge with Lloyds TSB in the UK.

More generally, the gap between retail deposits and loans outstanding has now become a key performance indicator for many banks. An over-reliance on wholesale funding is now seen as a considerable weakness and there is a scramble to generate additional retail funding. In the USA, some investment banks are being taken over by retail funded commercial banks. In the UK and in many parts of Europe, there has been intensified competition to obtain retail deposits and a low wholesale funding requirement has been seen as an encouraging characteristic of a deposit taker's balance sheet, all other things (such as credit quality, for example) being equal.

### **e. Dispersion of risk confused with reduction of risk**

A further feature of the modern mortgage market is the use of the "originate and distribute" model, which not only distributed mortgage loans, but also the risks associated with them. In the traditional lending model, credit and other risks were taken on by the institution undertaking the lending. In the dis-integrated approach adopted in many markets over the last decade, there was an increasingly significant disconnection between borrowers and lenders, with a wide range of intermediary organisations – brokers, servicers, funders – between the borrower and the ultimate holders of the risks. Those ultimate holders could be located many thousands of miles from the borrower, in different jurisdictions.

Importantly, each participant in this chain had only a partial view of the risks involved in the original mortgage loan. Some – such as loan originators for example – had little interest in minimising the risk as none of it was borne by them. In other words, there was a double problem – those originating loans and knowing most about the borrower bore none of the risk, despite being well placed to assess especially the credit risk, while others who took on risks understood and appreciated only certain elements of those risks.

### **f. Untransparent packaging**

Following on from the previous point was the lack of transparency in the packaging of risks as they were wrapped up and conveyed

around the world so that the ultimate holders of the risks not only had only a partial view of the risks involved in their holdings, but in fact did not even understand those parts of the risks which they were themselves holding. The mathematical ability of the MBS packagers to slice and dice different tranches of mortgages made it increasingly difficult for purchasers of assets – and risks – to understand precisely what they were taking on. In some cases, purchasers of assets – and risk – looked only at the credit rating of the asset, rather than the fundamental underlining bundle of rights and responsibilities. This added to the sense in which risk dispersion was – entirely mistakenly – seen as risk reduction.

### **g. Capital requirements**

The view that risk dispersion actually meant risk reduction was behind a further factor that has added to the sense of crisis – the lack of capital in the banking system. Given some of the points that I have already made – a general lowering of lending standards, a reliance on ever-rising house prices and a dispersion of risk, one might have argued that the system needed additional capital. The losses now being recognised by financial institutions all over the world have, in many cases, severely depleted the capital available to institutions in such a way that it is believed that capital holdings are now insufficient. Accordingly, a number of institutions have raised additional capital, in some cases changing significantly the ownership profile of the shares in the institution. Arguably, the unwillingness of institutions currently to lend to each other reflects a recognition on their part that they are unable to judge whether or not institutions have sufficient capital to cover the risks present on their balance sheet.

Indeed, it is clear that not only other market participants find it difficult to judge the level of risk taken on by individual institutions, some individual institutions themselves find it difficult to assess their own risk positions.

### **h. Perverse incentives**

Finally, it is worth asking how participants in the system were incentivised. I know that in the UK and the USA, and perhaps elsewhere, there is a significant debate about the extent to which allegedly short-term bonuses encouraged executives to undertake activities that benefited their firms in the short-term, but caused - or at least contributed to - the historic long-term problems that we currently see. There are also the perverse incentives crea-

ted by the expectation of government support in the past – as my friend, Alex Pollock, has pointed out – Fannie Mae and Freddie Mac were only created as a result of responses to previous crises and they have become part of the current crisis.

## **Conclusion**

Where does this leave us all? I am grateful to Alex Pollock<sup>1</sup>, again, for providing me with the following quote –

“The failures of the current year have been numerous, many having been characterised by gross mismanagement and some by criminality. In many cases, however, the unfavourable conditions were greatly aggravated by the collapse of unwise speculation in real estate.”

You will be interested to know that this is a quote from the USA's Comptroller of the Currency - in 1891!<sup>2</sup> As Alex Pollock points out in a recent article he has sent me, “leveraged real estate speculation has a long and colourful history”. As we have seen so many times through human history, the current cycle features the impact of unbridled optimism, greed, complexity and unchecked real estate price inflation, followed by fear, a lack of trust and an unwillingness to lend.

Perhaps a key characteristic of the current crisis is that many involved in housing finance forgot the housing and only remembered the finance. Too few of those involved in the financing of house purchase have remembered that we are talking about the homes of all ordinary people, their lives, dreams and the aspirations of their families. As we contemplate these issues over the next two or three days of our World Congress, let's never forget that it's our job to put people into houses that they can make homes – not to devise the most academically pleasing and financially rewarding models for financing those transactions.

<sup>1</sup> Alex J. Pollock has been a resident fellow at AEI since 2004, focusing on financial policy issues, including government-sponsored enterprises, retirement finance, housing finance, corporate governance, accounting standards and the issues raised by the Sarbanes-Oxley Act. Previously he spent thirty-five years in banking, including twelve years as President and Chief Executive Officer of the Federal Home Loan Bank of Chicago.

<sup>2</sup> See <http://www.american.com/archive/2008/september-09-08/the-700-billion-man-a-symposium>.

# Global Financial and Economic Crises 2008 – 2009: A View from Thailand

↳ By Ballobh Kritayanavaj<sup>1</sup>

**This article attempts to review and discuss the current global financial and economic crises, particularly their causes, consequences and responses around the world. It also looks at how they have affected the Thai housing and housing finance sectors, as well as their safeguards against external shock.**

## 1. Early Signals of the USA Housing and Financial Crisis

The 1997 Asian financial crisis began in Thailand and was followed by crises in Russia and Brazil. In 2007, exactly a decade later, the USA's housing bubble eventually burst and led to a severe USA financial crisis that has spread throughout the world. The current 2008 global financial crisis and 2009 economic crisis did not arrive without early warning. Many signs of a bubble were obvious before the burst, leading to the severe financial disaster.

In 2005, an article entitled "The Global Housing Boom" (The Economist, 16 June 2005) said that "the worldwide rise in house prices is the biggest bubble in history - prepare for economic pain when it pops". Many other economic experts and market observers also sent early signals that the USA's housing bubble would burst and that subprime mortgage expansion would trigger the financial crisis.

The Government Housing Bank of Thailand clearly forewarned in 2006 and 2007 that the USA's housing market was heading inextricably towards a gigantic crash. In 2006, a Government Housing Bank Housing Journal article (Thai language) was published under the headline "**Will the US housing bubble burst in 2006 and 2007? What will be its effect on Thailand?**".

This article stated that a close review of most 2006 USA housing market indicators showed that the bursting of the USA housing bubble was inevitable. "The overall 2006 US housing market is sluggish when compared to 2005. Dropping housing sales volumes, fewer housing units constructed, falling sales prices and

a general drop in disposable income is contributing to a faltering US housing sector".

Perhaps more importantly, the article also said that unsold housing inventory levels had risen to four million units for new and previously lived-in homes. The increasing inventory levels clearly showed that the housing market was becoming over-supplied and perhaps overheated. "The downward momentum began exerting itself in 2004 and 2005, and in 2006 there are obvious signs of a downswing and the appearance of a contraction/recession cycle" it said.

The article also indicated that in 2007, additional negative factors such as increasing loan interest rates and higher unemployment hurt consumer sentiment and forced housing prices downwards. Initially, housing prices descended slowly but the downward spiral picked up momentum in early 2007, ultimately leading to the bursting of the USA's real estate housing bubble.

Housing has always been a major contributor to the economic growth of the USA and other countries. Historically, its growth has always been a positive contributor to overall employment, consumption and social well-being. The bursting of the current USA housing bubble will therefore negatively affect the USA economy's development. As the world's largest economy, any USA economic slowdown will inevitably spill-over globally and affect countries such as Thailand.

During 2007, the Government Housing Bank Housing Journal featured an article entitled "**The 2007 US Subprime Mortgage Crisis: Contagion Effect on Global Financial Markets**". This article concluded that most

housing market indicators showed that the USA's real estate market had dropped to its lowest level in 16 years. Again, sales volume figures, housing construction starts, sales prices and consumer sentiment were all plummeting downward. Housing inventory levels were also rising to more than five million units.

The 2007 USA housing market was obviously in the midst of a downward momentum (downswing) or contraction/recession cycle. The article also highlighted the effects of the housing bubble's burst on the subprime mortgage market and its contagion effect on subprime mortgage lenders, investment banks and global stock markets. "A global financial crisis will inevitably lead to a global economic recession," it said.

## 2. The 2008-2009 Global Financial and Economic Crises: Impacts and Responses

The world has experienced many financial and economic crises in the past (1). During the last three decades we have seen the Latin American debt-meltdown in the early 1980s, the USA's stock market crash in 1987 and, in the late 1980s, the savings and loans collapse in the USA that led to the Resolution Trust Corporation's creation. In the 1990s, the insolvency of many juseus or housing loan companies in Japan led to the decade-long economic slowdown in this country and, ultimately, the Asian financial crisis.

In 1997 (just prior to the Thai financial crisis) the Government Housing Bank Housing Journal featured an article entitled "**Real Estate Crisis VS Financial Institutions Crisis; Lessons Learned from USA and Japan**". The article concluded

<sup>1</sup> Senior Vice President, Government Housing Bank, Thailand.

that: 1) land and house prices depend largely on market forces of demand and supply, they cannot increase forever; 2) excessive investment and speculation can lead to the collapse of housing developers; 3) mortgage lending recklessness and imprudence will inevitably lead to mortgage lender damage or failure; 4) even though mortgage lenders hold real property as collateral, foreclosure losses can still inflict damages; 5) a real estate bubble burst will affect financial institutions' stability and ultimately a country's overall economy; 6) volatile mortgage interest rates greatly impact upon home buyers, borrowers and the real estate market; and 7) to effectively resolve the real estate and financial crisis, governments must intervene with appropriate, timely and decisive measures based on sound, accurate information.

The current financial and economic crises will be the worst since the 1930s Great Depression and are truly "global crises" in scope because they affect the entire global banking system and world financial markets, as well as the overall economies of not only the USA and Europe, but also the emerging markets of Asia and Latin America. The world has evolved into a single economy linked by a chain of international trade and investment, stock markets and financial markets. Even though the world has weathered several crises in the past, these did not involve innovative and complex subprime mortgage-backed securities and derivative instruments that were ultimately dispersed globally by huge mortgage lenders, global investment banks, big hedge funds and other giant multinational financial institutions.

The Bank for International Settlements (BIS) indicates that the value of all outstanding global derivative contracts at the end of June 2008 reached \$683 trillion (2). According to an IMF estimate in January 2009, the worldwide losses on USA originated credit assets held by banks and others will each \$2.2 trillion due to worsening credit conditions (3). According to the Asian Development Bank (ADB), the global financial crisis slashed the value of financial assets worldwide by a massive \$50 trillion in 2008, the equivalent of the annual global GDP. Losses on financial assets in developing Asia in 2008 totalled \$9.6 trillion (4). Stock markets have lost 40% or more of their value in both advanced economies and emerging markets (5).

The current financial storm has severely affected many large global financial institutions. Two mortgage giants, Fannie Mae and Freddie Mac, as well as AIG, the world's largest insurance company, were rescued by the USA's Treasury and the Federal Reserve. Several European banks have been nationalized or

bailed out with public funds. Globally, many other financial institutions have become increasingly troubled or insolvent.

The current meltdown's massive size and complexity has made its resolution very difficult despite several attempts and concerted central bank efforts (such as by the Federal Reserve, the ECB, the Bank of England, the Bank of Japan etc.), by the USA Government and other advanced economies. Initiatives and policy actions include liquidity injections and bailout plans for collapsed and insolvent financial institutions. The USA alone had announced a \$700 billion rescue plan in 2008 and another \$787 billion economic recovery program in February 2009. Governments and central banks around the world have announced co-ordinated interest rate cuts to unprecedented levels (see graph), state-backed guarantees of personal bank deposits and programmes to purchase distressed assets. These actions may help boost confidence and ease the worsening situation temporarily, but not conclusively. Up until early 2009, credit conditions remain very tight and aggregate demand and employment in many countries are rapidly weakening (5). More vigorous efforts and further actions are required to stabilize financial markets and support the global economy.

The overall impact of the current crisis and its consequences has been very deep, wide and globally dispersed, and will inevitably hurt many economies, resulting in a prolonged global recession from which it may take many years to fully recover. We should hope for the best, but also prepare for a possible worsening of the situation in the future, and not become the victims of "optimistic or pessimistic errors".

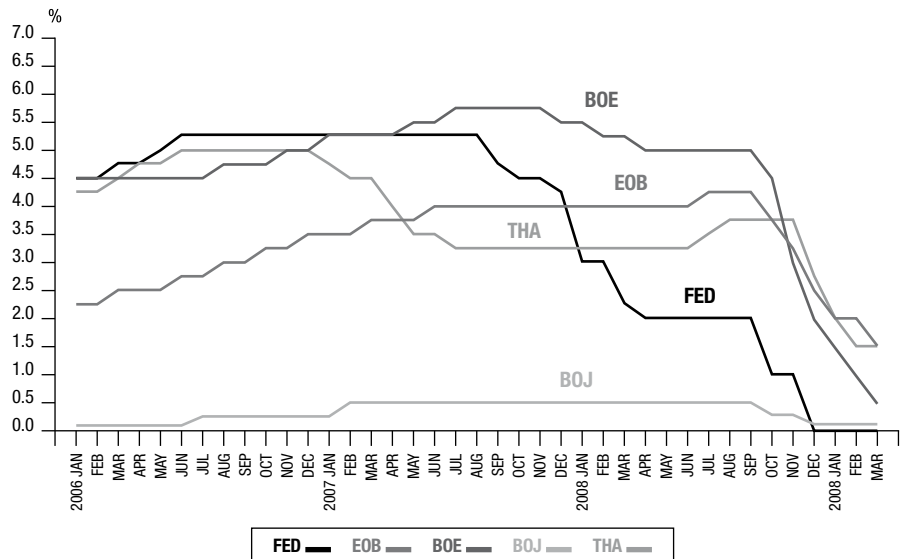
### 3. Global Crises Need Global Solutions

The current financial and economic crises are truly global problems and must be resolved at a global level. A single country does not possess enough power and resources to effectively deal with a systemic world-wide financial crisis. Consequently, there needs to be the concerted and coordinated efforts of wealthy governments and central banks, particularly from world economic super-powers such as the USA, the UK, Germany, France, Japan and China.

Indeed, it is remarkable that the Group of Twenty (G20) leaders held an initial meeting in Washington on 15 November 2008 amid serious challenges to the world economy and financial markets. They determined to enhance cooperation and promised to work together to restore global growth and achieve the needed reforms to the world financial system. Many urgent and exceptional measures to support the global economy and stabilize financial markets were announced in the "Declaration of the summit on financial markets and world economy". Numerous other international meetings and country responses to the global crises were also held at various levels and places such as the G20 Ministers and Central Bank Governors' meeting on 13 March 2009 in London.

In today's financial environment it is noticeable that global financial institutions such as huge commercial banks, investment banks and hedge funds operate across national borders in multiple countries. These large global financial institutions have not been well regulated and supervised.

**Policy Interest Rates**





**RESIDENTIAL MORTGAGES IN THAI ECONOMY**

Unit: Million Baht

ITEM	2002	2003	2004	2005	2006	2007	2008
<b>Residential Mortgages Outstanding (RM)</b>	759,822	866,856	1,055,084	1,220,394	1,351,182	1,468,230	1,583,084
<b>All Types of Loan (AL)</b>	5,894,306	6,145,315	6,598,061	7,106,339	7,374,826	8,096,579	9,454,186
<b>GDP at current price</b>	5,450,643	5,917,369	5,917,369	7,092,893	7,841,297	8,493,311	9,102,785
<b>RM: AL (%)</b>	12.9	14.1	16.0	17.2	18.3	18.1	16.7
<b>RM: GDP (%)</b>	13.9	14.6	16.3	17.2	17.2	17.3	17.4

Source: Bank of Thailand

Complex securitized products and derivatives such as CDOs and credit default swaps need cross-border oversight and regulation. The current global financial crisis offers the world an opportunity to restructure and reform the global financial regulatory system with structures appropriate for today's political, economic and financial environment.

The current roles of the well known international organizations such as the IMF, the World Bank, the BIS, the UN and the ADB etc. need to be reviewed and reformed to cope with future global financial crises and provide long-term financial stability. The world now needs new and more powerful organizations to effectively deal with the current and future global financial crises.

A new "global central bank" may need to be created to oversee the stability of the world's financial systems, as well as to regulate and supervise cross-border financial institutions, co-ordinate with national central banks and to formulate rescue or stimulus plans during global crises. Such a new global central bank must supervise and look beyond individual financial institutions, focussing on the stability of financial systems at national, regional and global levels.

**4. The Global Crises: Effects on Thai Housing and Housing Finance Sectors**

Many Thai financial institutions became insolvent and were closed after the 1997 financial crisis. The housing sector suffered a meltdown and most developers became insolvent after the bubble burst, taking almost four to five years to recover.

Since 2002, the Thai housing market has expanded significantly and until now we have not seen signs of a housing bubble.

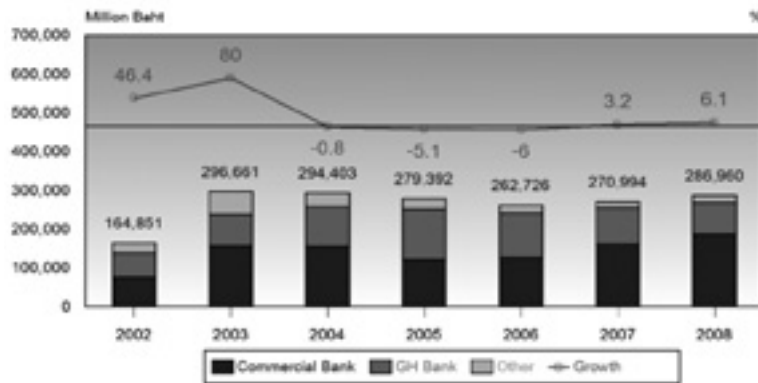
The Thai housing and housing finance industries today seem to have learned their lessons during the 1997 financial crisis, and have successfully implemented safeguards against bubble-like booms or external shocks.

**A. The Housing Finance Sector:** The banking industry became much more cautious in providing project financing to housing developers and mortgage loans to individual borrowers. Banks implemented prudent mortgage lending practices including employment, income, and National Credit Bureau verifications. No bank offers USA style subprime loans.

In addition, most banks adopted mechanisms that mitigate payment shocks and loan defaults when interest rates and accompanying mortgage payments rise during mortgage rate-adjustment periods.

Typically, most mortgage loans are for 20 to 30 year terms. However, interest rates are initially fixed for a short term and then adjusted to a floa-

**New Home Loan Origination in Thailand**

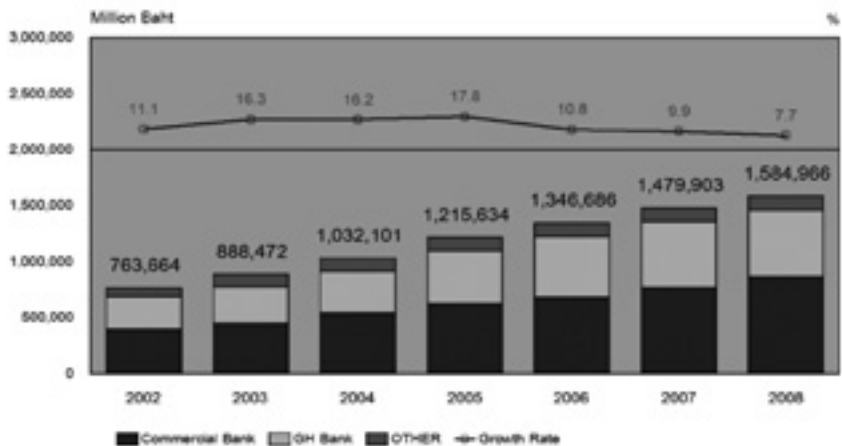


Source: Real Estate Information Center

Provided by: Research & Information Services Department, GH Bank

Note: (1 US\$ = 36.10 Baht, Rate on March 11, 2009)

**Home Loans Outstanding in Thailand**



Resource: GH Bank, NH, GSB

Complie: REIC, Research & Information Services Department, GH Bank

Note: (1 US\$ = 36.10 Baht, Rate on March 11, 2009)

ting rate for the remaining term. Most Thai banks initially establish fixed monthly instalment payments that reflect an interest rate that is 1-2% higher than the agreed to rate. For example, in calculating a buyer's monthly payment on an initial home mortgage loan with a nominal 6.5% interest rate, the banks may add a 1-2% "reserve". The buyer's monthly payments will then actually reflect interest rates equalling 7.5-8.5%. If interest rates have risen at the interest rate adjustment date, borrowers' monthly payments will not be as adversely affected. This practice is useful for both the lender and the borrower as it offers a cushion to mitigate potential default risks. However, if subsequent interest rates do not rise higher than the agreed to rate, the partial pre-paid instalment will amortize the loan principal faster than the contracted term. For example, a 20-year term loan may be shortened to only 17-18 years.

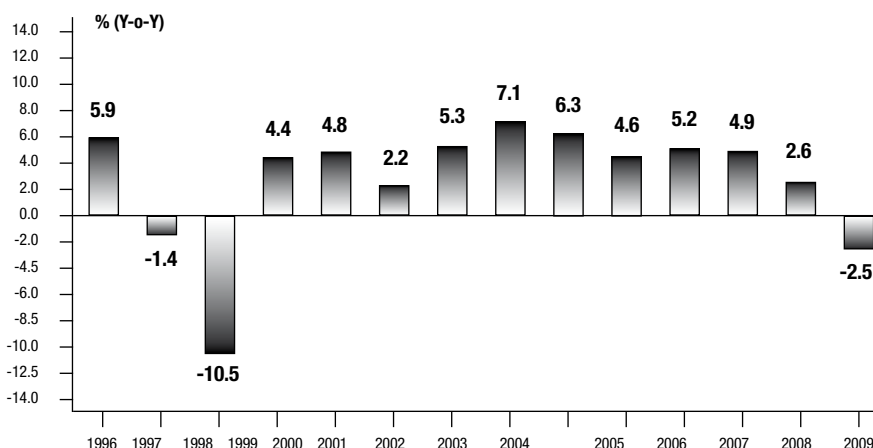
Due to this "instalment calculation" and "adjustable loan term" practice, it is noticeable that the percentage of non-performing home loans (NPLs) of most mortgage lenders in Thailand during the past few years was rather low, ranging from about 2-4% of their total home loans outstanding. However, due to the current economic downturn and increasing unemployment, it is expected that the NPLs of most banks will increase somewhat in 2009. Total new home loan originations are also projected to decline by 10% in 2009. (See graphs)

**B. The Housing Sector:** Housing developers also became more cautious in Thailand after the 1997 financial crisis. Many developers professionalized their operations and became active participants in professional housing associations such as the Housing Business Association, the Thai Real Estate Association, and the Thai Condominium Association. Compared to 1997, developers are now able to respond much more quickly and effectively to supply and demand imbalances.

Many developers closely monitor the housing market and conduct extensive market research before developing projects. The housing associations, the Real Estate Information Center and the Government Housing Bank Housing Journal assist developers by disseminating housing market data and investment and development knowledge based on supply and demand statistics.

As a result, available housing units are not currently oversupplied and the financial condition of most housing developers is much more robust than in the past. In addition, house prices have not increased dramatically in most areas and speculative buying is not significant in the overall housing market.

**Thailand GDP Growth Rates**

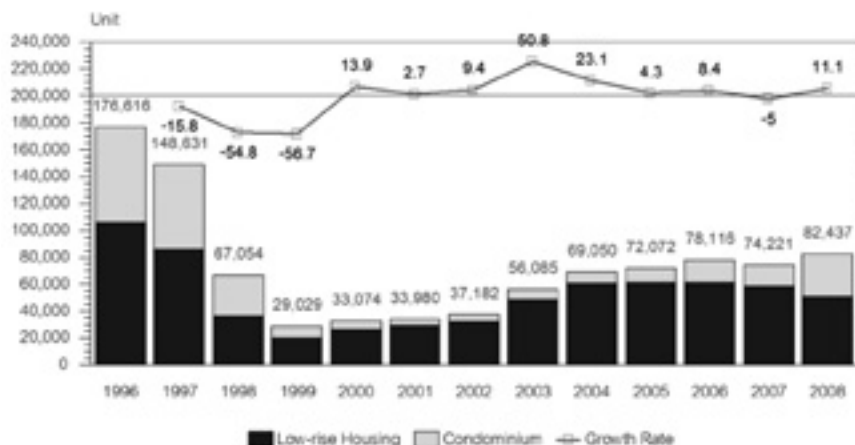


Source: NESDB

Remark: f = forecast

Compiled by: Research & Information Service

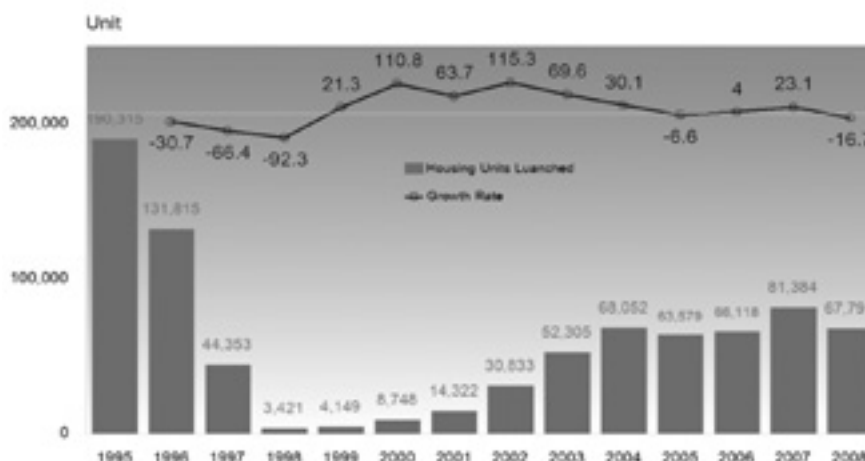
**Housing Completions In Bangkok Metropolitan Region**



Source: REIC

Compiled by: GH Bank Research & Information Services Department

**Newly Launched Housing Units in Bangkok Metropolitan Region**



Source: Agency for Real Estate Affairs

Provided by: GH Bank Research & Information Services Department

Nevertheless, the 2008 USA financial crisis has impacted on the global economy. Since the Thai economy is integrated into the global economy, it will inevitably suffer from any systemic and contagion effects. The Thai economy in 2009 is projected by many economists to contract by about 2-4%. The Thai stock market has plunged in parallel with that of the USA and other markets, losing about half of its value. The export sector has been steadily shrinking. The tourism industry has been severely affected – not only through external economic decline but also from domestic political instability. Private investment and domestic consumption have also been affected by political instability and the worsening economy – resulting in lower sentiment and consumer confidence. These combined factors will lead to a sharp slowdown of economic growth in 2009. According to the latest Ministry of Finance, Fiscal Policy Office forecast on 25 March 2009, the Thai GDP growth rate is projected to contract by 2.5% (–2.0% to –3.0%), the worst since the 1998 crisis (see graph). The unemployment rate will increase significantly from 1.4% in 2008 to about 3.4% in 2009, the highest since 2001.

As a result, consumer income and savings will be impacted – ultimately affecting purchasing power and housing demand. The Thai real estate market as well as the housing finance sector will have slower growth in 2009. The weakening economy will force banks to be more restrictive in their lending practices. Mortgage loans will be more difficult to acquire with rejection rates rising. Responding to slowing market conditions, most housing developers will lower risks by reducing construction. New housing project investments will also be reduced because developers will have more difficulty obtaining financing both through equity and bond issues, and from financial institutions because of the global liquidity crunch (see graphs).

### 5. Concluding Remarks on the Root Causes of the Current Crisis - Lessons Learned and Economic Outlook

The 2008-2009 global financial and economic crises, which emanated from the USA, are the worst collapses since the Great Depression of the 1930s. They are bringing turmoil to the USA's and the world's financial sectors, and simultaneously weakening economies worldwide.

Several global banks and financial institutions have needed bailouts. Many countries have asked the IMF for liquidity support and rescue packages. The economic impact has severely

### WORLD GDP FORECAST 2009

COUNTRY	GDP			
	2008	2009		
	IMF	IMF	WB	UN
	Mar-09	Mar-09	Dec-08	Jan-09
<b>World Output</b>	3.2	-0.5 to -1.0	0.9	1
<b>Developed Economies</b>	0.8	-3.0 to -3.5	-0.1	-0.5
<b>US</b>	1.1	-2.6	-0.5	-1
<b>UK</b>	0.7	-2.8	n.a.	-1
<b>EU</b>	0.9	-3.2	-0.6	-0.5
<b>Japan</b>	-0.7	-5.8	-0.1	-0.3
<b>China</b>	9	6.7	7.5	8.4
	<b>NESDB</b>	<b>(FPO,MOF)</b>		
<b>Thailand</b>	2.6	-2.0 to -3.0	16.0	17.2

Source: World Bank, IMF, UN

Updated 23 Mar 2009

affected countries with sophisticated financial and capital markets.

Financial and economic conditions in many countries continue to present serious downside risks, particularly of systemic financial meltdown. Many advanced economies are now in recession and potential bust cycles. According to the latest IMF Report (23 March 2009), the GDP of the advanced economies is forecasted to contract by 3-3.5%. The USA, the UK, the E.U. and Japan will experience negative GDP growth in 2009, contracting by 2.6%, 2.8%, 3.2% and 5.8% respectively, the first such falls since World War II (see table).

The current crises also directly and indirectly impact upon emerging economies and small developing countries like Thailand. The global economic outlook has weakened. Oxford Economics (March 2009) forecast that the world's economic growth will contract by 2.3% in 2009. According to the latest IMF forecast (March 2009), the world's GDP is projected to contract by 0.5-1% in 2009, compared to 5.0%, 3.7% and 3.2% growth in 2006, 2007 and 2008 respectively.

Many lessons can be learned from the 2008 USA real estate bubble-induced global financial crisis. At first glance, some pundits blamed the proliferation of poor lending practices that led to the introduction of "subprime loans" and the wholesale global dispersion of the related risks through sophisticated "toxic waste" derivative financial instruments for igniting the current global financial crisis. Others blame the lack of regulatory controls or political intervention for encouraging low-interest rates that jump-started otherwise faltering economic environments that would have been better served by a series of minor market-cycle corrections.

However, the current crisis has its roots in the biggest housing and credit bubble in history and many causes. It involves many players and parties ranging from borrowers, mortgage lenders, investment banks, investors, credit rating agencies, financial innovators, security issuers and dealers, mortgage brokers, financial insurers, regulators etc. A long and complex chain of causes and effects led to the crisis.

Housing prices increased consecutively for more than 10 years enticing housing speculators that prolonged a booming market. Many mortgage lenders began following imprudent lending practices including issuing subprime loans that were sold to the secondary mortgage market for securitization.

Huge amounts of mortgage backed securities as well as other innovative and sophisticated debt products backed by subprime loans such as CDOs and other derivative instruments were sold to investors, promising higher yields. Rating agencies bolstered confidence in these often complex investments and their issuers with high credit-ratings. The high demand for these complex mortgage securities led to a weakening of lending standards, which, in turn, encouraged more loans, drove house prices higher and fuelled a bigger bubble.

The bursting of the USA's housing market bubble in 2008 culminated in a full-blown global economic and financial meltdown. At the end of the boom, dubious "subprime" loans to "unqualified" buyers initially prolonged the bubble and eventually triggered the current global financial crisis.

During the boom, many banks increased their leverage by issuing and ultimately holding more of these complex instruments. They

were driven by quick-profits and undertook high-risk and unsound risk management practices. Many central banks and regulators were themselves guilty of poor supervision turning a blind-eye to the increased risks.

In the current fully globalized world, housing, goods and services, trade, financial and stock markets all over the world are closely interconnected. International interdependence is much greater than ever before. The USA's housing boom-and-bust cycle is just one of the factors in the complex processes that triggered the current global financial crisis.

Moreover, a deeper review of the root causes of the current crisis may require more of a historical and human behavioural perspective. The current crisis may just be a culmination of the inevitable "bursting" of a housing and financial bubble that occurs when markets become overly optimistic.

Psychological roots of human behaviour, such as excessive greed, over-confidence and optimistic views of markets, misconceptions or illusions on price appreciation, short-term speculation and easy profit-making, and recklessness in borrowing and lending during the upturn as well as unwarranted fears, panic, distress and depression during any downturn, fundamentally contribute to boom and bust market cycles, often leading to deep and wide crises.

The current crisis is more severe than past crises because more individuals, financial

institutions and countries are involved. Hence, any resolution needs coordinated international efforts towards a fundamental restructuring of the global financial environment. This may require a powerful world organization such as a global central bank to deal with regional or global financial crises that may repeatedly manifest themselves.

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# Mortgage Securitization Market in Colombia

↳ By Alberto Gutierrez and Mónica Ospina<sup>1</sup>

## 1. Colombian Mortgage Sector Evolution

### 1.1 Main Indicators Description

In Colombia, the dynamics of the mortgage sector follows the national building activity<sup>2</sup>. Recent information regarding Colombian building activity (2008-III) showed that it accounts for about 2% of GDP, representing a recovery compared to the final years of the 1990s (1.2%).

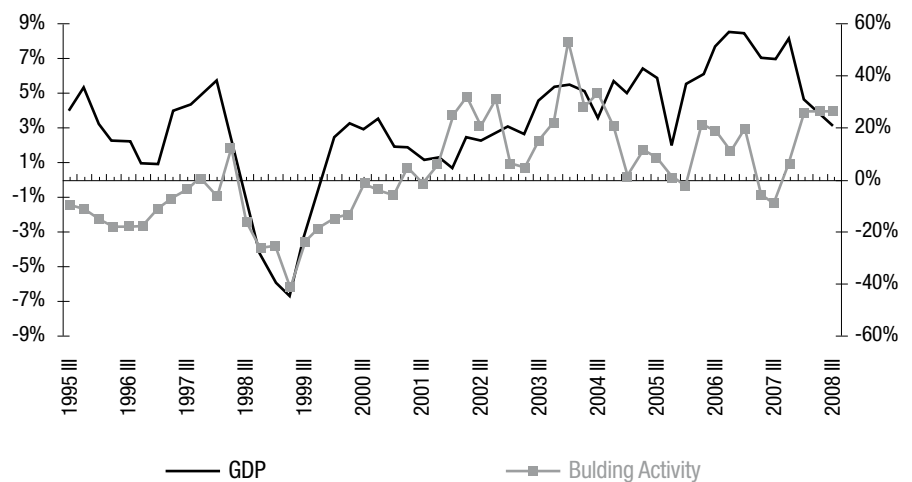
In 1999, the Colombian economy experienced a recession and GDP decreased 4.2%. That year, building activity presented a contraction of 39%. Only after 2002 did it recover its dynamism. In the third quarter of 2008, the economy grew by 3% and building activity did so by 23% (Figure 1).

During the first half of the 1990s, the area approved for housing construction presented an average annual growth rate of 13%. Between 1995 and 2000 this indicator plummeted to -0.8%. Nowadays, it stands at about 8% (2003 to 2008), presenting a pro-cyclical behaviour. Nevertheless, the recovery has been sluggish. Permits for housing construction reached 13.9 million m<sup>2</sup> in 2007, and 12 million in 2008, similar to what was observed in 1994 (12.3 million m<sup>2</sup>) (Figure 2).

In 1996, dwellings financed amounted to 122,000 units (including new and existing housing). Since 1997, this indicator suffered an important fall (102,000 in 1998 to 48,000 in 1999). In recent years, there has been a significant upturn: in 2007, dwellings financed rose to 90,000 (53% being new homes, 47% existing). Between January and September 2008, there were 74,500 units financed.

The IPVN (Price Index of New Housing) showed a 27% increase (real terms) between 1992 and 1994 (Figure 3), followed by a plunge of 40% between 1995 and 2002. From 2003 to 2008, this figure presented a cumulative increase of

**Figure 1 GDP – Building Activity**  
(Annual growth)



Source: DANE, CAMACOL

20%. Currently, the price of new housing is 30% less than it was in 1995. This confirms that the recent increase in prices was not set off by excessive housing value such as occur-

red in the last decade, but by the improved conditions of the sector. In recent years, the recovery in housing has been characterized by a moderate increase over a longer period than

**Figure 2 Monthly Housing Construction Permits**  
(Moving average 6 month, Million of m<sup>2</sup>)



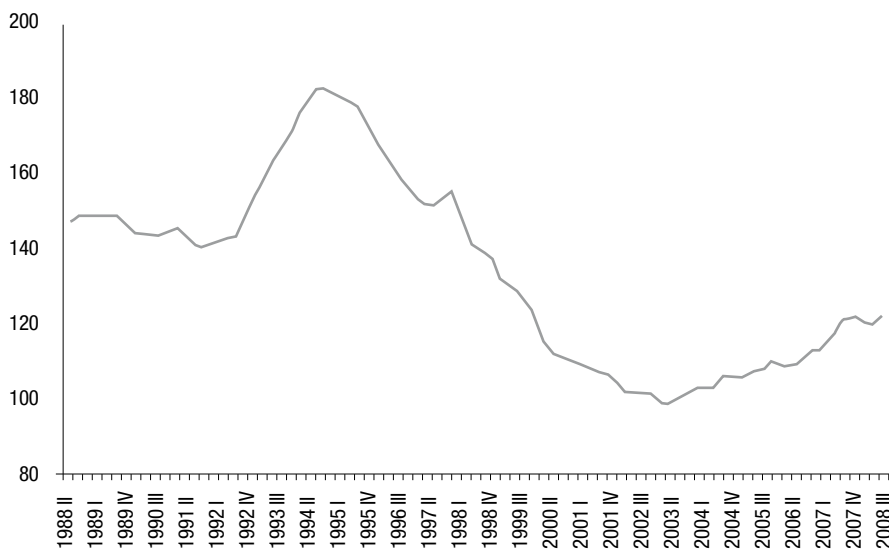
Source: Dane, TC

<sup>1</sup> Mr. Gutierrez is the president of TITULARIZADORA COLOMBIANA (TC), an organization specialized in the securitization of home mortgage loans in the Colombian market. Ms Mónica Ospina also works at TC as Directora de Planeación.

<sup>2</sup> Building activity includes housing, buildings and other construction work related to buildings.

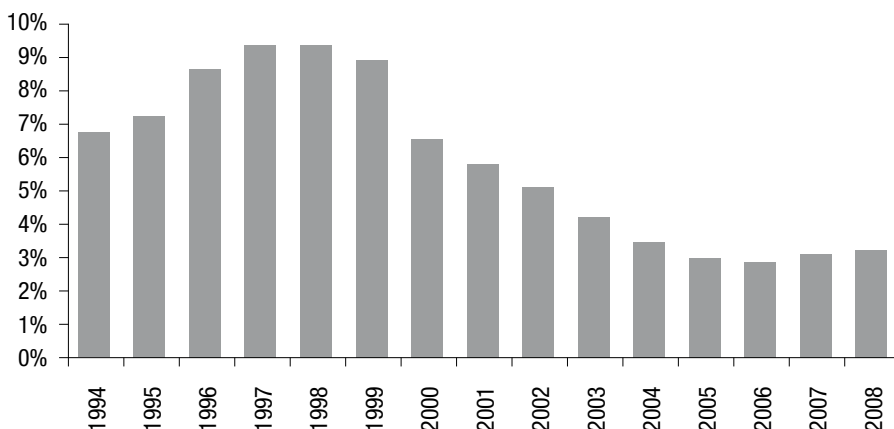


**Figure 3 New Housing Price Index (real terms)**



Source: Camacol, Dane, TC

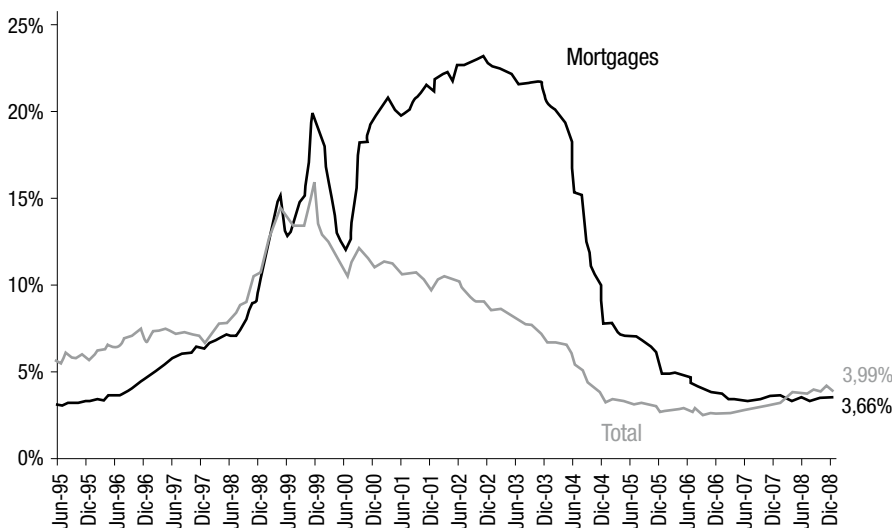
**Figure 4 Mortgage Loan / GDP**



Source: Superintendencia Financiera de Colombia, Dane, TC

Note: Includes securitized loans

**Figure 5 Delinquency Indicator**



Source: Superintendencia Financiera de Colombia, TC

Note: Includes securitized loans

that observed before the crisis (five years versus two years). In fact, current housing prices are at sustainable levels that are not comparable with prices before the crisis.

### Mortgage Financing

Before the crisis, mortgage loans' contribution to GDP was 10%, one of the highest shares in Latin America, and afterwards it started to fall. Since 2006, mortgage loans' contribution to GDP has shown a slow increase. In 2008, mortgage loans rose to USD\$ 6.17 billion including securitized loans (3.22% of GDP) (Figure 4). Today, mortgage loans represent 11% of total loans of the financial sector compared to 30% in 1999.

There has been a consistent reduction in delinquency loans since 2003, especially of housing credit, which evidences progress made on risk analysis and pre-collection processes by banks. After the financial crisis, a substantial reduction of delinquent mortgages was evident, reaching 3.6% in 2008. Loan data of the total banking system has shown similar trends (Figure 5).

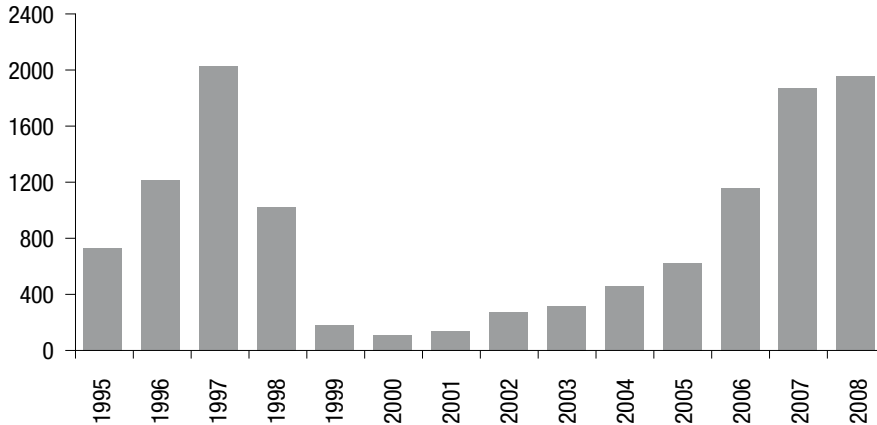
Since 1998, the loan-to-value ratio (LTV - ratio between the debt and its guarantee value) has experienced a decreasing trend, because after the crisis, households took a debt adverse posture to finance housing given that during the crisis many debtors lost their homes (foreclosures). In addition, banks implemented more restrictive policies to approve loans, which included lowering the ratio of the amount borrowed over the value of the property. At the end of the 1990s, this ratio was 70%. Nowadays it represents 59% for Social Housing (VIS)<sup>3</sup> and 49% for Non-Social Housing.

Since 2002, the average growth of disbursements has been positive (approximately 9% annually between 2003 and 2008) (Figure 6), with a pronounced change of level in 2006 (monthly disbursements increased from USD \$51 million in April to USD \$137 million in August). In 2008, the average monthly disbursement represented USD \$128 million. The outlook for 2009 is a 17% reduction of disbursements over 2008, due to expected lower economic growth this year.

The disbursement structure has changed in the last ten years. In 2003, 95% of total disbursements were denominated in UVR<sup>4</sup> (inflation adjusted loans), and this percentage slowly decreased until 2005, when it amounted to 71% of mortgage disbursements. Since 2006, the structure radically changed. Fixed rate disbursements became more attractive and went on to represent 69% of total disbursements. Two years later, in 2008, the disbursements deno-

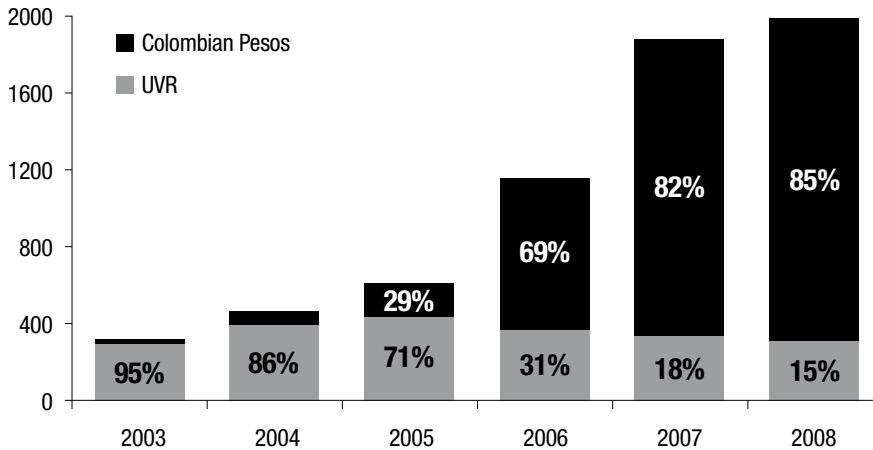
<sup>3</sup> VIS Housing for families with incomes of less than four monthly minimum wages (USD \$851).

**Figure 6 Mortgage Disbursements**  
(USD million)



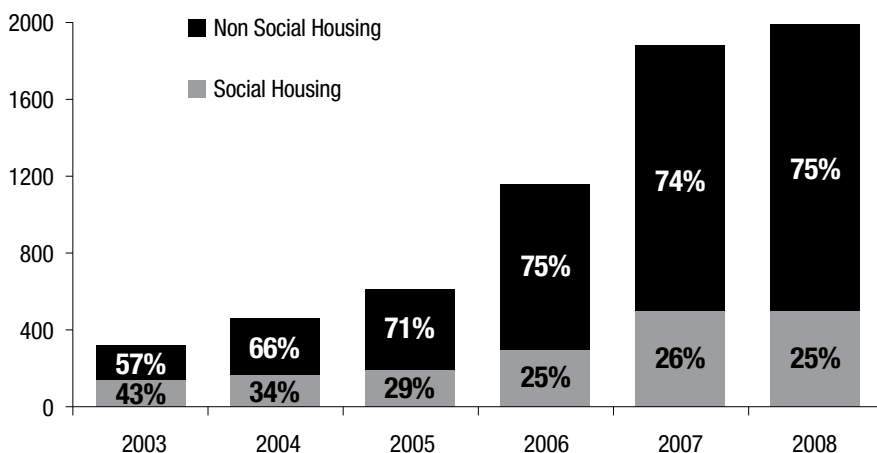
Source: Superintendencia Financiera de Colombia

**Figure 7 Mortgage Disbursement (Fixed rate COL – UVR)**  
(USD \$ million)



Source: Superintendencia Financiera de Colombia

**Figure 8 Mortgage Disbursement (Social Housing – Non Social Housing)**  
(USD \$ million)



Source: Superintendencia Financiera de Colombia

minated in Pesos (fixed rate) represented 85% of the total, while those denominated in UVR accounted for only 15% (Figure 7). In 2008, 25% of the total disbursements were destined for social housing (Figure 8).

Between March 2004 and December 2005, the Colombian mortgage system's interest rates remained relatively stable with a slight downward trend. Between January 2006 and January 2007, these rates showed a strong plunge as a result of the Central Bank's interventions. Interest rates for loans in Colombian Pesos (COP) exhibited a greater fall (430 basis points) than those for loans in UVR (280 basis points)<sup>5</sup>. This decrease partly explains the change in the composition of disbursements explained above. From 2007 until December 2008 (when interest rates reached 17.2%) (Figure 9), these rates gradually increased, hand-in-hand with the posture of the Central Bank to prevent overheating in the economy. Interest rates are expected to decrease in 2009 as the Central Bank will continue to lower its intervention rates to stimulate the economy, which has been slowing down.

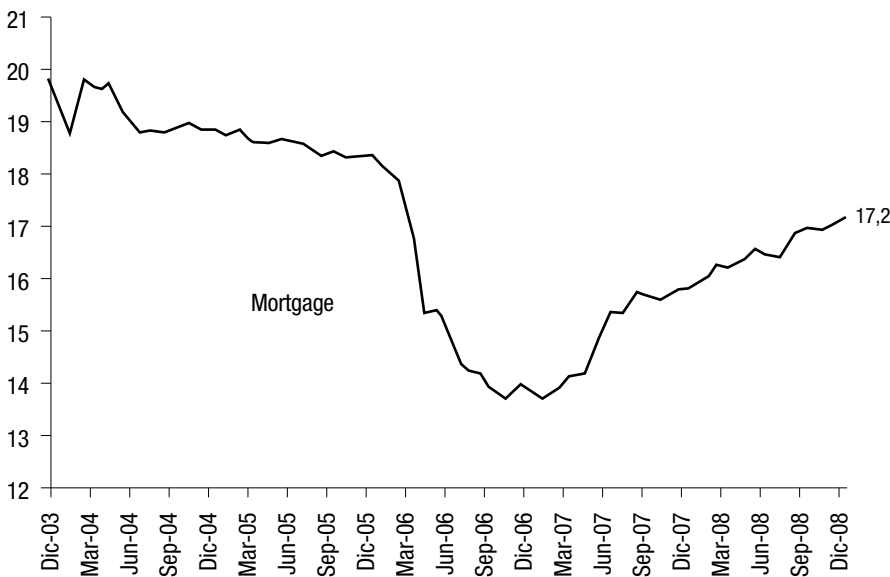
**1.2 The Impacts and Lessons of the 1990s Crisis**

The financial sector crisis, especially in mortgage credit, was one of the most important events in the recent evolution of the Colombian economy. Unsustainable rises in house prices and increasing levels of household indebtedness were the main causes of the depression. In addition, some negative aspects of the Colombian macro-

<sup>4</sup> UVR (real value unit): It is an account unit that reflects the acquisition power of the currency, based exclusively on the monthly change of the CPI. During the 1990s, before the existence of the UVR, a high percentage of Colombian mortgage loans were indexed to inflation through the UPAC ("Unidad de Poder Adquisitivo Constante"). The UPAC or Constant Purchasing Power Unit was an accounting unit allowing long-term mortgage operations through value adjustments according to the purchase power of the legal currency. In 1994, Banco de la República (Colombian Central Bank) changed the indexation of the UPAC to the market interest rate (DTF). Since 1995, the Central Bank started to increase overnight lending interest rates as a mechanism to cool down the economy. Because of this change, UPAC's growth rate was higher than inflation's. Since households' income (salaries) increases were related to inflation and their expenses to their mortgage loans (mortgage credits indexed in DTF), their net income was negatively affected, directly contributing to mortgage loan delinquency increases and housing demand contraction. In 1999, the UPAC system was eliminated because it amplified the rising effect on interest rates which, as a consequence, resulted in the fact that mortgage debtors were not able to pay their obligations. Since January 2000, the UVR was introduced.

<sup>5</sup> In Colombia, credits in COP have a fixed interest rate and credits in UVR are indexed to inflation.

**Figure 9 Mortgage Loans Interest Rate (fixed Pesos)**



Source: Superintendencia Financiera de Colombia

economic environment and the international situation also contributed to the crisis.

The loan-to-value ratio was strongly affected during the crisis due to: i) the fall in house prices during the crisis leading to a deterioration in the guarantee's value and ii) increases in interest rates generated growth in the debt transferred to households' balance sheets. As a result, debtors had no incentive to continue to pay their obligations.

Because of this situation, the economy decelerated. In 1999, unemployment had risen from 10% in 1995 to 20%. All of these factors resulted in a sharp deterioration in the ability of debtors to repay their loans, increasing the mortgage delinquency rate. In this way, the crisis in the housing sector had a negative impact on building activity, economic growth and job creation until the first years of the current decade.

### Lessons

The crisis of the 1990s generated a re-thinking of the Colombian mortgage system from an administrative and regulatory standpoint. In 1999, the UPAC<sup>6</sup> system was eliminated because it amplified the rising effect on interest rates, which, as a consequence, resulted in the fact that mortgage debtors were not able to pay their obligations.

Since January 2000, a new value unit of measure was introduced, the UVR. The UVR was adjusted daily based on inflation in order to adjust households' income with mortgage loan payments.

Mortgage amortization systems were regulated, eliminating negative amortization systems and guaranteeing a stable relationship between monthly credit payments and the debtor's payment capacity. This automatically generated more stability during the life of loans.

Important structural conditions for new mortgage loans were defined: (i) interest capitalization was prohibited; (ii) pre-payments were authorized without any penalty; (iii) processes for restructuring loans were established; (iv) a time-limit of 5 to 30 years was defined for these types of loans; (v) caps were set on loans' interest rates for UVR social housing; and (vi) the law was established that interest rates agreed at the beginning of the loan are unchangeable during the loan's life, unless both parties agree on a change.

Mortgage loans' origination conditions were also modified. All financial entities were compelled to implement systems that allow them to reduce the default probability in order to have a better credit risk control. A household indebtedness control was established, defining that the monthly mortgage loan payment could never be over 30% of its income. Additionally, mortgage banks are not able to fund more than 70% and 80% of the commercial value of the property for non-social housing and social housing, respectively.

Law 794 of 2003 also introduced important changes to judicial foreclosure, aimed at reducing the average period to complete the collection process by eliminating some steps in such processes. The most relevant amend-

ments can be summarized as follows: (i) modification of the procedure to send personal notice of the lawsuit to the borrower; (ii) elimination of the possibility to appeal the sentence in cases where the borrower was represented by a public attorney; (iii) amendment of the assets appraisal system, allowing courts to consider appraisals made by third parties appointed by the banks; and (iv) authorization to entities other than the courts (i.e. Chamber of Commerce) to conduct public auctions.

All of these normative changes contributed to create a solid mortgage system, with strong coverage structures. On the other hand, continuous development of risk administration models, auto-regulation of financial entities and monitoring carried out by supervising authorities have become a shield that protects the system from possible changes in the economic environment.

Nowadays, the latter allows a system with low LTV ratios, house prices 30% below the highest level attained in the 1990s and a delinquency rate of 4% as opposed to the 25% registered during the crisis.

## 3. Securitization in Colombia

### 3.1 Titularizadora Colombiana

The 1999 Housing Law implemented a new credit mechanism designed to help reduce the effects leftover from the crisis. Through this law, mortgage loan securitization and the issuance of these types of securities were regulated. In July 2001, five mortgage banks<sup>7</sup> and the IFC (International Finance Corporation, World Bank) decided to create the first specialized securitization company in Colombia, Titularizadora Colombiana (TC), with its main purpose being to develop the new financing mechanism.

Securitization companies are obliged to have a minimum capital of USD \$25 million by regulation. TC has a capital of USD \$55 million. Among the main activities carried out by TC are: (i) the selection and certification of mortgage loan originators; (ii) the establishment of standards and guidelines for mortgage loan originators and servicers<sup>8</sup>; (iii) the design of selection criteria based on scoring models; (iv) the financial and legal structuring of securities; (v) the placement of securities among different types of investors; (vi) administration of the securitization process (master servicing); (vii) the design of strategies to develop the secondary market; (viii) maintaining a permanent relationship and sharing information

<sup>6</sup> See reference 3.

<sup>7</sup> Bancolombia, Davivienda, BCSC, Colpatría and AV Villas

with investors; and (ix) providing credit enhancement facilities.

The securitization process consists of pooling a portfolio of loans or any other type of asset to back a tradable security on the financial markets. In the case of RMBS (Residential Mortgage Backed Securities), the securities are backed by a portfolio of mortgage loans. These types of securities include credit enhancement mechanisms to mitigate and hedge the inherent risks (prepayment, delinquency and default) of the underlying asset, so investors can receive the expected cash flow from their investments. These types of securities are sold in tranches and they are rated depending on the timing, priority and risk of the cash flow of each.

Up to March 2009, TC has issued 23 transactions (RMBS: TIPS<sup>9</sup> + TECH<sup>10</sup>), 10 of which have been in UVR, 10 in COP and three backed by non-performing loans (TECH), adding up to a total of USD \$4.3 billion and 145,040 securitized loans (Table 1). At present, outstanding securitized mortgage loans stand at USD \$2.1 billion, which represents 31% of the total mortgage loans outstanding in the Colombian system.

The three non-performing loan securitizations (TECH) were issued in 2004 and 2005. The issuance of TECH enabled originator banks to remove non-performing loans from their balance sheets, increasing their liquidity and their ability to issue new productive loans. These transactions consisted of securitizing loans with a delinquency rate greater than nine months that had initiated a judicial foreclosure. Two types of securities were issued in each transaction (with maturities of seven and five years) rated AAA (local). Those securities were structured based on the expected cash flow from the sale of the underlying assets of the loan (housing properties), which also depended on the timing of the foreclosure process and sale of the property, losses derived from the sale process and maintenance costs. They also included credit enhancement mechanisms such as: reserve fund, subordination, over-collateralization and partial guarantee by IFC.

**Table 1 Securitization in Colombia**

Security Type	Number of Transactions	Securitized Loans (USD billion)
TIPS UVR (Performing loans)	10	2,15
TIPS Pesos (Performing loans)	10	1,67
TECH (Non-performing loans)	3	0,48
<b>Total</b>	<b>23</b>	<b>4,30</b>

Source: Titularizadora Colombiana

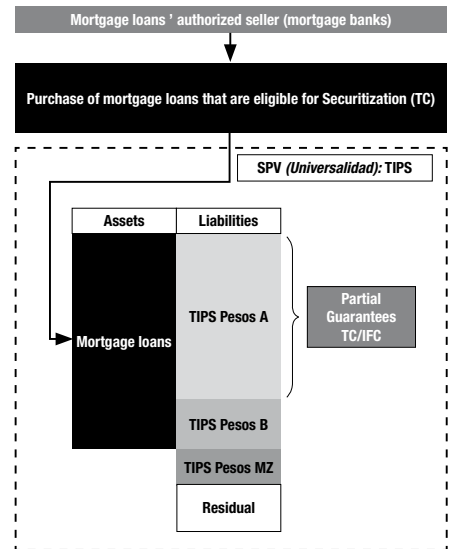
**3.2 Key Aspects in Securitization**

A basic legal framework and a “well developed” capital market are among the most important aspects to use securitization as a finance mechanism. A basic legal framework should have clear mortgage loan regulation: well defined foreclosure legislation, SPV-definition and true sale, and clear accounting rules for banks and investors. The legal aspects should stand side-by-side with permanent government support by facilitating adjustments to existing rules and giving incentives to the parties involved in the process (i.e. investors, issuers and SPVs through tax exemptions).

A “well developed” capital market refers to a market where the issuer is able to find a diversified clientele for long-term financial instruments (RMBS) such as: pension funds and insurance companies among others. In addition, there should be confidence in these types of securities; therefore, there is a need for the issuer and the SPV manager (TC) to develop efficient channels of communication with investors and clear valuation rules in order to help increase the ability to trade on both primary and secondary markets. There are minimum conditions to structure and place these types of securities on the capital markets, such as: availability of mortgages for securitization, a minimum standardization in the market and historical data.

There is also the need to count on a specialized securitization company, such as TC, to coordinate and lead the securitization process, direct adjustments to the mortgage securitization legal framework, promote market standardization, provide transparency and confidence to the market and lower securitization costs by achieving economies of scale.

**Diagram 1 Structure of Securitization in Colombia**



Source: Titularizadora Colombiana

In Colombia, the mortgage loan securitization scheme consists of the purchase of loans from banks by TC according to strict qualification standards. After the loans have been chosen and bought, they are pooled into an SPV (*Universalidad*<sup>11</sup>). The securities are structured based on the characteristics of the portfolio and placed in the financial markets. The financial structures of the securities are one of fast pay/slow pay, senior/subordinate, in which senior (rated local AAA) note holders receive interest and principal monthly, while subordinated (securities rated lower than senior notes) certificate holders receive interest payments monthly and no principal payments until the full repayment of principal to the senior note holders (Diagram 1).

<sup>8</sup> Have helped to standardize mortgage loans and develop best practices (documentation, database: information on mortgages and debtors, servicing collection and foreclosure)

<sup>9</sup> TIPS is the commercial name for mortgage backed securities denominated in pesos and UVR that are issued by TC. As will be shown in Figure 10, the name of each issuance is preceded by the letter E. The first issuance in UVR is TIPS E1 and the first one in Pesos is TIPS \$ E1

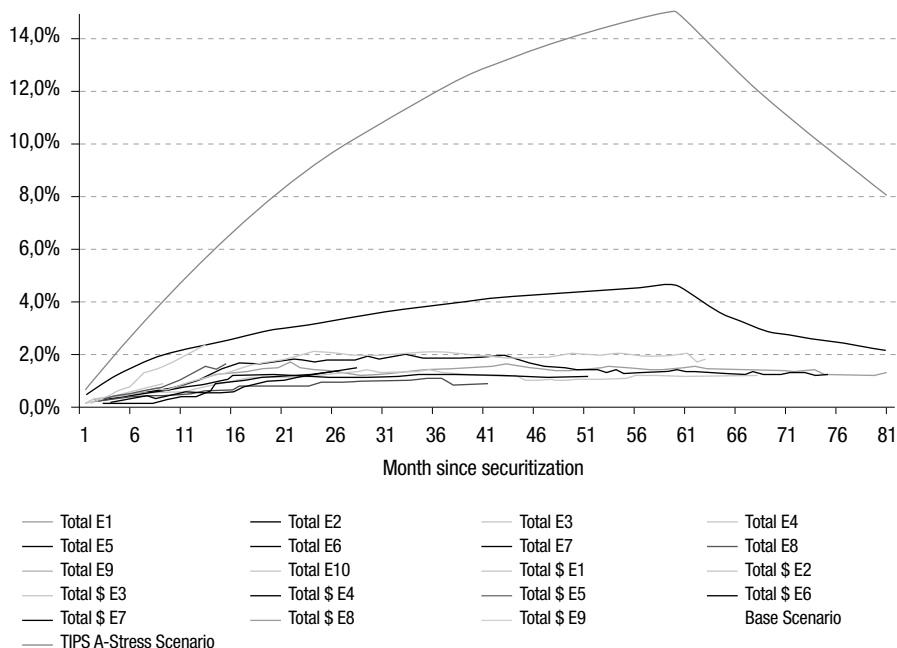
<sup>10</sup> TECH is the commercial name for the securities for non-performing loans issued by TC

<sup>11</sup> It is a Special Purpose Vehicle created by law, designed exclusively to mortgage loans and related assets' (such as mortgage leasing) securitization.



**Figure 10 Mortgage loans Delinquency (>120 days)<sup>12</sup>**

Delinquency > 120 days / Disbursement



Source: Titularizadora Colombiana

TC's management (master servicing) of securitized assets is based on selection criteria through a check of 100% of the loans purchased, as well as through permanent control and supervision of them, even when the RMBS have been placed and are being traded on the financial markets. Additionally, both the originators (mortgage banks) and the issuer (TC) maintain part of the risk of the securities on their balance sheets due to the acquisition of both subordinated and senior tranches of securities as investments.

In terms of issuance risk, the vintages show that the delinquency rates over 120 days of each one of the underlying loan portfolios have had a better than expected performance, therefore standing well below the average stress scenario, or maximum resistance scenario (Figure 10). Additionally, the senior tranches of the securities (TIPS A) were structured to meet the expected cash flow to investors (principal + interest) even under a scenario where the delinquency rate reaches more than that observed during the crisis of the previous decade.

Since the implementation of securitization, TC has helped to reduce and hedge the mismatch risk of interest rates and maturity that are inherent to entities specialized in mortgage loan origination. Maturity mismatch arises because long-term assets (mortgage loans) are basically

financed with short-term funding. Using securitization, mortgage banks are able to remove from their balance sheets (sell) long-term assets and finance those assets with resources coming from long-term investors (such as those mentioned above).

In addition, the mismatch of rates arises because mortgage loans are denominated in UVR (rate indexed to CPI) or in fixed interest rates, while their traditional funding comes from short-term sources denominated in DTF<sup>13</sup>. Removing the loans from the banks' balance sheets allows the structuring and placement in the capital markets of RMBS that are denominated in the same type of interest rate as the underlying assets (fixed rate of UVR). Additionally, this finance mechanism has become a profitable operation for mortgage banks since RMBS' rates plus transaction costs result in lower costs than the short-term funding plus market risk costs that these institutions used to face.

TC has also helped to deepen the Colombian financial market by issuing RMBS that give investors a wider range of long-term products, which diversifies their investment portfolios. To date, Titularizadora Colombiana has been the most important private debt issuer in Colombia (25% of total private issuances in 2008).

There has also been an impact on the real estate sector. Mortgage securitization has proved to be highly related to the development of the real estate industry and building activity, by helping to increase mortgage loan availability (additional USD \$4 billion for housing and development of a fixed rate loan scheme) and improve the liquidity of mortgage loan portfolios (reducing interest rates by 500 basis points and lowering capital requirements).

Therefore, the mortgage industry now has a clearly different shape from that which it had during the last decade. It has been strengthened since the last crisis and will be able to tolerate an economic downturn without putting at risk the stability and origination of new mortgage loans. At the same time, the securitization industry has been consolidated under trustworthy structures and optimum hedging mechanisms.

## 4. Colombian case versus the USA case

The current Colombian financial system's strengthening has been defined by the crisis of the late 1990s. The experience gained with regards to legal framework and financial control constituted the fundamental basis of the current origination schemes and mortgage loan administration. Many adverse conditions triggered the subprime crisis in the USA, such as lower standards for the evaluation and granting of mortgage loans, stimulated by a real estate boom and an exponential increase in house prices; whereas the current scenario regarding Colombian mortgages is completely different.

Interest rate controls, indebtedness limits and the risk administration systems that prevent origination of risky loans of the "subprime" type have generated in Colombia an entirely different scenario from that of the USA. In Colombia, the sector's strengthening has been protected by a capital market that excludes low quality assets and prohibits systematic risk transmission.

Summarizing, securitization schemes in the United States of America and Colombia are substantially different for the following reasons:

- In the USA, entities securitized low quality loans (subprime, Alt-A, others). In Colombia, subprime credit origination does not exist. Additionally, TC selects only loans that meet high quality standards: LTV, ratings and guarantees are verified for 100% of the portfolio acquired. Thus, the loans that support TIPS present a delinquency indicator substantially lower than the mortgage system (2% versus 4%).

<sup>12</sup> See reference 8.

<sup>13</sup> Weighted average interest rate on 90 days' Certificate Deposits offered by the Colombian financial system



- In the USA, lower rated tranches (subordinated securities) were sold to the financial markets. In Colombia both the originators (banks) and the issuer (TC) acquired these securities (subordinated), which implies that both of them maintain part of the risk on their balance sheets, forcing banks to improve origination standards and loan servicing, and forcing TC to develop better standards to select eligible loans to securitize.
  - In the USA, capital market subordinated securities rated below investment grade were repackaged and served as collateral for new securities rated AAA due to the use of credit enhancement mechanisms issued by insurance companies. In Colombia, these types of structures do not exist.
  - Decisions made among rating entities, investors and other market's participants in the USA were based on the evaluation of models which did not consider stressed scenarios, leaving out situations similar to the current crisis. This led to an over-valuation of many securities that were collateralized by risky mortgage loans such as subprime, Alt-A and others. In Colombia, in order to allow securities to provide the expected cash flow to investors, the financial models used to structure TIPs are tested for conditions worse than those presented during the crisis of the 1990s (stressed conditions).
- The factors that triggered the subprime crisis in the USA have foundations that are not comparable with the current environment of the Colombian economy and even less so with the Colombian housing finance system. The lack of subprime loans in the country and the differences between the Colombian and the USA's securitization schemes show that there is no risk of contagion through the mortgage channel between the two countries.
- The latter has allowed that Colombia's mortgage loans currently present one of the lowest delinquency levels in recent years, despite the international mortgage and securitization crisis, and mortgage securitization in the market has continued.
- strong housing finance system, with a defined regulatory framework and with substantial differences compared to the existing system in the years before the crisis.
  - The indicators of mortgage loans in Colombia, particularly loans originated after the crisis, show the granting of loans with high quality standards. Additionally, the TC's securitization scheme ensures payments to investors.
  - Since the end of the crisis in Colombia, mortgage loans have presented good performance, with high quality standards.
  - In the USA, mortgage securitizations have been affected by the subprime crisis. However, this situation is not applicable to the Colombian case because of the differences in the patterns of origination of mortgage assets, development of financial structures and the macro-economic situation.
  - TC's role (taking care of the interests of investors) is a fundamental added value in the securitization process due to the transparency and quality of information delivered to the market, as well as studies being conducted in order to improve the structuring of financial issuances.
  - The expected economic slowdown scenario for Colombia in 2009, due to the international crisis, will have negative impacts in employment and hence in mortgage loan delinquency, as well as in the placement of dynamic of housing loans. Despite all this, the stress scenarios for the TIP's structures will resist more complex macro-economic situations than those expected during 2009.

### 5. Conclusions

- Colombian housing and mortgage indicators show recovery and strengthening during recent years.
- In Colombia, there are large differences in the origination schemes of mortgage loans when comparing the current situation with the 1990s.
- The 1998 crisis resulted in important lessons being learnt, which permitted the creation of a

# Regulation of Mortgage Default Insurance: Principles and Issues

↳ By Roger Blood<sup>1</sup>

## Introduction

Mortgage default insurance (MI) programs now operate worldwide in over 30 countries.<sup>2</sup> While about two thirds of these programs are government-sponsored, the privately-capitalized MI providers generally operate in countries with more highly developed housing finance systems - sometimes along with a public sector counterpart.

Most countries have adopted MI programs for one or both of the following reasons:

- To expand homeownership opportunities, with MI coverage used as an inducement for lenders to accept incremental credit risks, including lower borrower cash equity; and
- To encourage the growth of secondary and capital market flows to home mortgage lending, including through securitization.

In any event, mortgage default insurance is basically intended to cover the risk of national economic catastrophe and large scale “depression level” losses suffered by a country’s housing finance sector. Unique attributes of such risks include:

- The long duration of each insured risk, i.e., the full contract term of each loan or group of loans insured - far longer, for example, than property or vehicle insurance;
- The very long cycle of risk, with economic cycles running ten years or more; and
- The unique extent to which government economic and financial policies impact mortgage portfolio credit risk performance.

These unusual factors and risks set mortgage default insurance apart from other forms of insurance such that MI requires very different and carefully conceived analytical and regulatory tools. This article explores these special regulatory needs as they relate to:

- The nature of the risk;
- The needs of the market; and
- How MI regulation fits (or should fit) within the broader framework of housing finance regulation.

In this respect, recent near-catastrophic mortgage market developments - still unfolding in many countries - give MI risk-related concerns a particular relevancy and the opportunity for new insight.

Within the larger theme of financial regulation covered in this issue of Housing Finance International, this article deals with the rather specialized regulatory needs and provisions that underpin mortgage default insurance. Apart from MI industry-specific concerns, one first should consider that one of the basic prerequisites for MI program success is a supportive legal and regulatory environment with regard to housing finance generally, e.g.:

- Effective contract enforcement
- Functioning systems for mortgage and title registration, and transfer and assignment
- Effective banking and insurance regulation
- A reliable judicial and court system

Any failings in this broader legal and regulatory environment increase risks and costs in a way that MI is not designed to ameliorate or solve.

## Objectives of MI regulation

Given MI’s mission to protect against massive severe losses caused by widespread borrower defaults and large declines in home values that lead to massive foreclosures, what must effective MI regulation do to provide confidence that it will “deliver the goods” when called upon? At the least, such regulation should - in rough order of priority - do the following:

- Require massive and liquid capital reserves, accumulated during the “good” years and retained to pay high stress-period claims (such as now); establish reserve adequacy using a realistic definition of economic catastrophe;
- Assure transparency with regard to the risks being assumed and the adequacy of reserves;
- Support program viability with mandates or incentives that will prevent or minimize adverse selection of risk by insured lenders;
- Maintain actuarially sound premium rates sufficient to cover both “normal” and “stress level” claims; be required to operate according to sound commercial principles;
- Set broad parameters to avoid underwriting excessive or unusual risks, while still allowing innovation and market responsiveness;
- If government sponsored, adopt program parameters that direct program resources and benefits to suitably targeted (typically broad mid-level) homeowner market segments; and
- If privately sponsored, prohibit conflicts of interest; assure basic consumer protections.

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<sup>2</sup> Mortgage default insurance (MI) refers to a specialized form of credit insurance or guarantee, either government or privately sponsored, that protects residential mortgage lenders against loss by reason of borrower default. In some countries MI is also known as Lenders Mortgage Insurance or Mortgage Indemnity Guarantee Insurance. Mortgage default insurance is separate and distinct from: (1) mortgage life insurance, which provides households protection in the event of the mortgage borrower’s death; and (2) financial guaranty insurance, which protects investors from default-related losses on rated financial investments, including mortgage-backed securities.

Sponsor	Insurance Written Loan Amount	Percent of Coverage	Risk Exposure	Minimum Reserve Ratio/Factor	Total Required Reserve
Government	\$100 million	100%	\$100 million	2% / 50:1	\$2 million
Private	\$100 million	Top 25%	\$25 million	4% / 25:1	\$1 million

The balance of this article examines these regulatory goals for successful and enduring MI programs.

## Capital reserves

Mortgage insurance capital reserve requirements differ from most other insurance lines in that they need to be directly related to the aggregate risk exposure of a program's total insured loan portfolio. For insurance programs where the standard level of coverage is 100 percent of each loan amount, risk exposure will be equal to the aggregate outstanding balance of all loans insured. For programs where coverage is designated as first loss or top layer, risk exposure for each loan will equal the outstanding loan balance times the percent of coverage, with aggregate program exposure then equaling the sum of all individual exposures.

For example, the USA Government's FHA home mortgage insurance program, with standard 100 percent coverage, has a statutory minimum reserve requirement equal to *two per cent* of total insurance in force (which equals total risk exposure). By contrast, private insurers - which write a range of top layer/first loss coverages that average roughly 25 percent of total insured loan amount - are generally required to maintain minimum regulatory reserves equal to *four per cent* of total risk exposure. So, minimum regulatory capital for these public and private programs respectively, for \$100 million loan amount of new insurance written would be as in the table above.

Whereas the total risk exposure for the 100% coverage program is about four times that of the first loss/top layer coverage program, note that the minimum required reserve for 100 percent coverage is only twice that of the partial first loss coverage. The reason, of course, is that

most foreclosure-related losses in any insured mortgage portfolio will be covered by insurance whose per-loan loss limit is the first 25 percent. Nominal risk exposure on the remaining 75 percent, at least during normal times, will be largely covered by the recovery value of the foreclosure property. Accordingly, the "bottom" 75 per of an individual loan's risk exposure effectively requires the same two percent reserve as the top 25 percent.

Periods of cyclical adversity over recent decades, aided by the accumulation of rich portfolio experience data in more advanced markets, has led to two notable refinements in the way financial regulators establish minimum capital reserves for mortgage insurance providers:

1. Greater recognition that increased loan-to-value ratios (LTV) is a prevalent and consistent determinant of increased mortgage risk, including both greater default frequency and higher loss severity<sup>3</sup> and, therefore, a justifiable basis for applying higher capital reserve factors for higher LTV classes; and
2. Economic "stress test" modeling of insured mortgage portfolios to establish claims-paying capacity during simulated future periods of concentrated defaults, claims and losses - while segmenting the portfolio risks into higher and lower risk classes.

Regarding loan-to-value ratios, numerous studies across international boundaries confirm the strong, abiding relationship between higher LTV's and much higher losses (frequency times severity), as illustrated by *Exhibit 1*.

The USA Model Regulation for mortgage default insurance, as developed by the National Association of Insurance Commissioners (NAIC), has for some time included recommended minimum capital ratios that include substantial factor reductions for loans  $\leq 75$  percent LTV. This guidance, however, has not been meaningful because (1) most state insurance regulators have not adopted this particular provision, and (2) nearly all insured loans are above 75 percent LTV where this Model Regulation does not differentiate capital requirements - despite the fact that the truly dramatic risk increments relating to LTV are those in the 80 to 100 percent LTV range (see *Exhibit 1*).

Other countries with established MI programs and effective MI-specific regulation over recent years have adopted minimum MI capital regulations that apply increased capital factors to successively higher LTV insured loan categories. Such countries include Australia, Canada and Mexico, as detailed in *Exhibit 2*.

### Exhibit 1

#### Relative levels of expected default frequency, loss severity, and total loss

Six-country average\* (averages relative to 75-80% LTV which = 1.00)

LTV Ratio	Default Frequency	Loss Severity	Total Loss
60.01-65%	0.62	0.40	0.25
65.01-70%	0.73	0.63	0.46
70.01-75%	0.84	0.83	0.70
<b>75.01-80%</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>
80.01-85%	1.20	1.15	1.39
85.01-90%	1.48	1.29	1.92
90.01-95%	1.88	1.41	2.67
95.01-98%	2.31	1.46	3.40
98.01-100%	2.69	1.52	4.14

\*Australia, Germany, the Netherlands, Spain, U.K. and U.S.

Source: Fitch IBCA Ratings

### Exhibit 2

#### MI regulatory capital by LTV ratio

LTV	Australia	Canada	Mexico
70%	0.16%	0.07%	0.14%
75%	0.36%	0.26%	0.40%
80%	0.36%	0.26%	0.88%
85%	0.48%	0.56%	1.81%
90%	0.96%	0.89%	3.56%
95%	2.00%	1.43%	6.71%

Source: Genworth Financial

<sup>3</sup> Basel II international capital regulations for lending institutions refer to these two generic risk benchmarks as Default Probability (DP) and Loss Given Default (LGD) respectively.

Mexico's required capital ratios are higher than Australia's and Canada's, especially for the highest LTV classes. They reflect some adverse experience of an earlier public MI program targeted toward low-income housing. With the emergence of broader-based mortgage experience data and a more extended period of in-country risk experience, these very high capital factors may be reconsidered.

Investment rating agencies - notably S&P, Moody's and Fitch IBCA - have served as quasi-regulators of private MI providers in developed markets since the 1980's, during which time their rating methodology has relied upon stress test modeling to determine MI claims-paying capacity. These tests became *de facto* regulation to the extent that MI providers were required to maintain minimum investment grade ratings in order to be qualified as credit enhancers on rated mortgage-backed securities (and in the USA to be eligible to provide mandated coverage on high LTV loans sold to Fannie Mae and Freddie Mac).

Some financial regulators also have begun moving toward this more sophisticated approach to capital adequacy. The Australian Prudential Regulatory Authority (APRA) recently adopted a revised MI capital solvency model that is similar to that of the rating agencies' method, i.e., it applies Australian stress scenarios and a sources and uses of funds model to estimate claims capacity. The end result has been minimum MI capital requirements roughly equivalent to an "AA" claims-paying capacity as defined by the rating agencies.

The USA government-sponsored MI provider - the FHA Mutual Mortgage Insurance Fund - is required by law to undergo a detailed annual actuarial review - conducted by a qualified private actuary - that resembles an economic stress test. The stress test requirement - which takes strong account of LTV-driven risk differences - operates in conjunction with the statutory minimum two percent risk-to-capital ratio that does not vary by LTV. During Fiscal Year 2008 (ending 9/30/08), stress conditions caused FHA's capital ratio to drop by more than one half, from 6.4 to 3.0 percent.

In Europe, including the UK, financial regulators generally do not require the uniquely high capital reserve levels such as noted above. Instead, the market has tended to look toward the rating agencies' model-driven assessments of MI claims-paying capacity. The advent of "Solvency II" regulations in the European Union should result in more demanding risk-based capital requirements for credit enhancers, including mortgage insurers.

In countries that do not have any MI program, but where MI is being considered, it is especially important for financial regulators to be proactive in setting strict risk-based MI capital requirements. Some countries have permitted existing multi-line insurers or other startup entities to begin offering some form of mortgage default repayment guarantee to lenders - without having adequate dedicated reserves, and most likely, without understanding the catastrophic nature of the risk they are purporting to cover. Once this type of credit insurance product is allowed to enter a national market - under-reserved and therefore most likely underpriced - this invites instability and loss of credibility, while the presence of such programs will deter the entry of legitimate, well-capitalized MI providers operating on sound commercial principles.

Finally, regarding minimum capital, any regulatory authority for MI *reinsurance* should include the same capital ratio requirements for reinsurance risks assumed as are applicable to the primary MI underwriter.

**Contingency reserves.** In addition to requiring relatively high capital reserves that are directly proportional to outstanding risk exposure, financial regulators in some countries also require that private MI providers maintain a formula-based "Contingency Reserve" to reinforce readiness to meet depression-level claims rates. This unique concept began in the USA in the 1950's when a reborn private MI industry sought to re-establish credibility and distance itself from the debacle of the 1930's (see below). Contingency reserve regulations have since been established in Canada, Hong Kong and Mexico. While varying in detail, the basic concept is for a substantial percentage of earned premiums to be continually placed in a segregated reserve account that is not released into unencumbered earnings for many years. The only authorized early release of contingency reserve funds is when loss ratios during any particular year exceed a specified level or upon special approval of the regulator. In the USA, for example, 50 percent of all earned premiums is allocated to the contingency reserve for a period of ten years. In this instance, it is notable that the ten year retention period exceeds the average expected life of loans insured, so that the contingency reserve build-up on loans made during good times is held for some time even after those particular loans have gone "off the books".

It is notable that this contingency reserve formula - operating in the USA over an unusually long low-claims period in the USA that preceded the current, sudden economic reversal - caused total required reserves to build-up to levels that

considerably exceeded the four percent (1:25) regulatory minimum ratio of capital to risk exposure. Entering 2009, as "contingency" has become reality, these statutory reserves are being drawn upon to pay policyholders' claims during a most stressful period.

The Canadian system calls for a somewhat different type of catastrophic MI claims reserve, one collected from earned premiums and then held by the Government. This long term reserve build-up is designed to support a 90 percent government reinsurance guaranty for private MI providers, which guaranty pay outs in the event a private firm becomes insolvent.

**Loss reserves.** The above discussion of capital reserves, including the concept of a regulatory contingency reserve, all relates to the asset side of an MI provider's balance sheet - roughly comparable to bank capital, but with far less leverage. In addition, good MI regulation should require an appropriate loss reserve to be maintained on the liability side of the balance sheet - somewhat akin to special provisioning by a bank for its non-performing assets (NPA). For example, the NAIC Model Regulation for MI in the USA requires a "case basis" loss reserve to be established for several classes of non-performing insured loans in progressively more serious states of default, including: (1) pre-foreclosure defaults; (2) in-foreclosure defaults; (3) completed foreclosures; and (4) claims received and in process. One difference between MI loss reserving and bank provisioning is that the MI reserving method typically is more dependent upon statistical analysis of historical patterns of default and "cure" probabilities for various loan categories (e.g. LTV ratio).

The need for effective loss reserving regulation applies to both public and private MI programs, as a proper determination of capital reserve adequacy at any point in time should require that expected losses on insured loans already in default have been deducted from capital and recognized as a liability in the loss reserve. Following an earlier down cycle, the USA government's FHA program was found to have inadequate loss reserves for insured loans in default and foreclosure; this problem has since been rectified with an improved reserving methodology and additional funding.

### Regulatory transparency – why MI should be monoline

Most countries with well developed MI regulation have determined the need for mortgage default insurance to be operated and regulated as a monoline entity. In other words, beginning with the balance sheet assets, liabilities and reserves, and extending to the definition of the



covered hazard, the authorized activity of the corporation or program, mortgage insurance needs to be both regulated and operated in a manner that is separate and distinct from all other insuring and non-insuring activities.

MI is a highly specialized activity, requiring focused management expertise. The long cycle of risk requires a disciplined approach and an enduring commitment of human and financial resources – whether they are public or private. More importantly, when the regulator (and also the rating agency or insured investor) seeks to determine MI capital adequacy over the long economic cycle, the relationship between risks and capital needs to be transparent. Whether by means of stress scenario modeling or less complex risk-to-capital ratio standards, establishing claims paying capacity will be far more difficult to discern if accumulated capital reserves are subject to claims from policyholders or lines of risk that are shorter-term and unrelated to the catastrophic nature of mortgage default risks.

Conversely - and of equal concern to the financial and insurance regulator - the interests of *non-MI insurance policyholders* are not well served if their policyholders' reserves are commingled with those of a provider of MI catastrophic risk coverage.

While some of the reasons why MI should be monoline relate to the regulated "business of insurance", the key factor - transparency and segregation of risks and reserves associated with economic catastrophe - applies equally to both public and private MI programs.

As discussed below, there are several other desirable regulatory features unique to MI - such as a prohibition on real estate-related investments - that are not suitable for multiline insurers and, therefore, reinforce the monoline concept for MI.

The detail of how monoline is defined for MI purposes varies somewhat among those countries where this important regulatory feature is found. But the basic principle is applied rather consistently: monoline MI refers to the insurance of housing-related mortgage loans, which definition is targeted mainly or exclusively to individual homes and will tend to exclude or greatly limit, for example, loans on multi-family rental buildings. In its most restrictive form, as in the USA, the monoline MI program will also be limited to first position liens secured by completed construction. Variations on the monoline requirement also appear in the MI regulations governing active programs in Canada, Mexico, Australia and Hong Kong; recently adopted MI regulations in India and Singapore also include the monoline feature (in India as

a "mortgage guarantee" rather than as "mortgage insurance").

Two painful episodes where MI was offered as part of a multiline package occurred in the UK in the 1980s and the USA in the 1930s.

Some UK multiline carriers, without benefit of specialized MI risk management expertise, offered MI as part of a multiple-risk insurance package. The MI part of the contract was poorly drafted and the product under-priced. When the inevitable downturn came, falling home values and borrower defaults led to skyrocketing claims and, in turn, confusion and disputes as to what was and was not covered. The "mortgage indemnity guaranty" (MIG) product lost much credibility and the UK mortgage lending market suffered as a result.

In the USA, prior to the Great Depression of the 1930s, there was a thriving industry of mortgage financing firms that conducted multiple businesses including mortgage lending, mortgage brokerage and title insurance. Many such firms eventually added repayment guarantees for those who purchased their mortgage offerings. Unlike the UK, where the problem related mainly to the comingling of some standard casualty lines with MI, in the early USA experience MI was comingling with some non-insurance mortgage financing activities and with title guarantees. Equally damaging was the indiscriminant coverage of loans secured by non-housing real estate, including single-purpose commercial properties and even vacant land. The ending was more disastrous than the UK: dozens of MI providers failed and thousands of small trusting investors in "guaranteed mortgage participation certificates" lost their personal savings.

The regulatory outcome of these two adverse experiences differed markedly. The USA failures resulted in a 20 year national government MI monopoly (the Federal Housing Administration's Mutual Mortgage Insurance Fund) and a comprehensive analysis of the regulatory failings (by the State of New York) that eventually led to the adoption of monoline state insurance regulations for MI, with other key restrictive provisions as discussed herein.

In the UK, by contrast, steps were taken by private market players to "fix" problems with the MIG insurance contract terms, while some lenders migrated to "captive mortgage reinsurance" as a form of self-insurance. But a remarkably laissez faire regulatory environment still sets the UK apart from many other countries where MI is subject to specialized regulation.

Government-sponsored MI programs in Sweden and the Philippines, while focusing generally

upon housing finance, engaged in multi-family and construction/development loans respectively. Both eventually encountered excessive losses leading to the need for government rescue and restructuring.

Finally, regarding regulation of MI *reinsurance*, an authorized MI reinsurer need not be a monoline entity as above, but regulation should require any MI reinsurer to segregate all reserves applicable to MI risk exposure, subject to the same stringent capital reserve requirements as are applicable to the primary MI underwriter.

### Adverse risk selection: Should use of MI be mandated by regulation?

As noted, many countries have adopted MI to strengthen their housing finance sector, while encouraging homeownership. In so doing, however, they may have also discovered that there is no natural sustainable market for MI as one might find for other lines such as life, fire and vehicle coverage. Given total discretion, mortgage lenders may tend to use MI selectively or temporarily as a cautious way to enter an untested market segment - for example, moving "down market" to serve lower income or informal sector borrowers - or as a means to accept (or to reject) individual applicants having marginal credit quality. Then, for loans or market segments where they are comfortable, lenders will selectively retain the full credit risk ("self insure"), leaving the MI provider struggling with both the negative side of "adverse risk selection" and the lost opportunity to insure higher quality loans and diversity risk. This potential for adverse risk selection has remained one of the major problems and challenges for both the MI provider and the regulator.

The MI provider - whether government or private - that is unprotected from adverse risk selection will tend to experience an unstable, low volume, high unit costs and high-risk operating environment that is not conducive to building essential long-term financial solidity and, therefore, failing to meet broader public policy goals. Most countries having a successful long-term experience with MI have adopted either a regulatory *mandate* or a significant regulatory capital *incentive* for banks and other regulatory lenders to use MI on a broadly defined segment of their home loan originations. For obvious reasons, lenders will tend to resist regulations that mandate the use of MI.

Since MI is most appropriately used on higher risk residential mortgages, which over time coincide closely with high LTV loans (see above), regulatory mandates or incentives make sense only for loans which exceed some threshold LTV ratios, above which property recoveries are



unlikely to cover lender exposure, even during normal times. This target LTV threshold will vary among countries, depending upon such factors as transaction and foreclosure costs and interest rate levels.

Canada is perhaps the best example of mandated MI that has proven successful. Canada's National Bank Act and companion legislation for over 50 years has mandated MI coverage - either government or private - on all high LTV ratio loans at the point of origination. (As a practical matter, any country that requires lenders to secure MI coverage probably would need to have a government-sponsored MI program, with private MI as a desirable alternative choice, market conditions permitting). The threshold LTV triggering MI usage in Canada - for many years set at 75 percent - was raised to 80 percent in 2006, following a detailed formal review. Policymakers concluded that the benefits of this regulatory mandate justified its continuation despite pressures to end it.

Although Canada has suffered a recent housing market downturn and rising defaults along with most other countries, its housing finance system so far has stood up remarkably well. The MI regulatory mandate - including conformance to third party MI underwriting standards and review - arguably has helped Canada maintain transparency and avoid some of the high-risk mortgage lending practices and excessive losses of other markets, including in the USA and Europe. Furthermore, both public and private MI programs in Canada appear to have encouraged, not stifled, healthy innovation in mortgage lending.

From a bank regulator's perspective, mandated MI has helped to reduce stress on the banking system by spreading risk across individual lending institutions, both large and small, and also by adding capital support from outside the banking system. Fortunately, the Canadian market is large enough, and the regulatory system sufficiently robust, to support both public and private MI programs, thereby affording lenders a competitive choice for a product they are required to buy.

While solving the basic problem of adverse risk selection, the MI regulatory requirement has also created a broad-based pool of risk capital, together with some inherent cross subsidy between higher and lower risk borrower segments, which helps to expand financing

availability to more aspiring homeowners, while retaining generally prudent lending standards.

The Dominican Republic has also mandated lender use of MI for nearly the past 50 years. Here, a much smaller market is served by a single government-sponsored MI program, which was originally established to enforce conservatism and stability among inexperienced lenders and an uncertain home lending environment. The program itself has been run responsibly and - with very low claims - has held in check potential home lending excesses over the years. But private lenders now chafe at what they perceive to be a rigid requirement for a product whose cost is too high and which is not sensitive to an evolving market. Furthermore, the governing regulation mandates 100 percent MI coverage on all mortgage loans originated, regardless of loan-to-value ratios, for their full term. This adds a significant cost - passed on to all borrowers - for many low LTV loans where no MI credit enhancement is needed.

Lenders' acceptance of mandated MI usage will depend much upon their perception that the MI coverage is fairly priced, is market-sensitive (ideally with a choice of provider), covers real risks and will deliver future claims benefits as promised.

While Hong Kong and the USA's financial regulators do not directly require MI coverage of high LTV loans by primary market lenders, those that originate high LTV loans for sale to the Hong Kong Mortgage Corporation (>70% LTV) and in the USA to Fannie Mae and Freddie Mac (>80% LTV) are in most instances required to secure qualified MI coverage in order to make the loans eligible for purchase.<sup>4</sup> As

these secondary market agencies dominate their respective home finance markets, MI providers are able to achieve the above-noted benefits relating to avoidance of adverse risk selection, achieving a large, diverse risk pool, and expanding access to homeownership.

### Basel I and II risk-based capital relief as MI incentive<sup>5</sup>

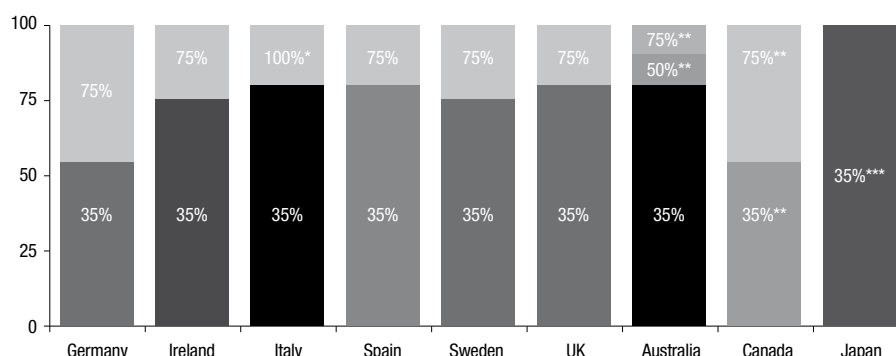
Banking regulators in many countries - including some that do not have specialized MI regulations - give beneficial recognition, in the form of a reduced risk-based capital requirement, to lenders that secure MI (or other qualified) credit enhancement protection on high LTV loans. The specifics vary across countries, but mainly relate to the following three variables:

- What LTV threshold defines "high LTV" at which point MI or other qualified credit enhancement protection will be required to avoid application of a higher risk weight factor;
- Whether the reduced risk weight granted for MI or equivalent protection will be applied only to the portion of the loan that is covered (proportional treatment) or calculated on the entire loan balance (non-proportional treatment); and
- The amount of risk weight factor reduction that is granted and the basis for that determination.

Basel II reduces the applicable risk weight for a "standard risk" home mortgage from 50 to 35 percent (4% to 3.2% risk-based capital ratio).<sup>6</sup> Exhibit 3 illustrates how various countries are

Exhibit 3

#### LTV Threshold Percentages and Standard Risk Weights



\*Italy - If the top portion is covered, the whole loan is risk weighted at 35%.

\*\*Australia and Canada - The risk weight is applicable to the whole loan

\*\*\*Japan - Mortgages >100% are risk weighted at 75% (whole loan)

Source: Genworth Financial

<sup>4</sup> In practice, the Hong Kong Mortgage Corporation provides primary MI, while mandating MI reinsurance.

<sup>5</sup> Details of Basel I and II risk weighting are beyond the scope of this article. This section briefly summarizes elements most relevant to MI regulation.

<sup>6</sup> Example uses the "Standardized Approach". The largest banks will be eligible to apply the "IRB Approach" that relies upon regulator-approved, experience-based risk models internally developed by the bank.

*Exhibit 4*

### Potential MI Benefit Based upon Standardized Approach

Full (Non-proportional) risk weight treatment

	Normal	High LTV
Baseline requirement	8%	8%
<b>Without MI coverage:</b>		
Assigned risk weight	35%	75%*
Capital allocated	2.8%	6%
<b>With AA-rated MI:**</b>		
Assigned risk weight	20%	20%
Capital allocated	1.6%	1.6%
<b>Potential MI benefit</b>	<b>1.2%</b>	<b>4.2%</b>

\* MI recognition and coverage level to be determined by individual country

\*\* Local regulators determine LTV level and full or partial risk weight treatment

Source: Genworth Financial

*Exhibit 5*

### Risk Weight Capital Credit for MI in Australia

(Standardized Approach)

LTV Ratio	Standard Eligible Mortgages		Non-standard Eligible Mortgages	
	Risk Weight (no MI)	Risk Weight (with MI)	Risk Weight (no MI)	Risk Weight (with MI)
<60%	35%	35%	50%	35%
60.01 – 80%	35%	35%	75%	50%
80.01 – 90%	50%	35%	100%	75%
90.01 – 100%	75%	50%	100%	75%
>100%	100%	75%	100%	100%

Source: Genworth Financial

selecting different LTV thresholds to distinguish standard from high-risk home loans. Those above the threshold would be assigned a much higher risk weight percentage - generally 75 percent or more. This framework sets a proper risk management foundation for country bank regulators to then recognize qualified MI coverage on loans that exceed the designated LTV threshold for purposes of granting a substantially lower risk weight.

This type of regulatory incentive for MI usage not only aligns added insurance (government or private) capital with higher credit risks, it also increases - albeit to a lesser extent than a regulatory mandate - MI program viability and ability to avoid adverse risk selection. The regulator preferably would also set an absolute upper LTV limit of less than 100 percent, even with MI coverage, thereby requiring some minimum percentage of borrower cash/equity contribution.

*Exhibit 4* illustrates how a qualified MI program, which a country regulator recognizes as justifying a 20 percent risk weight, would benefit a lender making both normal and high

LTV loans. This illustration assumes that the reduced risk weighting would apply to the entire loan balance (non-proportional treatment). Since many MI programs are designed efficiently to cover the high-risk first loss layer, a proportional treatment giving capital relief only on the covered portion would provide a much lower benefit.

*Exhibit 6*

### Proposed Basel II Risk Weight Credit for MI in the USA

#### MI Provider Rated "A" or Higher; First Loss Coverage Down to 60% LTV

(First Liens - Standardized Approach)

LTV Ratio	Risk Wt	No MI (capital allocated)	With MI (capital allocated)
<=60%	20%	1.6%	1.6%
60.01 – 80%	35%	2.8%	1.6%
80.01 – 85%	50%	4.0%	1.6%
85.01 – 90%	75%	6.0%	1.6%
90.01 – 95%	100%	8.0%	1.6%
>95%	150%	12.0%	1.6%

Source: Genworth Financial

Once a regulator has determined an appropriate minimum level of first loss coverage needed to cover nearly all of the risk, it makes sense to apply the lower capital factor to the full loan balance. Regulators in Australia, Hong Kong, Mexico, Singapore and the USA use the preferable full (non-proportional) method of capital relief. European financial regulators - most of whom have no specific monoline MI regulations - tend to apply the proportional method of capital relief under Basel II - which relief applies uniformly to a range of qualified credit enhancement tools, including MI providers rated "AA" or higher.

The minimum required depth of first loss coverage to qualify for full balance (non-proportional) bank capital relief is defined by countries that use this approach in two different ways:

1. A fixed percentage of coverage, as in the USA; or
2. A sliding scale of "down to" coverage that effectively leaves the lender with a reduced LTV exposure limit, as in Australia, where this lender exposure limit is set at 60 percent LTV.

*Exhibit 5* illustrates in further detail how the Australian bank regulator, using a Basel II framework, applies a sliding scale of risk-based capital credit for "standard" and higher-risk "non-standard" home mortgages in various high LTV classes.

The proposed USA Basel II Standardized rules will offer greater capital relief recognition for the use of MI than in other countries with benefits varying by the claims-paying capacity rating of the MI provider (see *Exhibit 6*).

The matter of risk-based capital under Basel II entails banking, rather than insurance regulation. There is one particular reason why a banking regulator should consider - everything else being equal - assigning a lower risk-based capital requirement to a qualified MI provider versus the risk-based capital

requirement for an individual bank. That is because a nationwide MI program benefits from risk dispersion across many individual lenders, each of which will, over time, exhibit its own distinct risk profile - some much higher risk than others. A study by Genworth Financial covering its experience with some two dozen lenders in Australia (where Genworth operates the largest MI program) revealed that highest risk Australian lenders experience loss ratios that are roughly double that of the average of all lenders (see *Exhibit 7*).

To the extent that MI coverage is provided by a government-sponsored or government-reinsured program with a sovereign guarantee, the applicable risk weight may be reduced to zero.

**Unified financial regulator.** Finally, there is the question of how best to coordinate, or harmonize, banking and insurance regulation in order to achieve the greatest possible benefits from having MI as part of a country's housing finance sector. Part of the challenge is how best to deploy regulatory capital between two separate financial sectors (or three including securities) to encourage stability, vitality and efficiency. Beyond risk-based capital, however, the specialized skills a regulator needs to understand and properly oversee an MI provider entail as much banking as insurance savvy. This can be a relevant consideration in some developing countries that are considering MI, but where insurance regulation is weaker than banking regulation.

Some countries, such as Mexico, Mali and India, adopted initial regulations that would govern an MI provider, not as an insurance corporation, but, rather, as a specialized form of banking institution (Mexican MI is now regulated as a specialized line of insurance). The USA operates under the most fragmented structure, where insurance is regulated by the 50 individual states and banking is overseen by a fragmented array of national and state regulators. While MI regulation has performed reasonably well in the

USA, there's been no banking-insurance regulatory coordination.

One seemingly ideal solution - the unified financial regulator - may or may not work well in practice. Australia, Canada, Sweden and the UK are among the countries having a unified financial regulatory regime, as do a number of emerging market countries. In theory, it should be advantageous to have banking and insurance (and securities) under one umbrella regulator to help assure coordination, harmonization of capital requirements, and cross-fertilization of regulator staff skills. But the unified regulator approach is not a panacea; some country's circumstances might even render it counter-productive.

## Maintain actuarially sound premium rates

Regulated private insurance firms in all countries should be expected to charge premium rates that are neither inadequate (for solvency purposes) nor excessive (for consumer/policyholder protection). This regulatory principle applies to all insurance lines, including MI. The above discussion of MI capital adequacy - the unusual complexity, long time horizon and catastrophic aspect - also applies to determining premium rate adequacy. Unlike most property and casualty lines, the MI premium rate that is set at loan origination endures for the entire life of the insurance contract (up to the full term of the loan). Accordingly, there is not the luxury of increasing rates on the existing book as economic and market conditions deteriorate.

Of particular note regarding regulation of MI premium rates is the need to do so for government, as well as privately, sponsored MI programs. It is far preferable for transparent MI premium rate subsidies to be provided to targeted (e.g. lower-income) homeowner groups

than for an entire public MI program to be under-priced. Whereas sustained under-pricing of private MI will result in insolvency and a regulatory takeover, under-pricing of government MI will result in unwelcome and untimely "bailout" by the national treasury, program shutdown, or embarrassing failure to pay claims when due. Government-sponsored MI programs in Lithuania and Mexico exemplify the use of targeted premium subsidies to help make insured loan financing more affordable for lower-income homebuyers.

National USA housing legislation creating government MI in the 1930s required the Federal Housing Administration (FHA) program to maintain actuarially sound premium rates - which it did for many decades. However, by the 1980s both the USA and Canadian government MI programs were found to be technically insolvent (i.e. projected future claims/losses exceeded projected capital reserves). Legislative and regulatory reforms were adopted that required both programs to operate under commercial insurance principles and to adjust underwriting and pricing accordingly.

With this firmer regulatory footing going forward, no direct government rescue was ever required for either program. By contrast, a separate "special risk" government-run MI program in the USA, rather than subsidizing low-income borrower MI premiums "up front", under-priced the entire program and eventually required "bailout" funds from the USA Treasury.

## Program parameters to avoid excessive risks

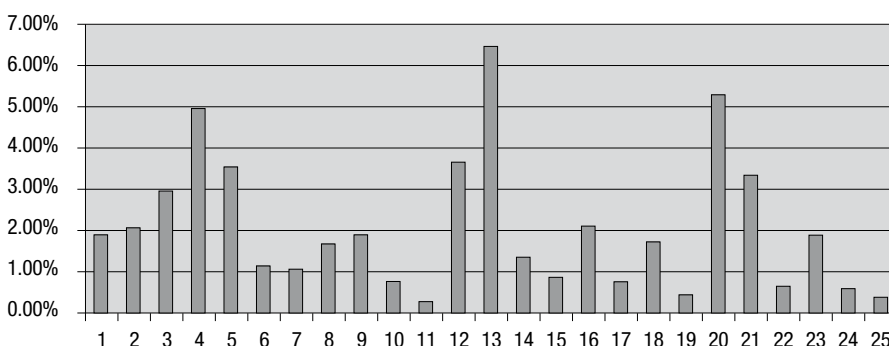
An MI program - private or government - may benefit from a governing regulation that sets some broad program parameters that will limit excessive risk, so long as restrictions do not stifle healthy innovation. For example, MI regulation in the USA normally has set an upper LTV limit and limited insurable loans to "amortizing" first liens that are secured by residential properties consisting of no more than four units. *Exhibit 9* (see Statute versus Regulation section below) suggests a number of other possible program parameters that might be included in an MI program regulation.

## Social targeting of public MI benefits

Well-conceived MI programs - both public and private - support broad public policy and housing finance sector goals involving expanded homeownership opportunities, efficient capital support and strengthened management of systemic credit risk. Government-sponsored MI,

*Exhibit 7*

### MI Capital Reserves Benefit from Risk Dispersion among Individual Lenders Having Widely Disparate Loss Rates



Source: Genworth Financial

Exhibit 8

## Socially Targeted Public MI Programs Regulatory Limits in Selected Countries

Country	Type of Limit	Country	Type of Limit
Algeria	Loan amount	The Netherlands	Home price
Belgium	Income Home price	The Philippines	Income Home price
France	Income	South Africa	Loan amount
Kazakhstan	Loan amount	Sweden	Loan amount
Hong Kong	Loan amount	USA (federal)	Loan amount
Lithuania	Loan amount	USA (state – MA)	Income
Mali	Home Price		Home Price Loan amount

Source: 2005 survey by author conducted for The World Bank

moreover, may be charged with further social targeting of their program's benefits. Most obviously, a housing benefit supported by public capital normally would not extend to high-end luxury housing (likewise, public financial support for the very lowest income households generally involves rental, not owner-occupied, housing). Accordingly, regulations governing a public MI program will normally include some upper limit on borrower income, home price and/or loan amount. Exhibit 8 offers examples of such social targeting by public MI programs.

### Business practices of private MI providers

Effective regulation of privately sponsored MI programs should address several areas of activity that normally would not apply to a government-run MI program, including:

- Special limitations on portfolio investments;
- Limitations on ownership, control, transactions with affiliates;
- Prohibitions against improper financial inducements; and
- Special consumer protections.

**Investment restrictions.** Because MI capital reserves are expressly set aside to pay policyholders' claims that concentrate during periods of falling real estate values and economic adversity, the private MI firm should not maintain such reserves in the form of real estate or mortgage-related assets. Unlike other insurance lines, private MI needs to be prohibited by regulation from holding such real estate related assets as reserves, because their value is susceptible to shrinking substantially at just the time when they need to be liquidated in order to pay large numbers of claims. Private MI in Mexico and the USA

include such restrictions, including mortgage-backed securities. The recent drastic loss in value of such MBS paper worldwide, despite often having top investment grade ratings, attests to the wisdom of this particular type of regulatory requirement.

**Limitations on ownership, control, transactions with affiliates.** In order to perform responsibly over the long-term, private MI providers need to be assured of financial and underwriting independence from affiliated business entities. Furthermore, financial institutions and holding companies should not be able to engage in "capital arbitrage" by artificially shifting risk between MI and non-MI affiliates. Corporate ownership or control of an MI firm by a banking institution can compromise the MI firm's ability to exercise independent underwriting judgment when being asked to assume credit and property risks for a parent company or affiliate.

**Prohibitions against improper financial inducements.** MI is unusual in that the mortgage lender, as the MI policyholder, typically is empowered to place significant volumes of business with an MI provider and then pass along the MI premium cost to its individual borrowers (as discussed further below, the borrower is not a party to the MI insurance contract and is not in a position to select the MI provider). This type of situation, if left unregulated, can result in conflicts of interest that serve to benefit the insured lender at the cost of both the borrower and the MI provider.

Effective regulation to prevent such practices needs to prohibit financial inducements, such as commissions, rebates or any equivalent indirect payments in exchange for the lender directing MI business to a particular carrier. The unrelated mortgage life and disability insurance lines, without such strict prohibitions, have in some markets revealed a history of grossly excessive commissions which simply add costs that are

passed on to borrowers without improving coverage for policyholders. Mexico and the USA have strict prohibitions against such financial inducements. Canada is examining the need for such regulation. Australia imposes strict limitations on such practices.

**Special consumer protections.** Beyond whatever general consumer protections may be advisable for any country to adopt with regard to financial services and insurance - such as regulation of premium rates - experience has shown that the unusual aspects of MI extend to the need for several specialized forms of MI-related consumer protection. These special consumer protection concerns include three distinct topics:

1. *Definition and rights of beneficiary under the insurance contract:* In a number of countries with well-established MI programs - including the UK, Australia and New Zealand - confusion and controversy has arisen as a result of home mortgage borrowers believing that they were "beneficiaries" under the MI insurance agreement. Why? Because many borrowers have (correctly) understood that they are paying the MI premium (albeit indirectly) and that they are (in some fashion) "benefitting" from the MI coverage.

In fact, the MI contract is a two-party agreement between the public or private MI provider and an insured lender that has been pre-qualified under the MI program to originate and submit loans for coverage. MI premium payments are remitted by the lender, with those costs then passed through to the borrower as part of overall financing costs and fees - either directly or in the form of a slightly increased mortgage interest rate. Borrowers "benefit" in the sense that MI protection *for the lender* enables them to qualify for a higher risk loan - e.g. one with less cash down payment - than would otherwise be available to them; they benefit in being able to achieve homeownership sooner.

When experiencing financial stress leading to mortgage default, borrowers may be surprised to learn that foreclosure, i.e. the loss of their home to the bank, is what triggers the MI claim "benefit"; furthermore, that the MI claim payment does not trigger any debt forgiveness or other favorable treatment; that it even results in the exercise of "subrogation rights" by the mortgage insurer (see below). This basic misunderstanding of what MI is resulted in litigation, adjustment of contract terms, and eventually even a change in the basic name from "Mortgage Insurance" to "Lenders Mortgage Insurance" in several countries, which served to clarify this unfortunate mis-



## Regulation of Mortgage Default Insurance: Principles and Issues

Exhibit 9

### Potential MI Statutory and Regulatory Provisions

Provision	Statute	Regulation
<b>Definitions</b>		
1. Mortgage default insurance	XX	
2. Authorized mortgage instrument	XX	
3. Authorized financial institution	XX	
4. Authorized loan administrator		X
5. Value (collateral)		XX
6. Loan-to-value ratio		XX
7. High loan-to-value ratio		X
8. Default		X
<b>Authority, requirements, and restrictions</b>		
9. Authority to conduct business	XX	
10. Authority to adopt supporting regulations	XX	
11. Minimum paid-in capital	XX	
12. Minimum investment quality rating		X
13. "Monoline" requirement	XX	
14. Policyholder/beneficiary is lender, not borrower		X
15. Maximum risk exposure-to-capital reserves ratio	XX	
16. Risk concentration limits		X
17. No rebates or commissions; no rate discrimination		XX
18. File premium rates, policy forms with regulator		X
19. Conflict of interest provision – ownership and control		XX
20. Regulatory sanctions		X
21. Provisioning / Technical reserves		XX
22. Catastrophic "contingency" reserve		X
23. Reinsurance / "captive reinsurance"	XX	XX
24. Maximum loan-to-value ratio		XX
25. Lien priority / first lien requirement	XX	XX
26. Permitted / prohibited mortgage instruments		XX
27. Permitted / prohibited coverages and exclusions		X
28. Required underwriting documentation		X
29. Quality control		X
30. Required data collection, regulatory reporting		X
31. Access to credit reference bureau data (may be banking regulation)		X
32. Assignability of MI policy/coverage		X
33. Borrower/consumer protection provisions		X
<b>Investments</b>		
34. Qualified investments		X
35. No investments in affiliates		XX
36. No real estate or mortgage investments		XX
37. Liquidity ratio		X

"xx" = high priority provisions

"x" = other provisions to consider

Provisions showing a notation in both columns signifies "either/or"



reading of what MI is. Experience suggests the need for regulatory clarity on this basic point.

2. *Exercise of subrogation rights:* Many lines of insurance, including MI in some markets, give the right of “subrogation” to the insurer in the event of a claim. This means that the insurance provider, after paying the lender’s claim for loss, may then assume the lender’s rights - if any - to pursue the debt owed by the defaulting borrower. Such action, however, has tended to fuel the type of consumer controversy noted in #1 above. Absent borrower fraud or misrepresentation, the individual homeowner who has experienced foreclosure arguably should be protected from being pursued by the MI provider that underwrote his/her credit.

3. *Cancellation of coverage and refunding of unearned premium:* While some government-run MI programs require the MI coverage to run for the entire life of the loan, most programs allow the lender to terminate the MI policy when the lender believes that the LTV has reduced and borrower equity increased, to the point where MI credit enhancement is no longer needed. Consumer protection questions that may warrant regulator attention where the consumer pays the MI premium charges include:

- If the MI coverage is cancelled and a refund of premium is due from the MI provider, should that refund be returned to the borrower or kept by the lender?
- Should the lender be permitted to continue collecting MI premiums from the borrower after deciding to terminate the MI policy and to stop remitting premium payments to the MI provider?

### Statute versus regulation

This question applies to both public and private MI regulation. The regulatory framework for MI, irrespective of country, normally should be some combination of statute and regulation. A country’s Insurance Law or other applicable government statute should contain some explicit authority for MI - perhaps within a more broadly defined “credit insurance” category - defined so as to distinguish it from other insurance lines or programs. The statute itself should include only basic authorities and provisions that are unlikely to change over time. Specific requirements

that may need to change from time to time are best left to adoption by regulation - which action should be specifically authorized in the enabling statute. *Exhibit 9* sets forth a range of potential MI regulatory features, indicating which ones, in the author’s view, are better suited for statute or regulation respectively.

### Conclusion and outlook

The current worldwide banking and financial meltdown can be traced to an unprecedented volume of reckless home mortgage lending, enabled by the “financial engineering” of opaque mortgage-backed paper sold into global markets with the support of the investment rating agencies. The most egregious excesses and flaws, ironically, emanated from markets and market players that - until only recently - other developing markets were seeking to emulate.

The full story of this debacle has yet to unfold. To date there have been innumerable failures, large and small, along the entire chain of mortgage finance players - brokers, mortgage bankers, banks, investment bankers, Fannie Mae and Freddie Mac, hedge funds . . . and their respective regulators.

While it remains to be seen how mortgage default insurers will ultimately perform, their remarkable - yet surprisingly unremarked - performance stands out as of early 2009. Amidst all the other market player failures and “bailouts”, mortgage insurers have continued to pay record levels of claims and losses from their accumulated reserves. Part of this staying power to date is attributable to the fact that MI providers generally “dodged the bullet” by not underwriting any significant volume of “subprime” loans. But considerable credit must also be given to the tough body of special MI regulation - both public and private - that was put in place following previous stress periods.

Unregulated and under-reserved “financially engineered” credit enhancements, by contrast, have proven to be a poor substitute for strongly regulated, transparently reserved public and private mortgage default insurance.

# Addressing Financial System Pro-Cyclicality: A Role for Private Mortgage Insurance

↳ J. Robert Joyce and Michael F. Molesky<sup>1</sup>

## I. Overview

The roots of today's financial turmoil are well known – a failure to regulate financial markets effectively, misaligned incentives inherent in the “originate to distribute” model, a lack of transparency involving untested mortgage and complex financial products, as well as other larger macro-economic forces, such as loose monetary policy and untenable access to credit.

The Basel II Revised Framework (“Basel II”), finalized only five years ago, is also coming under scrutiny. Policy makers are raising important questions as to its ability to protect against future systemic failures. In response, the Basel Committee on Banking Supervision, an international organization that provides a forum for regular cooperation on banking supervisory matters between its member countries, has issued a series of proposed reforms to Basel II. National regulators will consider these reforms and determine whether to incorporate them into their respective banking regimes.

One concern with Basel II expressed by commentators is that it could exacerbate pro-cyclicality, or the tendency of banks to fuel unsustainable economic growth during good times, while freezing access to credit during bad times, thus deepening the severity of recessions.<sup>2</sup> This paper addresses the pro-cyclicality concern from the perspective of residential mortgage risk – of critical importance because residential mortgages and related securities played a central role in fuelling the current crisis and continue to comprise a large percentage of bank portfolios. In particular, pro-cyclicality and the perverse incentives it generates can contribute to imprudent and unsustainable lending practices.

First, the paper recommends and briefly reviews two reforms to the Basel II rules that will help to dampen their pro-cyclical effects on residential housing lending. Second, the paper proposes a broader policy response and specifically looks at the private mortgage insurance (“MI”) sector, its history, regulation, and how it has performed during the current crisis. We focus on the MI sector, particularly in the USA and Canada, because it presents a revealing case study on how to potentially help contain the pro-cyclical effects of Basel II as they relate to high Loan-to-Value (“LTV”) residential mortgage lending while promoting sustainable home ownership.

Private mortgage insurers have made mis-steps during the expansion and collapse of this most recent housing bubble in the USA, and they have not escaped financial harm. Nevertheless, because of sound regulation developed for the mortgage insurance sector, based upon “lessons learned” from as far back as the Great Depression era and expertise cultivated by managing high LTV housing risk through various economic cycles, private mortgage insurers continue to pay claims reliably during today's financial crisis. While their share of the market has shrunk considerably, with the USA Government's Federal Housing Administration (FHA) mortgage insurance program assuming a larger role in 2008, private mortgage insurers continue to make credit accessible for first time home owners and others in the USA who do not have a significant down payment.

Private mortgage insurers can help to curb pro-cyclicality, as they have a strong commercial incentive to check high-risk lending at the top of an economic cycle and to continue to write new business at its bottom. As private mortgage insurers assume a first loss position

and keep long-term risk on their books, they are motivated to ensure that lenders pursue a disciplined approach with regard to validating the accuracy of loan documentation and assessing the ability of a borrower to repay a loan. In addition, private mortgage insurers are subject to robust capital and reserving requirements, which permit them to act as “shock absorbers” or “capital buffers” to support lending institutions during economic downturns.

A return to sound regulation in the USA should strongly encourage, even mandate, the use of mortgage insurance, whether offered by private mortgage insurers or the FHA, for all high LTV residential mortgage loans.<sup>3</sup> One model to consider – for the USA as well as other nations – is a public-private partnership in which private mortgage insurers take a first loss position, with a government guarantee available to cover truly catastrophic scenarios. Private mortgage insurers would pay a fee for this guarantee, which would accumulate in a special reserve administered by the government through the economic cycle and be available only in the event of severe economic downturns. In order to protect taxpayer funds, private mortgage insurers would be subject to strong oversight and robust capital and reserving requirements, as well as independent actuarial reviews to ensure they could withstand periods of economic stress. This partnership would result in an effective allocation of resources and roles by harnessing private capital to stand in a first loss position, with a government guarantee instilling greater confidence and stability in the system. Policy makers should look closely at the Canadian housing finance system, one of the most stable and accessible in the world, in which federal banking law mandates mortgage insurance for all high LTV loans, and the government provides a catastrophic gua-

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<sup>2</sup> See, for example, “Cyclical Implications of the Basel II Capital Standards”, Anil Kahyap and Jeremy C. Stein, 1Q/2004, Economic Perspectives.

<sup>3</sup> High LTV loans are generally considered to be loans with LTVs of 80% or above at the time of origination.

rantee that covers policies issued by private mortgage insurers.

## II. Reforms to the Basel II Framework

The Basel Committee issued a number of proposals in January 2009 aimed at fortifying bank capital requirements relating to the risks inherent to trading activities, securitizations and exposures to off-balance sheet vehicles. More focused reforms specifically addressing the capital treatment of residential mortgages are also needed.

### A. Set Capital Requirements to Reflect Long-Term Risk

The current Basel II Internal Risk Based (IRB) rules – adopted by many of the world's largest and most systemically important banks – encourage lending institutions to lower the amount of capital they hold during upswings in the economic cycle, forcing them to raise capital during downturns. Absent some constraint, this shortcoming contributes to risky and unsustainable lending during economic booms, followed by an almost inevitable credit crunch as defaults and capital requirements increase. Basel II encourages pro-cyclicality in residential mortgage lending in two fundamental ways.

First, the rules encourage banks to periodically revalue the underlying collateral. Under the IRB rules, banks calculate the Probability of Default (PDs), or frequency of default, and Loss Given Default (LGDs), or severity of loss upon default, for different loan types, which are then used in part to set their minimum capital requirements. During periods of economic growth, home prices tend to rise, at times resulting in a marked drop in the “current” LTV of the mortgage loans held in a bank's portfolio. The reduced LTV ratio, in turn, permits banks to re-classify those residential loans into lower LTV groups, with lower PDs and LGDs. Thus, revaluations carried out during economic expansions can often result in banks holding less capital for residential mortgage loans. The reverse is also true. When

home prices decline, revaluations result in re-classification of residential mortgage loans into higher LTV groups, with higher PDs and LGDs, raising minimum capital standards for banks.

To avoid the volatility this revaluation produces, the Basel II rules should be amended to require banks to calculate capital requirements for residential mortgage loans based upon the value of the property at origination, without consideration of any subsequent rise or decline in home price appreciation. At least in developed markets, prolonged periods of unusually high home price appreciation are almost always followed by sharp declines. Permitting banks to re-classify residential mortgage loans into lower LTV groups based on rising home price appreciation during economic expansions leaves banks under-capitalized once the expansion ends and new capital is growing scarce.

Second, the rules permit banks to utilize a “Point in Time” (PIT) approach in estimating PDs and LGDs. The PIT approach captures the risk of default under “current” economic conditions as well as by age of the loan. When utilizing the PIT approach, banks typically segment their mortgage portfolios by age of loan, with new loans assigned low PDs and LGDs because of the relatively low risk of default during the initial years following origination.<sup>4</sup> This results in banks holding little capital for new loans during an expansion, leaving them vulnerable and under-capitalized when loans mature and reach their peak risk years.<sup>5</sup> In addition, by assigning PDs consistent with “current” rather than “long-run averages”, the PDs (and therefore the capital required) are lower during expansions and higher under deteriorating economic conditions.

Rather, banks should be required to employ a “Through-the-Cycle” (TTC) approach. The TTC approach requires banks to consider long-run averages of default experience through the economic cycle and to set their capital requirements accordingly. The United Kingdom's Financial Services Authority (FSA) recently acknowledged the shortcomings of the PIT approach, citing it as one reason for the inadequate capital held

by banks, while recognizing the counter-cyclical contributions of the TTC approach.

One additional weakness in the system, even for those banks that currently utilize a TTC approach, is the practice of many banks to rely upon insufficient historical data in calculating the risk of default. Regulators should strongly urge banks to draw upon adequate historical data in designing their models and setting capital requirements, and, if they lack such data, to base their calculations on data provided by credible third parties.

### B. Require Higher Capital Charge for Non-Standard Loans

Another warranted reform is to require banks to hold higher amounts of capital for Non-Standard loans, or any loan types that are new, untested, or do not otherwise meet traditional underwriting or other lending standards. Such Non-Standard loans tend to perform significantly worse than Standard loans during periods of economic stress. Requiring additional capital for Non-Standard loans would more accurately align capital with actual risk. Requiring higher capital charges for new and untested loans that fail to meet traditional underwriting standards would also increase transparency for borrowers and investors. Australia, as one example, requires lenders to hold a higher amount of capital for Non-Standard residential mortgage loans.<sup>6</sup>

A recent paper prepared by Christopher L. Foote, Kristopher Gerardi, and Paul S. Willen of the Federal Reserve, “*Making Sense of the Subprime Crisis*”, focusing on the USA market, illustrates why new and untested mortgage products that fail to meet traditional underwriting standards should be subject to higher capital charges.<sup>7</sup> The authors demonstrate that subprime loans originated in the USA between 2001 and 2006 were of a substantially different profile than those originated prior to 2001. Subprime loans by their very nature are loans that carry a different risk profile from prime loans. But the paper reveals that more recent subprime loans which lacked adequate underwriting, known as “low doc” loans, performed much

<sup>4</sup> Default risk for residential mortgage loans is typically very low in the initial years of the loan, gradually rising until the risk peaks (usually in the 4th or 5th year).

<sup>5</sup> This approach also greatly facilitates the “originate-to-distribute” model by lowering the cost of capital while the bank accumulates sufficiently large pools of loans to securitize. The major risk of combining the PIT approach with lenders substantially engaged in securitization is a collapse of the private label RMBS market. Such a collapse would require gradually increasing amounts of capital for those lenders stuck with unsold inventories of loans.

<sup>6</sup> The Australian Prudential Regulation Authority (APRA) defines a Standard residential mortgage loan as a loan which the lender has adhered to the following requirements: (a) prior to loan approval and as part of the loan origination and approval process, documented, assessed and verified the ability of the borrowers to meet their repayment obligation; (b) valued any residential property offered as security; and (c) established that any property offered as security for the loan is readily marketable. Loans that are secured by residential properties but fail to meet the above criteria must be classified as non-standard eligible mortgages. See, APS 112 Capital Adequacy: Standardized Approach to Credit Risk. USA regulations also define “Prudently” underwritten real estate loans as loan originations that reflect all relevant credit factors, including: (a) capacity of the borrower, or income from the underlying property, to adequately service the debt; (b) value of the mortgaged property; (c) overall creditworthiness of the borrower; (d) level of equity invested in the property; (e) any secondary sources of repayment; and (f) any additional collateral or credit enhancements (such as guarantees, mortgage insurance or takeout commitments). Loans that are not Prudently underwritten receive a higher capital charge under US Basel I rules. See, 12 CFR part 34, subpart D (OCC).

<sup>7</sup> Making Sense of Subprime Crisis”, By Krisopher S. Gerardi, Andreas Lehnert, Shane M. Sherland, and Paul S. Willen. December 2008.

differently than traditional subprime loans. High LTV subprime loans accounted for roughly 10% of originations in 2000, rising to over 50% by 2006. Loans with incomplete documentation and high leverage had an especially notable rise, increasing from essentially zero in 2001 to almost 20% of subprime originations by the end of 2006, and performed much worse than traditional subprime loans.

The marked increase of these “low doc” high LTV subprime loans went largely unnoticed by most market participants, according to the authors. Moreover, the lack of any historical data upon which to project likely default rates of such new and untested loan products made it more difficult to accurately analyze the sensitivity of the loans to changes in the economic environment (e.g. declining home prices). Even under the Basel II IRB rules, therefore, which call for banks to calculate the risks associated with particular loan types and to adjust their capital requirements accordingly, banks cannot accurately ascertain risk levels given the lack of historical data available for such new and untested products.

Regulators at the national level could develop appropriate criteria to establish the basis for classifying a loan as Standard or Non-Standard. For illustrative purposes, the following indicators could serve as a starting point:

- Full verification and documentation of all aspects of the underwriting criteria;
- Adequate credit, as measured by credit report and accompanying credit scores;
- Adequate capacity, as measured by employment information and debt ratios (stressing for potential increases in interest rate);
- Adequate collateral, as measured by down payment and property valuation; and
- Loan products that positively amortize fully over a reasonable time with minimal payment shock potential.

Loans that fail to satisfy these basic standards should receive a higher capital charge given their riskier nature. Lenders should be permitted to reduce the capital charge only with some form of qualified credit enhancement, such as mortgage insurance.

### III. A Counter-Cyclical Role for Private Mortgage Insurance

Beyond technical reforms, a broader policy response is needed to curb pro-cyclicality in the financial system. Mortgage insurance – which is well regulated, promotes a rational alignment of incentives among borrowers, lenders and investors, and is fully transparent – can help to achieve this objective with regard to residential mortgage lending. Before turning to mortgage insurance’s counter-cyclical role, we address its role, history and regulation, which developed as a result of “lessons learned” from the Great Depression era, when the USA last experienced a nationwide housing meltdown.

#### A. Role of Mortgage Insurance

Mortgage insurance expands access to homeownership and promotes financial stability by transferring risk outside the lending sector to companies that are highly specialized in managing high LTV mortgage risk. Mortgage insurance enables lenders to accept lower down payment loans without taking on additional default risk, which in turn stimulates availability of mortgage products to a larger segment of the population and beyond only those that have accumulated a significant down payment.<sup>8</sup> During economic downturns, when foreclosures tend to increase, mortgage insurance helps to restore equilibrium between supply and demand by enabling first time home owners to enter the market. Mortgage insurance has played a vital role in helping housing finance markets to thrive in a wide range of countries, including, among others, Australia, Canada, Mexico, Hong Kong, Israel, New Zealand, Ireland, Italy, the United Kingdom and the USA.

Mortgage insurance is a fully transparent product with regard to which party holds the risk in the event of borrower default. In stark contrast to credit default swaps, subsequent purchasers of mortgages can easily identify the issuer of the insurance policy when the claim is payable. In addition, mortgage insurers, consistent with their own economic self-interest, actively work with lenders and, where appropriate, directly with borrowers to reduce losses through “workouts” and modifications. In the USA, private mortgage insurers helped nearly fifty

thousand individuals and families to stay in their homes during 2008.

#### B. Historical Development

Private mortgage insurance has existed in one form or another for nearly one hundred years, first emerging in the USA during the early 1900s. The industry expanded rapidly during the 1920s and, by 1930, over fifty companies, most domiciled in the State of New York, offered a mortgage insurance product. However, the collapse in real estate prices during the Great Depression led to the rapid failure of the mortgage insurance industry. In fact, by January 1, 1933, virtually every company which offered mortgage insurance had entered into rehabilitation or liquidation proceedings.

Regulators studied the lessons of this early failure of the private mortgage insurance industry, concluding that inadequate regulation, questionable capital adequacy levels and conflicts of interest between mortgage insurers and their parent firms, combined with a lack of understanding about the strong correlation between macro-economic trends and mortgage risk, all set the stage for the industry’s failure.<sup>9</sup> In response, George Alger, Insurance Commissioner of New York, developed a study, known in the mortgage insurance industry as the “Alger Report”, on the management and affairs of the mortgage insurance industry during this period.

The Alger Report reviewed the operation of the mortgage insurance industry, its attempts at rehabilitation and causes of the insolvencies, and presented recommendations for a regulatory framework to be considered in the event a private mortgage insurance industry re-emerged. In developing recommendations, the Alger Report recognized the unique nature of mortgage insurance as an insurance product because of the “catastrophic” and “cyclical” nature of residential mortgage risk – “catastrophic” because of a strong correlation between regional/national economic downturns and a rapid spike in mortgage defaults, and “cyclical” because of the historical boom-bust nature of the housing market.

It took over twenty years for a private mortgage insurance sector to re-emerge in the USA. Meanwhile, the USA Government established the FHA in the mid-1930s, with its mortgage

<sup>8</sup> MI provides protection to mortgage lenders in the event a borrower defaults on a mortgage loan. After a default has occurred and the lender has repossessed and liquidated the mortgaged property, there will often be a shortfall between the outstanding amount of the loan (plus unpaid interest and expenses associated with the sale) and the sale proceeds realized from the repossessed property. If such a shortfall exists, the mortgage insurer will pay an amount equal to the shortfall to the lender, subject to the limits of coverage set forth in the insurance policy. In this manner, mortgage insurance either eliminates or greatly reduces the loss suffered by the lender in the event of a default on an insured mortgage loan.

<sup>9</sup> Indeed, the experience of New York State as the primary headquarters for mortgage insurers was so dramatic that the sale of MI within New York remained illegal until 1973.



insurance program playing a key role in allowing the housing system to recover from the wave of defaults and foreclosures that had occurred during the Great Depression. Private mortgage insurers re-appeared during the late 1950s. Since then, the private mortgage insurance industry in the USA has proved resilient and weathered periods of home price decline and broader economic downturns. During the 1980s and 1990s, the private mortgage insurance industry paid roughly \$15 billion in claims to its policyholders.<sup>10</sup>

Mortgage insurance began developing internationally around the same time as the re-emergence of the private industry in the USA, with the government-owned Canadian Mortgage Housing Corporation (CHMC) introducing mortgage insurance in 1954. A decade later, the Commonwealth Government in Australia established the Housing Loan Insurance Corporation (HLIC) to provide a Government-backed housing loan insurance scheme. Today, public and/or private mortgage insurance programs exist in dozens of nations around the world.

### C. Regulation of Mortgage Insurance: A Proven Model

A regulatory framework for private mortgage insurers with built-in safeguards has enabled the industry in the USA to survive previous stress periods and even in today's crisis environment private mortgage insurers, while facing unprecedented losses, continue to pay claims. The Alger Report had a strong influence on the development of regulations governing private mortgage insurance. Today, many USA states and increasingly other nations, have adopted regulatory frameworks for private mortgage insurance, which reflect many of the recommendations contained in the Alger Report and generally include the following elements:<sup>11</sup>

■ **Robust Capital and Contingency Reserve Requirements** – Mortgage insurers are required to hold a robust level of capital compared to most other insurance lines because a combination of rising unemployment and falling home prices have the potential to inflict losses on mortgage insurers that are many times greater than normal long-run expected losses. Regulations in the USA and several other nations, such as Mexico, require mortgage insurers to establish a special contingency reserve composed of 50% of the mortgage insurers' annual earned premiums. The contingency reserve forces mortgage insurers to build-up a buffer to cover expected

losses from the time a loan is first insured. The reserve continues to grow during years in which expected losses are lower than anticipated, while in years in which losses exceed what is expected the reserve is available to cover those unexpected losses. Each year's contribution must be maintained for one decade (twelve years in Mexico) and is thereafter released. Prior to the end of the ten years, mortgage insurers may draw upon these reserves only if their loss ratio in a particular year exceeds 35%.

■ **Monoline Restriction** – Insurance companies that offer mortgage insurance are typically prohibited from offering other lines of insurance, requiring them to segregate capital to pay only mortgage insurance claims. The rationale for this requirement is twofold: first, a severe wave of mortgage defaults could bankrupt multi-line insurers, threatening the policyholders of all the firm's lines of business; and second, experience in the USA and elsewhere has demonstrated that multi-line companies offering mortgage insurance as one among many product lines lack the requisite expertise and long-term commitment to properly serve high LTV residential mortgage risk, ultimately weakening financial markets and undermining the value of the mortgage insurance product.

■ **Prohibition on Affiliated Transaction** – While this requirement is not universal, many jurisdictions prohibit mortgage insurance transactions between affiliated entities, whereby a lender insures residential mortgage loans which it originates through an insurance company within its holding company. Restrictions on affiliated transactions are needed because such transactions lack any true third party risk transfer. At a minimum, lenders should not receive any capital benefit when using an affiliated insurance company to insure residential mortgage loans.

■ **Prohibition on Real Estate Investments** – Mortgage insurers are typically subject to strict limits with regard to investing in real estate or mortgages in order to minimize correlated risk. Because a mortgage insurer is already subject to the risk of falling real estate values through the coverage it provides, additional exposure to mortgage assets would further weaken its solvency and ability to pay claims.

Global experience over the past few decades also demonstrates that a sustainable private

mortgage insurance market will only develop where regulators limit opportunities for adverse selection, which typically entails originating lenders choosing, on a loan-by-loan or other selective basis, to submit for mortgage insurance coverage only its weaker or marginal applications. The lender will often decline to make such loans themselves if the mortgage insurance provider declines to insure. This practice, if permitted, serves to defeat the mortgage insurer's reliance upon "the law of large numbers" to sustain its continuing viability and to charge affordable premium rates. When adverse selection is avoided, the mortgage insurer is able to classify and group its business risks, while populating each risk group with large enough numbers to apply actuarial principles, spread the risk and price each risk group both reliably and at the most affordable possible rates.

Canada, as one example, requires mortgage insurance on all loans with 80% LTV ratios or higher. The USA has an indirect requirement stemming from the Congressional charters that created Fannie Mae and Freddie Mac, known as the Government Sponsored Enterprises, or GSEs, which presently finance more than 70 percent of the USA mortgage market. The GSE federal charters mandate that both GSEs require mortgage insurance (or other accepted forms of credit enhancement) on loans that exceed 80% LTV. An alternative approach adopted by some regulators is via properly designed financial incentives for banks and other regulated lenders, e.g. risk-based capital relief, when utilizing adequate mortgage insurance coverage offered by qualified mortgage insurers, which is typically achieved through a country's Basel I or Basel II rules.

### D. Private Mortgage Insurance and Sub-Prime Turmoil in the USA

As the housing boom in the USA accelerated, with a breakdown in risk management practices and expectations of perpetually rising home price appreciation, lenders looked for ways to avoid the cost and discipline imposed by mortgage insurance. In fact, shortcomings in the regulation of mortgage lending disadvantaged mortgage insurance during the height of the housing boom in the USA. Regulations facilitated and in some cases encouraged the use of credit risk transfer mechanisms that lacked any reliable third party check (e.g. securitization of mortgages), provided minimal transparency (e.g. credit default swaps) or which gave lenders an opening to profit from capital arbitrage (e.g. second liens or "piggy back" loans). These mechanisms eroded market

<sup>10</sup> Mortgage Insurance Companies of America (MICA) Fact Book 2008-2009, page 13.

<sup>11</sup> In the USA, individual states rather than the federal government regulate the insurance industry. In Canada, provinces regulate consumer protection aspects of the insurance industry, while the federal government regulates prudential standards.

share for public and private mortgage insurance and served as enablers for the explosion in sub-prime and other unsustainable lending practices that fuelled the housing boom and ultimately caused its collapse.

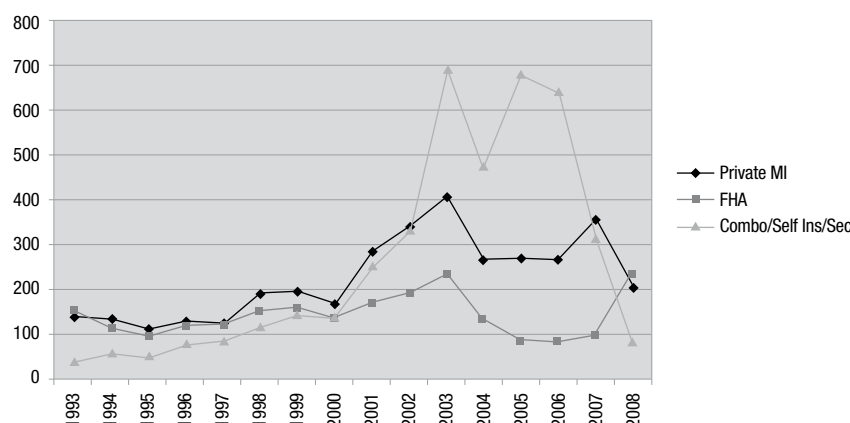
A paper entitled *Lessons from the Sub-Prime Crisis for Emerging Markets*, prepared by Britt Gwinner of the World Bank, describes the erosion of market share for mortgage insurers in the USA that accompanied growing prevalence of these alternatives in the market. In the paper, Britt Gwinner states:

*“Traditional MI provided a third party quality control of the credit underwriting process. Lenders and investment banks bypassed this role by using simultaneous second liens at origination, by structuring the securitization with deeper subordination and by purchasing credit enhancements from monoline insurers. But these substitutes included no third party review of the loan documents.”<sup>12</sup>*

As noted above, Fannie Mae and Freddie Mac (the GSEs) are only permitted to purchase residential mortgage loans with LTVs of 80% or higher if such loans have appropriate forms of credit enhancement. Traditionally, the GSEs have required lenders to obtain mortgage insurance on above 80% LTV loans in order to satisfy this credit enhancement requirement. With “piggy back” loans, lenders avoided this need for credit enhancement by structuring loans into first (80% LTV) and second (5% - 20% LTV) liens. The GSEs did not take into consideration this combined LTV of “piggy back” mortgages when purchasing first or second liens or mortgage backed securities issued by others that included high-LTV mortgages.

In fact, the GSEs purchased “piggy back” loans without mortgage insurance notwithstanding that a loan with a combined LTV over 80% performs both in terms of frequency of default and severity of default like a single lien with an initial LTV over 80%. In other words, a piggy back 80/20 loan performs akin to a single lien with a 100% initial LTV. The fact that a GSE is holding only the first lien with a putative 80% LTV does not change the fact that the borrower’s initial equity in the loan was only equivalent to that of, in this example, a 100% initial LTV single lien. The same holds true for 80/10 and 80/15 piggy back liens. The risk to the GSEs of these piggy

## US High LTV Loan Originations By Type



back loans is the same risk as associated with uninsured single liens of 90%, 95% or 100% initial LTVs.<sup>13</sup>

The GSEs also became large purchasers of sub-prime and other risky RMBS from the secondary markets, deepening their exposure to questionable mortgage assets. As a result, their viability as a guarantor of last resort for residential mortgage loans was placed into doubt when the RMBS market collapsed, leading the USA government to place the GSEs under conservatorship.

The Mortgage Insurance Companies of America (MICA), the USA trade association of mortgage insurers, urged federal regulators in the USA repeatedly in 2005 and 2006 to take actions to stem the rapid expansion of “piggy back”, sub-prime and other forms of non-traditional lending. In a letter submitted to federal regulators on September 23, 2005, MICA noted it was “deeply concerned about increased mortgage-market fragility which, combined with growing bank portfolios in high risk products, poses serious potential problems that could occur with dramatic suddenness.”<sup>14</sup> Similarly, MICA submitted a letter to federal regulators on March 29, 2006 warning of the urgency “needed to address growing risks in an asset category that have increased to alarming proportions in an unprecedented period of time.”<sup>15</sup> While mortgage industry trade groups criticized these warnings at the time as an overreaction, MICA members recognized the inherent danger posed by poorly underwritten or unsuitable mortgages to consumers, lenders and investors.

Though mortgage insurers at no time considered sub-prime and non-traditional markets to

be the mainstay of their business, competitive pressures drove some mortgage insurers to take on excessive risk from these markets. As a result, the USA mortgage insurance industry is being negatively impacted by the sub-prime collapse as well as spillover into the high LTV prime markets. One private mortgage insurer in the USA has entered into “run off” (e.g. no longer writing new business) because of capital constraints and several others may face uncertain futures depending upon the length and severity of the recession. Nevertheless, mortgage insurers are fulfilling their role as capital buffers for lending institutions during economic downturns.

## IV. A Constructive Role for Private Mortgage Insurance

While private mortgage insurers have played a reliable role in protecting lenders against borrower default over the past half century, improvements to the USA and other international private mortgage insurance frameworks may be warranted to further strengthen the system. One concept is to establish a public-private partnership in which private mortgage insurers take a first loss position with a public guarantee standing behind the private insurers in the event of “catastrophic” economic scenarios.

### A. Systemic Benefits of a Public “Catastrophic” Guarantee

The public “catastrophic” guarantee would reinforce the already important counter-cyclical role played by private mortgage insurers. This structure would create a new “dynamic provisioning” mechanism, in addition to the

<sup>12</sup> Britt Gwinner, *Lessons from the Sub-Prime Crisis for Emerging Markets*, World Bank, May 2008.

<sup>13</sup> Letter to David Felt, Acting General Counsel, from Suzanne Hutchinson, Executive Vice President, MICA, dated November 7, 2005 commenting on OFHEO request for comments for areas to be addressed in a new round of rulemaking relating to the GSEs.

<sup>14</sup> MICA Comment Letter to Federal Reserve Board, September 23, 2005.

<sup>15</sup> MICA Comment Letter to Office of Comptroller of the Currency, March 29, 2006.

existing contingency reserves held by private mortgage insurers, designed specifically to set aside funds during good times to prepare for “catastrophic” economic scenarios. Fees paid by private mortgage insurers for the public “catastrophic” guarantee would be maintained by the federal government in a special reserve (administered by the government) available to pay claims only in those circumstances where there is a severe national or even global recession.<sup>16</sup> The partnership would have a number of important attributes that would benefit a housing finance system throughout the economic cycle:

- First, it would facilitate an effective allocation of private and public sector roles and responsibilities, with private sector capital, subject to sound regulation, harnessed to cover a significant first loss position. The economic damage brought about by imprudent and reckless lending during the housing boom in the USA is likely to be felt for years to come. Increased direct or indirect government backing for primary and secondary mortgage markets, in the USA and likely in many other markets, is probably inevitable for the foreseeable future. The public “catastrophic” guarantee for private mortgage insurers is a workable and effective public policy response, and would instill greater confidence and stability in the lending system while preserving a role for the private sector and the greater efficiencies it can bring to the market.
- Second, it would enhance the ability of private mortgage insurers to facilitate access to credit for a greater number of borrowers, including first time home owners, throughout the economic cycle. Without a public “catastrophic” guarantee, mortgage insurers can be restricted from playing this important role during deep recessionary periods because they may be forced to limit new business or significantly tighten their underwriting standards due to capital constraints. This further exacerbates the reluctance of lenders to provide access to mortgage credit during those economic periods when it is most needed from a macro-economic perspective.
- Third, the public guarantee could establish prudent and sustainable lending practices, helping to reduce volatility and smooth eco-

nomical cycles. Private mortgage insurers and the government could agree upon the types of residential mortgage loans covered by the public “catastrophic” guarantee. For example, the guarantee could cover only “fully documented” or Standard loans, as discussed earlier in this paper. Loans not covered by the guarantee would be subject to higher capital requirements, making them significantly more expensive and less prevalent in the market.

The concept of “dynamic provisioning” or putting aside funds during good times to prepare for downturns, akin to the contingency requirements adhered to by private mortgage insurers in the USA, has attracted significant interest as an effective counter-cyclical tool. Notably, a recent paper authored by Anil K. Kashyap, Raghuram G. Rajan, and Jeremy C. Stein, prepared for a symposium held by the Federal Reserve Bank of Kansas City in August 2008, proposes an interesting concept.<sup>17</sup> The paper proposes a regime under which banks could opt between higher capital requirements (e.g. 10% rather than 8%) or acquiring a form of “capital insurance” which would pay out upon the occurrence of a defined systemic “event”. Such a “capital insurance” regime would permit the transfer of more capital onto the balance sheets of banks when aggregate bank capital is, “from a social point of view, particularly scarce”. The insurance provider would be required to place a certain amount of Treasuries into a custodial account; if there is no “event”, the insurer would receive the insurance premium from the bank as well as the interest paid by the Treasuries. One rationale behind this regime, as recognized by the authors, is to minimize the social impact of poor governance at banking institutions.

Another option raised by the authors would simply be to require banks to hold more capital on high LTV residential mortgage loans during good times, but allow them to draw upon and lower their capital requirements during bad times.<sup>18</sup> For example, banks might be required to hold 10% of risk-weighted assets during economic upswings, but only 8% during downturns. The current Basel II rules do not adequately address this need to adjust capital requirements to meet the different needs of banks and the broader economy during distinct periods of the economic cycle. But the

authors point out that requiring banks to hold such high capital requirements increases risks associated with poor governance and mismanagement, and that an insurance approach may be more efficient:

*In the case of a homeowner who faces a small probability of a storm that can cause \$500,000 of damage, the most efficient solution is not for the homeowner to keep \$500,000 in a cookie jar as an unconditional buffer stock – especially if, in a crude form of internal agency, the cookie jar is sometimes raided by the homeowner’s out-of-control children. Rather, the better approach is for the homeowner to buy an insurance policy that pays off only in the contingency when it is needed... Similarly, for a bank, it may be more efficient to arrange for a contingent capital infusion in the event of a crisis, rather than keep permanent idle (and hence agency prone) capital sitting on the balance sheet.<sup>19</sup>*

Private mortgage insurance can effectively serve the role of this insurance policy for high LTV residential mortgage loans. Mortgage insurers are well suited to play this role from a broader systemic perspective because of their expertise managing high LTV residential mortgage risk and their clear incentive to curtail weak underwriting and other lending practices, given that they typically take a first loss position. Mortgage insurers also have a long-term view of residential mortgage risk, as well as a powerful incentive to ensure that premiums are set at an economically viable level to reflect long-term loss expectations. Finally, mortgage insurers build a reliable third party capital base which enables them to serve as critical “shock absorbers” or “capital buffers” to support banks’ losses during recessionary periods.

The specialized regulations that private mortgage insurers are subject to provide further protection to the financial system. The monoline requirement ensures that only entities that are committed to this line of business provide mortgage insurance. Experience in some markets, such as the UK during the late 1980s, demonstrates that absent this monoline requirement

<sup>16</sup> The fee would be structured into two parts: a “guarantee fee” and a “long-term catastrophic contingency reserve.” Private mortgage insurers could be eligible to recoup a portion of the long-term contingency reserve in the event the government guarantee is not triggered during some defined period of time. As opposed to the normal ten year requirement before mortgage insurers can recoup a portion of contingency reserves, they might be restricted from doing so with respect to the catastrophic reserve for a longer period of time under specified conditions. The “guarantee fee” would be kept by the government as a charge for the program.

<sup>17</sup> Anil K. Kashyap, Raghuram G. Rajan, and Jeremy C. Stein. *Rethinking Capital Regulation*. Paper prepared for Federal Reserve Bank of Kansas City symposium on “Maintaining Stability in a Changing Financial System” held in August 2008.

<sup>18</sup> The Bank of Spain requires banks under its jurisdiction to adhere to such “dynamic provisioning” requirements, forcing them to hold higher levels of capital on assets they hold during upturns in the economic cycle.

<sup>19</sup> Anil K. Kashyap, Raghuram G. Rajan, and Jeremy C. Stein. *Rethinking Capital Regulation*. August 2008.



multi-line insurers may offer mortgage insurance as an inducement to lenders to purchase other insurance products. Such a commercial incentive can easily lead a multi-line mortgage insurance provider to under-price the risk, with only a short-term outlook, and thus leave the financial system vulnerable during economic downturns.<sup>20</sup> As noted earlier, private mortgage insurers are also subject to robust capital and, in a number of markets, special contingency reserve requirements. Supplying this capital base outside of the banking system, which can be drawn upon by banks during stress events, brings added stability to the financial system. Finally, private mortgage insurers are subject to strict limitations on their investments in real estate, thus protecting their investment portfolios against excessive correlation. Indeed, mortgage insurers hold the majority of their investments in government securities, which are especially liquid during stress events when there is a flight to safety, ensuring that mortgage insurers have funding to pay claims.

A legitimate concern with this structure is how to address a potential “moral hazard” problem of the government standing behind a private insurer with such a guarantee. To some extent, this concern would be allayed by the remote position of the guarantee, with private insurers paying claims up to a severe loss ratio, for example. Also, private insurers should be subject to strong oversight and robust capital and reserving requirements, as well as independent actuarial reviews to ensure they can withstand periods of economic stress. In the event the government guarantee is triggered, shareholders should be forced to bear a significant cost before the government pays losses beyond the premium paid into the reserve. In addition, subject to well-defined standards, the government should have the option of forcing into run-off or liquidating a private insurer if it determines that the catastrophic losses which triggered the guarantee resulted more from poor risk management, for example, than a deterioration in macro-economic conditions beyond the control of the insurer.

### B. The Canadian Model

As an example of a working public-private mortgage insurance system, policy makers should look closely at the Canadian housing finance

system, one of the most stable and accessible in the world, in which federal banking law mandates mortgage insurance for all high LTV loans, and the government provides a catastrophic guarantee that covers policies issued by private mortgage insurers. As a result, the Canadian market delivers both low-cost mortgage finance and high levels of homeownership, as well as other important social benefits: equitable access to mortgage financing for potential homebuyers throughout Canada, in both rural and urban areas; first time ownership for Canadian homebuyers on the margin; and protection for the financial system throughout the economic cycle. The mandatory requirement for mortgage insurance has supported the rapid growth of securitization through the Canada Mortgage Bond program.<sup>21</sup>

The Canadian government stands behind private mortgage insurers with a “catastrophic” guarantee that ensures claims are paid in the event a private mortgage insurer becomes insolvent. Similar to the model this paper proposes, private mortgage insurers pay a fee, used to establish reserves, in order to benefit from the guarantee. From a public policy perspective, the guarantee enables private sector participation in the market, promoting competition and efficiencies in the offering of mortgage insurance that ultimately benefit consumers. Absent a guarantee for private mortgage insurers, the Canadian Mortgage and Housing Corporation (CHMH), a government-owned entity, would dominate the market. Also, the sovereign guarantee brings stability to Canada’s broader financial system by minimizing the risk of non-payment of claims in the event of widespread borrower defaults.

The Canadian government also uses the guarantee to help set lending standards by excluding certain types of loans from coverage under the guarantee. Most recently, the Department of Finance announced that as of October 15, 2008, the guarantee would be limited to covering loans with a maximum amortization of 35 years (reduced from 40 years); a minimum 5% down payment; a credit score floor of 600; and minimum loan documentation standards “to ensure that there is evidence of reasonableness of property value and of the borrower’s sources and level of income”. The Department of

Finance called the revisions necessary “to ensure Canada’s housing market remains strong and to reduce the risk of a USA-style housing bubble developing in Canada”.

Canada’s financial system has fared relatively well throughout this global crisis, in large part due to conservative regulation and prudent risk management. To a greater degree than the USA or most other advanced economies, banks have continued to extend credit, though on tightened terms. The mandatory requirement for mortgage insurance and the government guarantee which supports private sector participation is one reason for this development. Bank of Canada Governor Mark Carney stated recently that Canada would avoid a USA-style mortgage crisis because most of the home loans issued in Canada are backed by the government, referring to the guarantee as a “circuit breaker” to protect lenders against widespread default.<sup>22</sup>

While the Canadian system has, so far, worked quite well, it has several shortcomings. First, the guarantee covers the liabilities of private mortgage insurers only after they become insolvent. During economic downturns, public policy should aim to make credit accessible, especially to first time home buyers. Private mortgage insurers play this role effectively, helping to stimulate demand in the housing market. Yet, by paying claims only after insolvency, the guarantee potentially precludes private mortgage insurers from playing this role when it is most needed, during periods of severe economic strain. Another shortcoming is that Canada lacks adequate safeguards to protect consumers. Unlike the USA, Canadian law does not prohibit mortgage insurers from paying commissions or rebates to banks in exchange for their business. Such inducements can result in consumers paying artificially inflated premiums. The Canadian government has acknowledged this weakness and announced in August 2008 that it would implement measures to ensure that consumers are charged no more for an insured mortgage than the true cost of obtaining that mortgage. Finally, Canada does not provide a fully level playing field for private mortgage insurers. Currently, the government guarantees 100 per cent of the mortgages insured by CHMC but only 90 per cent of private insurers’ loans.

<sup>20</sup> During most of the 1970s and 1980s, the UK experienced a sustained real estate boom, with rapidly rising home prices. This, in turn, created demand for MI products, known in the UK as Mortgage Indemnity Guarantee (MIG). A variety of large multi-line insurance companies offered MIG, typically part of a larger package of coverages offered by the lender, with the lender receiving an agency commission on each line. Such coverage would include not only housing related lines, such as homeowners and mortgage life, but also, for example, automobile liability coverage. During the late 1980s, the UK entered a significant downturn in the housing cycle, leading to a spike in the number of MIG claims. Multi-line insurers offering MIG had neither anticipated nor set aside sufficient capital to protect against such a spike in claims and many of the companies disputed and/or refused to pay a significant number of claims.

<sup>21</sup> Susan Wachter. *Mandatory Mortgage Insurance in Canada: The Public Policy Consequences*. May 2008.

<sup>22</sup> “Carney worried over Canadians’ debt,” Kevin Carmichael, *Globe and Mail*, February 17, 2009.



### V. Conclusion

This paper has reviewed a number of recommendations that would help to curtail pro-cyclicality with regard to residential mortgage lending. Both technical reforms to Basel, particularly relating to the way in which banks calculate minimum capital requirements for residential mortgage lending, and a broader policy solution are needed. The public-private concept recommended in this paper, in which private mortgage insurers take a first loss position, with a government guarantee available to cover truly catastrophic scenarios, represents a sound public policy response, for the USA as well as other nations, that would harness private capital and expertise to protect against future systemic failures while instilling greater confidence and stability in the housing finance system.

# Housing Finance Agencies in Asia<sup>1</sup>

↳ Michael Davies<sup>2</sup>, Jacob Gyntelberg<sup>3</sup> and Eric Chan<sup>4</sup>

## 1. Introduction

Several countries in Asia have established government housing finance agencies to help develop their domestic housing finance markets and associated bond markets. In this paper, we examine the role of these agencies.<sup>5</sup> We consider seven Asian countries – Hong Kong, India, Japan, Korea, Malaysia, Singapore and Thailand. In five of these countries – Hong Kong, Japan, Korea, Singapore and Thailand – the housing finance agencies have a visible involvement in domestic housing finance markets. In India and Malaysia, the housing finance agencies have smaller, but still significant roles. Applying techniques already used to quantify USA government subsidies, we estimate the size of the subsidies received by housing finance agencies in these seven Asian countries. We also estimate the distribution of the subsidies amongst households, financial institutions and the housing finance agencies themselves. The government subsidies reported in this paper should be regarded as estimates only, as bond and mortgage-backed securities (MBS) markets in Asia are still relatively immature, and the quality of the available data on housing finance agencies' operations varies considerably.<sup>6</sup>

We present three main findings. First, the estimated level of government support varies across the seven countries, but is generally small relative to the economy. There is considerable government support in Singapore, but the level of government support is quite low in Hong Kong, India, Japan and Korea, and negligible in Malaysia.

Second, the housing finance agencies have transferred most of the benefit of their government support to either households or financial institutions. In Hong Kong, Korea, Singapore and Thailand, households receive the bulk of the subsidy, whereas in India and Japan, banks and other financial institutions are the primary beneficiaries.

Third, housing finance agencies that lend directly to households have more influence on housing finance markets and better control over the distribution of their government subsidies than housing finance agencies that focus on providing liquidity to the banking system.

The paper is structured as follows. The following section presents the government supported housing finance agencies in Asia that are considered in the paper. Section three discusses the contributions to the development

of housing finance markets made by these agencies. Section four considers the housing finance agencies' risk management. Section five explains the nature of government support provided to the housing finance agencies. Section six outlines our methodology for estimating the level of government support received by the housing finance agencies. Section seven presents our estimates of the size of the housing finance agencies' government subsidies and their distribution. The final section concludes.

## 2. Housing finance agencies in Asia and the Pacific

At present, several Asian countries, including Bangladesh, Hong Kong, India, Japan, Korea, Malaysia, Pakistan, Singapore, Sri Lanka and Thailand, have active government supported housing finance agencies and other countries in the region are considering establishing such agencies. In this study, we focus on the agencies in Hong Kong, India, Japan, Korea, Malaysia, Singapore and Thailand. The primary role of the government housing finance agencies in all of these countries is to help develop their domestic housing finance markets and associated bond markets. In five of these countries – Hong

<sup>1</sup> The authors are grateful to the Bank of Japan, Bank of Korea, Cagamas Berhad, Government Housing Loan Corporation, Hong Kong Mortgage Corporation, Housing Development Finance Corporation, ICRA, Japan Securities Dealers Association, KIS Pricing, Korea Housing Finance Corporation, Merrill Lynch, Mitsubishi UFJ Securities, Moody's, National Housing Bank, Reserve Bank of India, State Bank of India and colleagues at Bank For International Settlements and Reserve Bank of Australia for useful discussions and comments. All errors remain our own. The views expressed in this paper are those of the authors and do not necessarily reflect those of the Bank for International Settlements or the Reserve Bank of Australia.

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<sup>5</sup> The bulk of the literature on the impact of government housing finance agencies relates to the United States. One branch of recent research has centred on quantifying the impact of housing finance agencies on the United States housing market. Hendershott and Shilling (1989), Cotterman and Pearce (1996), Passmore, Sparks and Ingpen (2002), McKenzie (2002) and others focused on estimating the housing finance agencies' impact on mortgage interest rates. They conclude that the housing finance agencies have lowered interest rates on conforming housing loans in the USA by 20-30 basis points. Another branch of the literature (Congressional Budget Office (2004) and Passmore (2005)) which is the most closely related to this paper, estimate the size of the subsidies received by the USA housing agencies because of their ambiguous relationship with the Government, and how those subsidies are distributed. They find that housing finance agencies receive large government subsidies and pass on 30-60 per cent of these subsidies to households.

<sup>6</sup> This paper is closely related to Davies, Gyntelberg and Chan (2006), and Davies, Gyntelberg and Chan (2007). The latter paper provides detailed information on the data and underlying calculations used in this paper.

Kong, Japan, Korea, Singapore and Thailand – the housing finance agencies participate directly in domestic housing finance markets by providing loans and/or mortgage insurance to households. In the remaining countries – India and Malaysia – the housing finance agencies have smaller, but still significant roles.

In all the countries, the housing finance agencies were established in response to concerns that there was a shortage of housing finance in the economy – or that there would be a shortage in the near future. Over time, most of these agencies have been given the additional task of promoting the development of domestic mortgage bond markets. The underlying notion was that bond markets would provide loan originators with an additional source of funding to complement deposits.

In Japan, the Government Housing Loan Corporation (GHLC) was established in 1950 to provide a stable supply of housing finance and improve the quality of the nation's housing stock (Konishi (2002)). The GHLC was wholly owned by the Japanese government. The housing finance agency did not have a formal government guarantee, but market participants generally regard it as having strong implicit government support. The GHLC traditionally focused on providing long-term, fixed-rate housing loans to households through a network of loan originators. The housing finance agency retained these loans on its balance sheet, funding them using a combination of Fiscal Investment and Loan Program (FILP) loans and agency bonds.<sup>7</sup> The housing finance agency also provided insurance services to households who borrowed from private lenders. In 2003, the GHLC began shifting its focus from direct lending to households to developing MBS markets. The housing finance agency started buying mortgages from private financial institutions and it securitises those mortgages together with its own loans through its 'Monthly' MBS program. It also began offering credit guarantees on MBSs issued by banks and other financial institutions. In April 2007, the GHLC was replaced by Japan Housing Finance Agency (JHF). The JHF is wholly government owned and specialises in securitising housing loans that are originated by private financial institutions. The Agency does not lend directly to Japanese households.<sup>8</sup> Its other responsibilities are managing (including servicing and securitising) GHLC's existing loan book, providing mortgage insurance to private

financial institutions and advising households on the most appropriate mortgage.

The Korea Housing Finance Corporation (KHFC) was set up in 2004 to ensure that households had access to long-term housing finance (KHFC (2005)). It is jointly owned by the Bank of Korea (82 per cent) and the Korean government (18 per cent). The KHFC has a formal government guarantee, with the *Korea Housing Finance Corporation Act* requiring the government to cover the Agency's annual losses. The KHFC offers 30-year fixed-rate mortgages to households through a network of mortgage originators. It funds these mortgages by issuing KHFC-guaranteed MBSs. The housing finance agency also provides mortgage insurance to households who borrow from banks and other financial institutions. Prior to KHFC's establishment, most private lenders only offered 3-5 year mortgages, though they have since lengthened the maturity of their loans.

In Malaysia, Cagamas Berhad was established in 1986 under the Companies Act to help rectify a shortage of housing finance in Malaysia by promoting the development of the secondary mortgage market (Kokularupan (2005)). Malaysian and foreign banks own four-fifths of Cagamas, with the remaining fifth held by Bank Negara Malaysia (central bank). Cagamas supports the Malaysian government's policy of encouraging home ownership, particularly for the lower income households, by providing liquidity to the financial institutions. Cagamas does not receive any government support. Cagamas operates solely in the secondary mortgage market. It purchases conventional and Islamic housing loans from financial institutions with or without recourse basis and funds these loans by issuing agency bonds and MBSs. Its bond and MBS issuance thus helps develop the Malaysian private debt securities market. In recent years, Cagamas has broadened its loan purchases to include industrial property loans, hire purchase and leasing debts, and credit card receivables.

The Hong Kong Mortgage Corporation (HKMC) was established by the Hong Kong Monetary Authority in 1997 to promote wider home ownership in Hong Kong by increasing the availability of housing finance and to help develop domestic bond markets (Yam (1996)). The HKMC is wholly owned by the Government through the Exchange Fund.<sup>9</sup> The housing finance agency does not have a formal govern-

ment guarantee, but it has access to additional equity capital and a revolving debt facility from the Exchange Fund. The view from market participants is that the HKMC has a strong implicit government guarantee. The HKMC initially focussed on increasing the supply of housing finance in the economy by purchasing pools of mortgages from banks and other loan originators – thereby providing them with an alternative, more stable source of funding over the business cycle than deposits. It funds these loan purchases by issuing agency bonds and MBSs. Over recent years, the HKMC has broadened its role in the Hong Kong housing finance market. It has established a large mortgage insurance program, which allows banks to offer loans with a maximum loan-to-valuation ratio of 95 per cent without taking on additional credit risk. It has also expanded its loan purchases to include other household debt and some commercial loans.

The Indian National Housing Bank (NHB) was established in 1988 to promote a sound and cost-effective housing finance system, and to help alleviate housing shortages, particularly in rural areas (Reside et al (1999)). It is wholly owned by the Reserve Bank of India and has a formal government guarantee via the *National Housing Bank Act* (1987), which states that the housing finance agency can request the government to guarantee their bonds. The NHB provides funding to banks and housing finance companies (HFCs) by granting loans, which are secured against specific pools of mortgages, and is also the prudential supervisor of HFCs. The housing finance agency funds its lending by issuing bonds and by borrowing from the Reserve Bank of India. The NHB is currently in the process of establishing the Mortgage Credit Guarantee Company, a joint venture between the NHB and several private and supranational entities, to provide mortgage insurance services in India. The NHB is also helping to develop India's MBS market by providing credit enhancements and trustee services for privately issued MBSs.

In Singapore, the Housing Development Board (HDB) was set up in 1960 and tasked with providing Singaporeans with good quality, affordable housing (HDB (2006)). The HDB is statutory board under the Ministry of National Development, is wholly government owned and has a formal government guarantee (*Housing and Development Act*). The HDB provides housing

<sup>7</sup> The FILP is a government program that makes loans and investments for public purposes. The GHLC received FILP loans from the Japanese government to help fund their home loans to individuals.

<sup>8</sup> The Agency will only provide direct loans for disaster mitigation and urban rehabilitation, as these market segments cannot be profitably serviced by private financial institutions. See Ministry of Land, Infrastructure and Transport (2006) and Japan Housing Finance Agency (2007).

<sup>9</sup> The Hong Kong Exchange Fund is made up of the fiscal reserves and foreign currency reserves of the Hong Kong government ([www.info.gov.hk/hkma/eng/exchange/](http://www.info.gov.hk/hkma/eng/exchange/)).

finance to low- and medium-income households at concessionary interest rates. Prior to 2003, it also provided housing finance at market rates to high-income households. The housing finance agency funds its lending by borrowing from the Singaporean government and from banks, and by issuing bonds.

In Thailand, the Government Housing Bank (GHB) was established in 1953 to provide housing finance to Thai citizens, focusing on low- and medium-income households (GHB (2006)). The GHB is wholly owned by the Ministry of Finance and has a formal government guarantee on its bonds via the *Government Housing Bank Act*. The GHB offers residential mortgages, standard deposit account services and assists households that are in financial distress to restructure their housing loans. Three-quarters of GHB's funding comes from deposits from government, private companies and households. The housing finance agency obtains the balance of its funding by issuing government guaranteed bonds in the domestic market and offshore.

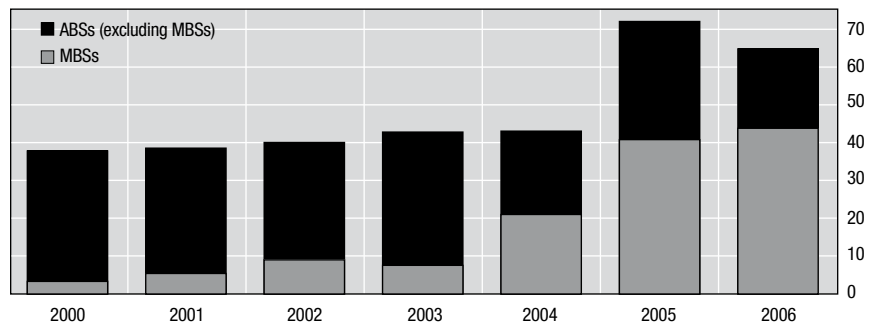
### 3. The contributions of Asian housing finance agencies

Many of the sample countries have recorded significant growth in the securitisation of mortgages over the past few years (Graph 1). Between 2000 and 2006, annual MBS issuance increased from \$3 billion to \$44 billion. This growth has been significantly faster than the growth in issuance of other ABSs (Gyntelberg and Remolona (2006)). In several countries, the housing finance agencies have led this growth. In Hong Kong, India, Japan, Korea and Malaysia, the outstanding of housing agency MBSs has risen more quickly than privately issued MBSs (Table 1). In Hong Kong, India, Korea and Malaysia, housing finance agency MBSs account for the bulk of outstanding MBSs. The housing finance agencies' issuance of MBSs has served to increase investor familiarity with the product. The longer-term objective is to gradually create a benchmark yield curve for the pricing of private MBSs. In a few countries, housing finance agencies have also been among the largest non-government bond issuers and their bond issuance has generally grown faster than the bond market as a whole.

Many of these housing finance agencies have also contributed to the development of their domestic MBS markets by working with governments to develop legislation that has

**Graph 1 Domestic Issuance of ABSs in Seven Asian Economies<sup>1</sup>**

In billions of US dollars



<sup>1</sup> Hong Kong SAR, India, Japan, Korea, Malaysia, Singapore and Thailand.

Sources: Dealogic; HSBC; Moody's Investors Service; Standard & Poor's; Thomson Financial Securities Data; national rating agencies.

removed legal, tax and regulatory impediments to securitisation. They have also improved the availability of good historical data on rates of non-payment and prepayment on housing loans, and have encouraged financial institutions to standardise their loan documentation.

But despite the housing finance agencies' efforts, domestic MBS markets are still not fully developed in any of the countries we consider. In Singapore and Thailand, no housing loans have been securitised. In Hong Kong, India and Korea only 1% of housing loans are securitised, while in Japan and Malaysia this proportion is 5–6%. As a result, in all of the countries there is limited liquidity in secondary MBS markets.

#### Housing finance markets

In their respective housing finance markets, the agencies have broadened the range of loan types that are available to borrowers. In particular, several agencies have focused on introducing longer-term fixed rate loans.<sup>10</sup> This has stimulated private lenders to lengthen the maturity of their loan contracts and to introduce more sophisticated products that combine features from fixed and floating rate loans. In Korea, the KHFC's provision of 30-year fixed rate mortgages likely contributed to banks and other financial institutions lengthening the maturity of their housing loans from three years to 20–30 years.<sup>11</sup> In Japan, the GHLC was the main provider of long-term fixed rate mortgages and the JHF (GHLC's successor) uses securitisation to transfer the interest rate and prepayment risk of long-term fixed rate housing loans to capital markets, thereby allowing private financial institutions to offer these loans to households. Interestingly, the HKMC offered long-term fixed

rate mortgages in 2001, but there was only limited demand for them as Hong Kong households have a preference for floating rate loans and the local banks did not market them aggressively.

#### Similar objectives but different approaches

Despite their common objectives, the approaches used by the housing finance agencies to achieve these objectives have differed considerably (Table 2). Four of the agencies – the GHLC, the GHB, the HDB and the KHFC – distribute their own loans to households, either directly or via banks and other loan originators. Thus, they fully compete in the housing finance market by offering loans to any household that satisfies their lending criteria. In addition to their direct lending, the GHLC offered mortgage insurance and purchased mortgages from other lenders for its MBS programme. (In April 2007, GHLC was replaced by the JHF, which focussed on securitising loans originated by private financial institutions rather than lending directly to households). The KHFC provides guarantees on loans that are used to fund deposits for Chonsei leases.<sup>12</sup> The remaining agencies – the HKMC, Cagamas and the NHB – do not lend directly to households. The HKMC and Cagamas purchase already originated mortgages from banks and other lenders. The NHB lends directly to banks and finance companies, with the loans secured against specific pools of mortgages. The HKMC also has a large mortgage insurance division and the NHB is in the process of establishing the Mortgage Credit Guarantee Company, a joint venture between the housing finance agency and several private and supranational entities, to provide mortgage insurance services.

Housing finance agencies' involvement in MBS markets also differs. Cagamas, the HKMC and

<sup>10</sup> This is similar to the USA, where the Construction Finance Corporation pioneered the 30-year fixed rate mortgage in the 1930s (Jones (1951)).

<sup>11</sup> When the KHFC was founded in 2004, only 25% of housing loans had maturities of greater than 10 years. By end 2005, the proportion of loans with maturities of over 10 years had doubled to 50% (See KHFC (2006)).

<sup>12</sup> Chonsei is a lease contract, where rather than paying a periodic rent for the right to use real property, the tenant pays an up-front deposit for the use of the property with no requirement for periodic rent payments. Thus, the "rent" received by the landlord is the investment return on the Chonsei deposit. At the end of the contract, the landlord returns the tenant's Chonsei deposit.



**Table 1 Size of Bond and MBS Markets<sup>1</sup>**

Amount outstanding; in billions of US dollars

	Date	MBS		Bonds				MBS + Bonds
		Housing agency	Private	Housing agency	Financial and corporate <sup>2</sup>	Government	Non-resident	Share of housing agency debt securities <sup>3</sup>
Hong Kong SAR	Dec 01 Mar 06	0.0 0.6	0.1 0.0	2.6 4.0	8.2 10.8	6.8 8.8	3.6 4.0	14.7 19.0
India	Jun 02 Jun 05	0.1 0.2	n.a. n.a.	5.3 28.4	0.0 15.8	134.8 243.8	0.0 0.1	3.9 9.9
Japan	Mar 02 Mar 06	1.5 27.2	6.1 60.4	16.6 33.1	1,314.1 1,211.9	3,166.3 5,501.8	57.0 57.1	0.4 0.9
Korea	Dec 01 Dec 05	1.5 8.3	n.a. n.a.	0.0 1.5	213.2 356.7	65.8 226.0	0.2 0.0	0.5 1.7
Malaysia	Dec 01 Dec 05	0.0 1.5	0.0 0.0	5.6 6.4	36.0 47.4	30.9 50.4	0.0 0.2	7.7 7.5
Singapore	Mar 01 Mar 06	0.0 0.0	n.a. n.a.	1.6 2.7	7.5 2.6	21.7 35.5	1.5 2.9	5.1 6.7
Thailand	Dec 01 Dec 05	0.0 0.0	0.0 0.0	1.3 1.8	13.6 23.6	18.5 48.8	0.1 0.2	3.9 2.4

<sup>1</sup> Excluding money market instruments. <sup>2</sup> Excluding housing agency bonds and MBSs as well as private MBSs.

<sup>3</sup> As a percentage of total bonds and MBSs.

Sources: Citigroup; government housing agencies; BIS; authors' calculation.

**Table 2 Housing Agencies' Business Lines**

	Agency	Issues MBSs	Private MBS enhancement	Own loan products	Purchases mortgages from banks	Mortgage insurance
Hong Kong SAR	HKMC	Yes	No	No	Yes	Yes
India	NHB	No <sup>1</sup>	Yes <sup>2</sup>	No	No <sup>3</sup>	No
Japan	GHLC	Yes	Yes <sup>2</sup>	Yes	Yes	Yes
Korea	KHFC	Yes	No	Yes	Yes <sup>4</sup>	No <sup>5</sup>
Malaysia	Cagamas	Yes	No	No	Yes	No
Singapore	HDB	No	No	Yes	No	No
Thailand	GHB	No	No	Yes	No	No

<sup>1</sup> Only issues MBSs on behalf of private financial institutions. <sup>2</sup> The GHLC provides credit wraps for private MBSs, NHB provides credit wraps and purchases part of the subordinated tranche. <sup>3</sup> The NHB lends directly to banks, with the loans secured against specific pools of mortgages. <sup>4</sup> As of September 2006 the KHFC had not purchased loans from banks. <sup>5</sup> The KHFC provides a guarantee on deposits for Chonsei loans.

Sources: government housing agencies; national central banks; BIS.

the KHFC issue their own MBSs for which they guarantee interest and principal payments. Cagamas and the KHFC also hold the first-loss tranche of their own MBSs. These three agencies do not provide credit enhancements for

privately issued MBSs. The GHLC issues its own MBSs, for which it guarantees interest and principal payments and in addition provides credit enhancements for MBSs issued by others. The NHB provides credit enhancements and trustee

services for privately issued MBSs, but does not issue its own MBSs. Neither the GHB and nor the HDB participates in MBS markets.

In recent years, the supply of housing finance provided by banks has increased in our sample countries. Over the same period, several of the agencies have broadened their activities. The HKMC has broadened its loan purchases to include other household debt and some commercial loans. It has also expanded its mortgage insurance programme and increased the maximum loan-to-value ratio on insured loans to 95%. Cagamas has also broadened its loan purchases. The NHB has started providing credit guarantees on private MBSs and is establishing a mortgage insurance company.

In contrast to the other housing agencies, the HDB and the GHB have not started new business lines, although the HDB has made it easier for households to obtain loans. In Japan, the GHLC has reduced its direct lending and has focused on buying mortgages from banks and issuing MBSs. Moreover, the replacement of the GHLC with the JHF in April 2007 largely reflects

the government's desire to reduce its role in the Japanese economy.

## 4. Risk management by housing finance agencies

Housing finance agencies manage a variety of risks associated with domestic housing loans. These can include credit, interest rate and prepayment risks. For securitised loans, loans for which the housing finance agencies have provided mortgage insurance and credit enhancements on private MBSs, the agencies are required to manage only credit risk.<sup>13</sup> For loans held on balance sheet, housing agencies are usually viewed as managing all financial risks, with the exception of Cagamas, which has recourse to the bank that sold it the loan if the borrower defaults, and hence only manages interest and prepayment risk.

The extent to which housing finance agencies manage the risks of domestic housing loans varies across Asia. The Singaporean and Thai housing finance agencies manage all of the financial risks on about 40% of housing loans in their respective countries (Graph 2). The Hong Kong and Japanese housing finance agencies manage some or all of the financial risks on roughly 25% of domestic housing loans. The remaining countries manage some or all of the financial risks on about 10% of housing loans. The housing finance agencies manage this financial risk by either hedging it with a third

party, transferring it to bond and MBS investors or retaining it within their organisation.

The agencies in Hong Kong, India and Korea have all increased the share of credit risk that they manage. In Hong Kong, the HKMC's share of the credit risk on housing loans has quadrupled over the past five years, mainly due to the growth in the provision of mortgage insurance. In Korea, the KHFC's share of credit risks on housing loans has also risen strongly, reflecting the growth in its mortgage insurance and MBS programmes. In India, an increase in the NHB's direct lending to banks and other financial institutions has seen it managing additional risks, although these are still limited relative to the size of the economy. In contrast, the GHLC has scaled back its direct lending operations ahead of its restructuring and consequently the share of the credit risk on Japanese housing loans it manages has fallen. The HDB's withdrawal from providing finance to high-income households in 2003 has caused its share of the credit risk on Singaporean housing loans to fall. The HKMC is the only agency that actively hedges credit risk. Roughly half of the credit risk from its mortgage insurance operations have been reinsured (HKMC (2006)). All of the other housing finance agencies retain the credit risk within their organisations.

In Hong Kong and India, the housing finance agencies have also increased the share of prepayment risk they manage. The available evidence suggests that these housing finance agencies retain this risk. The GHLC has started

securitising its outstanding portfolio of housing loans, thereby reducing the share of prepayment risk it holds. The JHF has continued this process. The share of prepayment risk held by Cagamas has also fallen, reflecting a decrease in its share of Malaysian housing loans. In Korea, the Agency issues MBSs and thus transfers prepayment risk to bondholders. In Thailand and Singapore, the housing finance agencies' share of prepayment risk has fallen in line with their share of the domestic mortgage market.

Lastly, the agencies in Hong Kong and India have increased the share of interest rate risk they manage, while the shares of interest rate risk managed by housing agencies in the other countries have declined. All of the housing agencies appear to hedge a significant share of the interest rate risks that they manage.

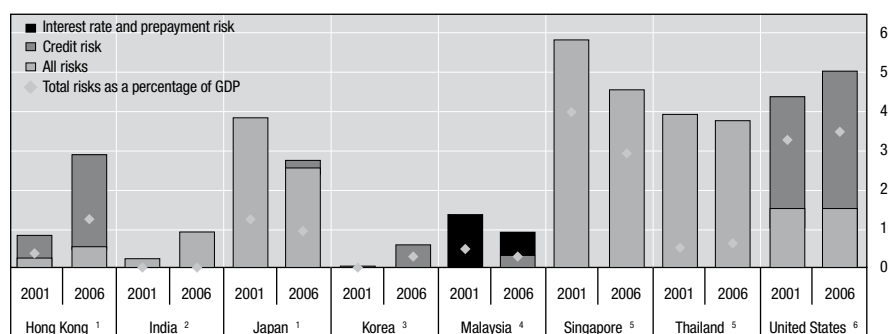
## 5. Government support

Formal government support for the housing finance agencies varies across our sample, from outright guarantees and full government ownership to no guarantee and limited government ownership (Table 3). In India, Korea, Singapore and Thailand the housing finance agencies have an explicit government guarantee and are wholly owned by their governments (either directly or via the central bank). In Korea, the law requires the government to cover losses in excess of the KHFC's capital reserves (see the Korea Housing Finance Corporation Act). The Singaporean government is also required to cover the HDB's losses (Housing Development Board Annual Report). In India, the NHB can request the government to guarantee its bonds (National Housing Bank Act of 1987). At present, only some NHB bonds have an explicit government guarantee, but both types of bonds trade at similar prices, suggesting that market participants perceive the NHB as being backed by the Indian government. The Thai government automatically guarantees GHB's bonds.

In Hong Kong and Japan, the housing finance agencies do not have a government guarantee but they are wholly owned by the government. It is clear that the HKMC in Hong Kong enjoys a high level of government support, with the housing finance agency having access to additional callable equity capital and a revolving credit facility, as well as having various government officials and senior personnel of the Hong Kong Monetary Authority on its board. The Malaysian government owns only a fifth of Cagamas – the remainder being held by Malaysian and foreign banks – and the housing finance agency does not have a government guarantee.

**Graph 2 Risk Managed by Housing Agencies**

Percentage of total housing loans



<sup>1</sup> The HKMC and the GHLC assume all risks on loans held on their balance sheets, and credit risk on their MBS issuance and mortgage insurance operations. <sup>2</sup> The NHB assumes all risks on its loans to banks and housing finance companies, and credit risk on the MBSs that it guarantees. <sup>3</sup> The KHFC assumes credit risk on its MBS issuance and mortgage insurance operations. For 2001, data are for the Korea Mortgage Corporation. <sup>4</sup> Cagamas assumes interest rate risk and prepayment risk on loans (with recourse to the originating bank) held on its balance sheet, and credit risk on its MBS issuance. <sup>5</sup> The HDB and the GHB assume all risks on loans held on their balance sheets. <sup>6</sup> Freddie Mac and Fannie Mae assume all risks on loans and MBSs held on their balance sheets, and credit risk on their MBS issuance.

Sources: Government housing agencies; national central banks; Bloomberg; BIS calculation.

<sup>13</sup> When private financial institutions securitise loans, the credit risk is often transferred to the ABS investor. In contrast, government housing agencies in Asia and in other parts of the world typically retain the credit risk on securitised loans.

**Table 3 Government Support for Housing Agencies**

Country	Government ownership		Government guarantee	
	Government	Central bank	Government view	Market view
Hong Kong SAR	100	–	No <sup>1</sup>	Yes
India	–	100	Yes	Yes
Japan	100	–	No	Yes
Korea	18	82	Yes	Yes
Malaysia	–	20	No	No
Singapore	100	–	Yes	Yes
Thailand	100	–	Yes	Yes

<sup>1</sup> No formal guarantee, but significant government support.

Sources: BIS; central banks; housing agencies; private market participants

### Market perception of government support

Generally, there is a high level of agreement between the formal level of government support and the market perception thereof. The market perception of government support is reflected in credit rating and bond market prices, and these two indicators are broadly consistent for all countries.

For India, Korea, Singapore and Thailand, which have explicit guarantees, the market simply takes this as given. When rated, the housing finance agencies have the same credit ratings as their respective governments.<sup>14</sup> The spreads on housing finance agency bonds and MBSs over government bonds are, according to market participants, a reflection of their smaller size, and the prepayment risk on MBSs (Table 4). Yields on housing finance agency debt and MBSs are well below yields on other financial institutions' bonds.<sup>15</sup>

In Japan and Hong Kong, where the agencies are wholly owned by the government but do not

have a formal government guarantee, the market view is that they have strong implicit government guarantees. Both agencies have the same credit ratings as their respective governments and upgrades and downgrades to the sovereign credit ratings have been reflected immediately in the housing finance agencies' ratings.<sup>16</sup> In Japan, GHLC bonds trade at yields that are 10 basis points higher than yields on Japanese government bonds. The GHLC MBS spread of around 40 basis points is attributed to their prepayment risk. In Hong Kong, HKMC bonds and MBSs trade at yields that are 50 basis points higher than yields on Hong Kong government bonds. This probably reflects the smaller size and lower liquidity of the HKMC bonds.

In the case of Malaysia, the market view is that Cagamas does not have a government guarantee. This is consistent with the formal level of government support. The domestic rating agencies state that Cagamas' AAA credit rating reflects the high quality of its loan assets and

the quality of its shareholders, which include several large Malaysian and international banks as well as Bank Negara Malaysia (Kokularupan (2005)). Consistent with the absence of government support, Cagamas bonds trade at yields that are roughly 60 basis points higher than yields on Malaysian government bonds – the largest spread differential of all the housing finance agencies. Reflecting their much higher liquidity, yields on Cagamas bonds are, however, lower than yields on bonds issued by other AAA-rated financial institutions. Cagamas MBSs trade at a spread of around 15 basis points above Cagamas bonds, despite having significant over-collateralisation and thus lower credit risk. A possible explanation for this is that these bonds are smaller in size and thus less liquid.

### 6. Quantifying the size and distribution of government support

To determine the impact of government sponsored housing finance agencies on primary housing finance markets in Asia, we collected detailed data on the operations of housing finance agencies and other financial institutions for seven Asian countries for the sample period January 2004 to December 2005. The data that were used in this working paper have been sourced from a broad range of organisations and, where possible, have been cross-checked against a few sources to ensure their accuracy. But the relative immaturity of bond markets and housing finance markets in Asia means that the quality of the available data on the operations of the housing finance agencies varies. Hence, the government subsidies reported in this paper should be seen as estimates only.

To estimate the size of government subsidies received by housing finance agencies and their distribution we consider the net present value of cash flows, following a methodology similar to that used in the study by the USA Congressional Budget Office in 2004. We take as our starting point that housing finance agencies' subsidies are derived from two main sources: an explicit or implicit government guarantee, which allows them to issue bonds and MBSs at lower yields than other financial institutions; and direct government benefits such as grants, tax exemptions and favourable regulatory treatment. The USA Congressional Budget Office (CBO) methodology was initially used to estimate the value the benefits the Government Sponsored Enterprises (GSEs) received from their special status as well as how much of this subsidy was passed on to borrowers.

**Table 4 Yield Spreads on MBS and Agency Bonds**

Spreads on five-year sovereign bonds, in basis points<sup>1</sup>

	Agency bonds	Agency MBSs	Bonds issued by financials	MBSs issued by financials
Hong Kong SAR	49	50–55	55–60	...
India	50	70	102	70
Japan	11	39	27	55
Korea	15 <sup>2</sup>	25	38	...
Malaysia	57	71	94	...
Singapore	47	–	66	–
Thailand	19 <sup>3</sup>	–	96 <sup>3</sup>	–

<sup>1</sup> Rounded average spreads for 2006. <sup>2</sup> Spread for MBS bond with bullet maturity. <sup>3</sup> Spreads on three-year sovereign bonds.

Sources: Asian Bond Online; Asian Development Bank; Barclays; Bloomberg; GHLC; HSBC; KIS Pricing; Mitsubishi UFJ Securities; R&I Japan; BIS.

<sup>14</sup> The Housing Development Board (HDB) in Singapore is not rated.

<sup>15</sup> In India, yields on the senior tranches of agency MBSs and private MBSs are similar. But private MBSs have a large subordinated tranche (10–20 % of the value of the loan pool), whereas agency MBSs do not have a subordinated tranche.

<sup>16</sup> For rating agency views on the HKMC, see Chan et al (2005) and Wa et al (2005). For rating agency views on the GHLC, see Ogawa (2006) and Sonoda et al (2006).

Following CBO (2004) we assign the subsidy impact on cash flows to the year in which they were earned and not the year that the subsidy was received. Cash flows received in future years are discounted using the appropriate government bond yield. Hence, the present value of gross subsidies ( $S$ ) is calculated as:

$$S = \sum_{t=1}^n \frac{(r^{FI} - r^{HA})D^{HA} + (m^{FI} - m^{HA})MBS^{HA}}{(1 + d_t)^t} + Ex$$

where  $r$  is the average yield on bonds and  $m$  is the average yield on mortgage-backed securities, with the superscript indicating whether the yield is for financial institutions ( $FI$ ) or housing finance agencies ( $HA$ ). The yields are based on the average maturity of bonds and MBSs issued in that year.  $D^{HA}$  and  $MBS^{HA}$  represent, respectively, the amount of bonds and mortgage-backed securities issued by housing finance agencies, and  $Ex$  is the value of grants, tax exemptions and other benefits received by housing finance agencies. The discount rate  $d$  is taken from the corresponding country's sovereign yield curve.

When considering how the subsidies are distributed among households, financial institutions and the housing finance agencies themselves, we assume that housing finance agencies pass on part of the subsidies to households via a lower mortgage rate. The present value of the subsidies received by homeowners ( $S^B$ ) can therefore be expressed as:

$$S^B = \sum_{t=1}^n \frac{(g^{FI} - g^{HA})M}{(1 + d_t)^t}$$

where  $g^f$  and  $g^{HA}$  are the average lending rates for mortgages withdrawn from financial institutions and housing finance agencies respectively,  $M$  is the amount of mortgages funded by the housing finance agencies and  $n$  is the average life of the mortgage.

We further assume that financial institutions benefit from lower funding costs by selling mortgages to housing finance agencies or borrowing from them at attractive interest rates. The present value of the subsidies received by financial institutions ( $S^{FI}$ ) is expressed as:

$$S^{FI} = \sum_{t=1}^n \frac{(r^{FI} - b^{HA})B}{(1 + d_t)^t}$$

where  $b$  is the rate at which housing finance agencies purchase mortgages from (or lend to) financial institutions,  $B$  is the amount of funding provided by the housing finance agency and  $n$  is the average maturity of this funding. Finally, it is assumed that the housing finance agencies retain the remaining portion of the subsidies ( $S^{HA}$ ) that are not captured by homeowners and financial institutions. Hence:

$$S^{HA} = S - S^B - S^{FI}$$

While the basic approach of this paper is similar to those used in the USA studies, the methodology is adjusted to account for the different structures of Asian and USA mortgage markets. In the USA, the residential mortgage market is divided into two parts – conforming loans (loans that can be purchased by the USA housing finance agencies) and non-conforming loans. By comparing the interest rates that are charged on conforming residential mortgages with the interest rates that are charged on similarly risky non-conforming loans (typically “jumbo” loans), researchers are able to estimate the proportion of the government subsidy that is passed onto USA households. But several of the mortgage markets in our sample of Asian countries are different from those in the USA. In Hong Kong, India and Malaysia, the mortgage market is not segmented. Banks and other financial institutions provide all of the housing loans in these countries. The housing finance agencies provide liquidity to the banking system, either by purchasing housing loans from financial institutions (Hong Kong and Malaysia), or by making direct loans to them (India).

In Singapore, the HDB only provides housing loans to low- and medium-income households, with private banks and finance companies lending to high-income households. In Japan and Korea, the housing finance agencies compete reasonably directly with the private banks – the housing agencies offer 30-35 year fixed-rate loans while the private banks offer medium term (10-20 year) variable-rate loans. Only in Thailand are the housing loans offered by the housing finance agency and private banks directly comparable – they both offer 15-20 year variable rate loans.

The different market structures mean that the method used to estimate the size of the interest rate saving that is received by households varies across the seven countries. In Japan, Korea, Singapore and Thailand we have used the

spread between the housing finance agencies' mortgage rates and banks and other financial institutions' mortgage rates. Where necessary, we have used fixed-floating interest rate swaps (of the appropriate maturity) to convert floating-rate housing loans into fixed-rate housing loans. This calculation implicitly assumes that housing agency and private lenders' housing loans are equally risky. This is a reasonable assumption for Japan, Korea and Thailand because the housing finance agency and private lenders compete for the same borrowers and have similar lending standards, but it may be less valid for Singapore where the housing finance agency only lends to low- and medium-income households.<sup>17</sup> In Hong Kong, India and Malaysia, where the mortgage market is not segmented, we have relied on discussions with housing finance agencies, central banks and market participants to evaluate the housing finance agencies' impact on mortgage rates. The housing finance agency bond spreads are spreads at issuance where available. However, data limitations mean that we have had to rely on secondary market spreads in a number of cases. To account for the resulting uncertainty regarding bond spreads at issuance, we have calculated the size of the support for a range of yield spreads. We have added and subtracted 10 basis points relative to our central estimates for all countries except India, for which we have added and subtracted 20 basis points. The amount of debt issued and its maturity are based on actual issuance data. The private financial institution bond spreads are based on entities of comparable credit quality to the housing finance agencies on a standalone basis, i.e. without government support.<sup>18</sup> These bond spreads are sourced from the secondary bond market.

## 7. Findings

### Size of the government subsidies

For most of the selected Asian countries, the level of government support given to housing finance agencies is small in absolute terms and relative to GDP. In all countries except Singapore, the level of government support given to housing agencies is below 0.1% of GDP (Table 5). In Singapore, the subsidy is roughly 0.5% of GDP. The variation in the size of the estimated subsidies reflects the relative importance of the different business lines and the nature of government support.

By comparison, the Congressional Budget Estimate (CBO (2004)) finds that the USA housing

<sup>17</sup> For Japan, data on securitised loans from Standard and Poor's and Mitsubishi UFJ Securities suggest the agency and private bank loans have similar characteristics.

<sup>18</sup> Where no standalone ratings exist for the housing finance agencies we have relied on market liaison and our own judgment to identify financial institutions that are of similar credit quality to the housing finance agencies.



finance agencies received government subsidies equivalent to 0.2% of GDP. When comparing the USA estimates with those found for the Asian agencies, it is however important to keep in mind that today the USA housing agencies are publicly traded companies with dispersed public shareholdings, while the Asian housing finance agencies are government agencies.

the financial institutions receive very little of the subsidy. Similarly, in Singapore, all of the government support flows through to households through lower mortgage interest rates. The main difference between the two countries is that in Singapore the housing finance agency's concessionary interest rates are only available to low- and medium-income households, whereas in Korea the housing agency can lend to

Due to the structure of the housing finance markets and the available data, it is not possible to estimate the distribution of the subsidy for Hong Kong and India. In particular, we cannot differentiate between mortgages that are financed by the housing finance agencies and mortgages that are financed by other financial institutions, and hence cannot determine how much of the estimated subsidy is distributed to households. Nonetheless, discussions with market participants in each of the countries have provided some indication of the distribution of the subsidy. In India, it appears that the housing finance agency transfers most of the estimated subsidy to banks and other financial institutions by providing them with low cost loans. In Hong Kong, HKMC's mortgage insurance operations may have broadened the range of households that can obtain housing finance.

**Table 5 Estimated Size of Government Subsidies to Housing Agencies in 2005**

Country	Estimated range for subsidy <sup>1</sup>	Main subsidy channel
Hong Kong SAR	0.000–0.003	Bonds/loans
India	0.006–0.009	Bonds/loans
Japan	0.002–0.007	Bonds
Korea	0.015–0.025	MBSs
Malaysia	0.000	–
Singapore	0.459–0.498	Subsidy/loans
Thailand	0.038–0.081	Bonds/loans
<i>Memo: United States<sup>2</sup></i>	<i>0.210</i>	<i>MBSs and bonds</i>

<sup>1</sup> As a percentage of GDP. <sup>2</sup> Data are for 2003.

Sources: Congressional Budget Office; IMF; national central banks, housing agencies; BIS.

### Who benefits?

The beneficiaries of the government subsidy differ across countries. In Hong Kong, Korea, Singapore and Thailand, households receive the bulk of the subsidy, while in India financial institutions receive most of the benefits (Table 6). In Japan, the situation is more complex with financial institutions receiving most of the subsidy if one focuses on new lending and the GHLC receiving more than half of the subsidy if existing mortgages are included. In almost all countries, the housing finance agency retains very little of the subsidy.

any household. In Thailand, much of the housing finance agency's subsidy is passed on to households through lower interest rates on their mortgages, with low-income households benefiting most. GHB's depositors also benefit from the government subsidy through higher deposit rates.

In Japan, the housing finance agency retains over half the estimated subsidy if both new and existing mortgages are included. This in part reflects losses stemming from lending in the 1980s and 1990s. For new lending, financial institutions and the GHLC each receive about 45% of the subsidy, with households re-

### Financial market development

In several of the countries considered, the housing finance agencies appear to have helped develop domestic MBS and housing finance markets. In the MBS market, they have worked with governments to eliminate structural impediments to securitisation and have initiated more systematic issuance of MBSs. In several of the primary housing finance markets, they have broadened the range of loan types available to borrowers by introducing longer-term fixed rate loans. In some markets, they have also provided liquidity to the banking system – either by purchasing housing loans from financial institutions, or by making direct loans to them – though their capacity to provide stable funding for loan originators over the whole economic cycle has not yet been tested. Housing finance agencies also appear to have helped improve household access to loans in some countries.

### Broadening of mandates and financial stability

From a financial stability perspective, there are aspects of some of the Asian housing finance agencies' operations that may require close monitoring if the trends seen in recent years continue. One aspect is the recent broadening of Asian housing finance agencies' mandates as they try to remain relevant in an environment where banks have increased their supply of housing finance. This has arguably resulted in housing finance agencies holding more risks, particularly credit risk, in Hong Kong, India and Korea. As housing finance agencies increase their activities, their risk management requirements will also grow and thus become more challenging. In Japan, Singapore and Thailand, the housing finance agencies' shares of the financial risks associated with housing loans have fallen over recent years, but they are still significant.

**Table 6 Beneficiaries from Government Support to Housing Finance Agencies**

Hong Kong SAR	Households
India	Financial institutions
Japan	Financial institutions, Households
Korea	Households
Malaysia	–
Singapore	Households
Thailand	Households
<i>Memo: United States</i>	<i>Households, housing agencies</i>

Source: See Table 5.

In Korea, almost the entire subsidy is passed on to households through lower interest rates on their mortgages. In addition to providing households with lower cost mortgages, the KHFC has been able to broaden the range of mortgage types that are available in Korea. The KHFC and

ceiving the remaining 10%. However, the fact that households were allowed to refinance their loans with little or no financial penalty during the mid-1990s when interest rates were falling suggests that they benefited significantly from the government support of the GHLC.

## 8. Conclusion

In Asia, government-supported housing finance agencies have played a constructive role in the development of domestic residential mortgage and bond markets, and in most countries, they have not required large government subsidies to fulfil this mandate. In all countries except Singapore, the level of government support given to housing finance agencies is below 0.1% of GDP. The housing finance agencies have also managed to transfer most of the benefit of their government support to either households or financial institutions. Agencies that participate directly in primary housing finance markets appear to have been most successful in passing on their government support to households.

However, many of the housing finance agencies have a large or rapidly growing presence in their domestic housing markets, which could give rise to policy concerns going forward. One risk is that the government subsidised housing agencies will distort competition, crowd-out private lenders and mortgage insurers, and ultimately hinder market development. This occurred in Japan and was one of the reasons why the GHLC's role was refocused away from direct lending towards supporting securitisation of mortgages originated by private lenders.<sup>19</sup> Finally, in many countries it has proven less easy for governments to scale back their involvement in markets than to introduce it (see Higgs (1985)). Interestingly, very few of the government-owned Asian housing agencies have explicitly outlined exit strategies from their respective housing finance markets.

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<sup>19</sup> This was also a factor in the Reserve Bank of Australia's recent cautioning against creating a government housing agency in Australia to correct a cyclical change in the cost and availability of MBS funding (see Lowe (2008) and Reserve Bank of Australia (2008)).

# Measuring the Impact of the Financial Sector Charter (FSC) with Respect to Low-Income Housing in South Africa

↳ By Vuyisani Moss<sup>1</sup>

## 1. Introduction

This paper is largely informed by the analysis of trends and developments in the Financial Sector Charter (FSC). Government and banks signed a Memorandum of Understanding (MoU) in April 2005, in terms of which banks agreed to extend R42 billion for affordable housing in the five years to end-2008. This article therefore provides a critical examination with respect to FSC targets and deliverables. Moreover, the article seeks to investigate how the financial institutions under the FSC's backing have made credit more accessible and affordable for low- to middle-income households.

Further, the article assesses the extensiveness of investment in low-income housing as stipulated by the Financial Sector Charter Council (FSCC) reports, in particular quantifying the picture of their advance book. What emerges from the analysis is that there is a significant need to accelerate and enhance the scale of housing delivery, especially to counter the acute housing shortage. Further, what appears from the findings of the analysis is that the banks' R42 billion voluntary initiative is underpinned by the market economics theoretical framework, which is defined as an economy controlled by market forces rather than government action, a flawed model to genuinely address access to housing finance in a dysfunctional housing market.

Lenders, banks in particular, have to come up with innovative ways to address the gaps that are evident in the market. Also, in presenting to meet market needs and expectations, it is critical for banks to account in measuring precisely the actual impact, detailing the breakdown of the number of loans originated versus income segments. As the paper experimented, this appeared as a shortcoming in both the FSCC annual review report.

To understand clearly the degree of creative solutions in housing finance it is imperative to recognise the economic fundamentals in which housing finance mechanisms are located. Further, it is central to this argument to grasp the importance of market influence and demographics in addressing the environment and climate in which housing finance lending takes place.

## 2. Demographics

According to Statistics South Africa 2007 Community Survey, the population of South Africa has increased from 40.5 million in 1996 to 44.8 million in 2001 and to 48.5 million in 2007. The total population by mid-2008 was, by Statistics South Africa, estimated to be around 48.69 million. Provinces with the highest population size are Gauteng (10.5 million) and Kwazulu-Natal (10.3 million). The average household size decreased from 4.6 in 1996 to 3.9 in 2001 and has remained constant at 3.9 in 2007. 71% of households now live in formal dwellings compared to 64% in 1996.

The number of households living in informal dwellings decreased from 16% in 1996 to 14.5% in 2007. The highest number of informal dwellings is in North West Province (24%) followed by Gauteng (22%). Households have increased from 9,499,932 in 1996 to 12,994,151 in 2006. Since 1994, the South African government has constructed 2.4 million houses and another 2.2 million are still needed to address the backlog. The housing budget increased from R8.8 billion in 2007/08 to R12.5 billion in 2008/09. That is a real growth of R3.7 billion or 19.5%.

### 2.1 Employment Opportunities

Data from Statistics South Africa shows South Africa's high unemployment rate fell from

25.5% to 23% in 2007. The Quarterly Labour Force Survey estimates of strict definition of unemployment was by the third quarter of 2008 standing at 23.2% (4.1 million people), whilst the wide definition during the same period was estimated at 27.6% (5.2 million people).

Since 2001, the economy has added 2.1 million jobs, with the strongest growth recorded over the past three years. The proportion of people engaged in professional work rose from 4.7% to 6.4% and managerial, professional and technical workers combined rose from 21% of all employed to 22.6%. The biggest employer was the retail and wholesale trade segment, with 22.3%, followed by community and social services (18.5%) and manufacturing (13.6%).

## 3. Economic Outlook

In South Africa, real economic growth in 2007 came to around 5% for the fourth year in succession. The country's economic and financial systems are widely recognized for sophistication and robustness. The banking regulations rank among the best in the world and the sector has long been rated among the top ten globally (Reserve Bank Quarterly Report). As a result, it was no surprise that the country was shielded from the international financial turmoil. Not only is South Africa itself an important emerging economy, it is also the gateway to other African markets.

The country plays a significant role in supplying energy, relief aid, transport, communications and investment on the continent. Its well-developed road and rail links provide the platform and infrastructure for ground transportation deep into Africa. Until recent market volatility, consumer inflation has been on a downward trend since 2002 when consumer prices increased to an average of 9.3% following the September 11 terror attacks in the USA.

<sup>1</sup> Vuyisani Moss was a member of FSC government negotiating team. He is now a PhD candidate in the Town & Regional Planning at Wits University (Johannesburg, South Africa). He writes in his personal capacity.



Consumer inflation averaged 6.8% in 2003, 4.3% in 2004, 3.9% in 2005 and 4.6% in 2006. The Consumer Price Index (CPIX) inflation has been accelerating further in recent months but has now started stabilizing.

The household sector did not escape the unsteadiness as it was constrained by rising inflation, steady increases in interest rates combined with the implementation of the National Credit Act (NCA), which came into effect on June 1, 2007. As a result, the cost of servicing household debt increased to above 10% of disposable income, real disposable income growth slowed towards the end of 2007 and real consumption expenditure growth tapered off to lower levels. Nominal and real house price growth slowed down, largely because of the tightening of monetary policy that saw a cumulative 500 basis points of interest rate hikes from June 2006 to early December 2008. This negatively affected the affordability of housing. However, on the back of declining domestic inflation and weakening economic conditions, the Central Bank began its awaited series of interest rate cuts by reducing the repo rate by 50 basis points to 11.5% in December 2008 and by a further 100 basis points in February 2009. This led to commercial banks lowering their lending rates to a level of 14.0%.

In simple terms this means that if monthly repayments on a R400,000 mortgage loan over twenty years were R5,416 @15.5%, they now are R4,974 @14.0% (provided that the lender and the borrower agreed on a variable interest rate on the loan). This means that an interest rate reduction of 1.5% will save a homeowner nearly R500 a month. Furthermore, this also translates to potential borrowers whose creditworthiness assessment was marginally outside the required criterion who will now have their credit score boosted.

#### 4. Government Approach in Encouraging Banks to Serve the Market

The government found it necessary to induce financial institutions to invest in low-income housing as some have withdrawn due to a number of factors, such as non-payment, low profit margins, breakdown in law and order, etc. The government set up a number of institutions in this regard. The National Urban Reconstruction and Housing Agency (NURCHA) was established to provide guarantees to both bank and non-bank lenders as a means of lowering the risk of operating in this segment of the market. The National Housing Finance Corporation (NHFC) was set up as a whole-

sale funder to broaden the base for accessing credit. Its mandate was to provide wholesale funding to intermediaries that could, in turn, broaden the base for accessing credit in the low- and moderate-income segments of the market. Servcon Housing Solutions was formed to manage the properties in possession (PIPs) and non-performing loans (NPLs) portfolio (33,306 at the time). The Mortgage Indemnity Fund (MIF) was set up to encourage mortgage lenders to resume lending and the state was to cover the risk that banks would have incurred due to a breakdown in law and order in repossessing the properties.<sup>2</sup>

The interventions, however, did little to encourage banks to resume serving the market and the market was primarily left to non-bank lenders. NHFC and NURCHA became the key players in the market through the funding of intermediaries, contractors and developers, however, with time, NURCHA expanded its mandate by providing savings linked credit for housing (RDP) and infrastructure. Whilst the NHFC through its intermediaries innovatively came up with some interesting product mixes, suitable for low and moderate income earners, vis-à-vis, rent, rent-to-buy, small mortgages, instalment sale and housing micro-loans, etc. The NHFC has also recently expanded its mandate to broaden and deepen its impact in the low-to-medium-income housing market. It does this by offering finance directly to end users.

Realising the disinclination of banks to serve the market in spite of these interventions, the government introduced key policy instruments, the Home Loan and Mortgage Disclosure Act, and the Community Reinvestment Bill. The intention was now to compel banks to serve the market. Seeing that government is disconcerted, the financial sector reacted with alarm by offering a voluntarily initiative to the value of R42 billion aimed at providing housing finance to low-income households with stable income of between R1,500 per month to R7,500. As a result, the CR Bill was shelved, supposedly to give full effect to the MoU.

#### 5. The Financial Sector Charter

Signed by the Minister of Housing, Dr. Lindiwe Sisulu, the MD of the Banking Association of South Africa and the CEOs acting on behalf of the four leading commercial banks, the nature of the partnership was to facilitate the implementation of the housing and other relevant sections of the Financial Sector Charter (FSC), which enhances and contributes to the development of sustainable human settlements. In addition, the partnership was to facilitate the creation of pro-

perly functioning housing markets in previously under-served areas and to make home loan finance accessible to those previously denied access. In re-dressing the objectives outlined in the MoU to meet commitments and timeframes, the National Department of Housing, the Banking Association and the banks appointed negotiating teams who established Terms of Reference (ToR), and prepared reports on how outcomes will be achieved.

The banks confirmed that they would, as a first phase, originate R42 billion in housing finance by 31 December 2008. The banks have advised that they have already started originating in the target market and confirmed that as at 30 September 2005 they had already lent R16.7 billion to the target market. The banks are to submit reports to the Charter Council giving details of their respective engagements in the target market to enable the Council to confirm the level of lending that has taken place. Based on the success of this phase, agreement has been reached, as a second phase of this initiative subject to possible risk sharing mechanisms, to the creation of mechanisms to raise funds in the market through which the banks will increase their investment beyond the R42 billion in the target market.

##### 5.1 The Delivery Components of the FSC

The negotiating work teams from the government and the banks were deliberating on six components outlined in the ToR. They are explained in brief in the table below.

##### 5.2 The Financial Sector Charter Council (FSCC) Annual Review Report

The 2006 Second Annual Review of the Financial Sector Charter was released on October 3, 2007 by the Financial Sector Charter Council. The report provided an overview of the performance on all FSC components against the targets set by domestic and foreign banks, asset managers, short term insurers, life assures and other members of South Africa's financial sector. The Report catalogued the sector's progress relative to its starting point and its state of transformation at the end of 2006.

##### 5.2.1 The Report Update on Deliverables on Low-Income Housing Finance

With respect to low-income housing finance, the Report highlighted progress by financial sector players in meeting the origination target of R42 billion (of which R10 billion is subjective risk sharing mechanisms). This refers to housing for households having a stable income of R1,600 to R8,200. The range for 2005 was R1,600 to

<sup>2</sup> Moss, V. Evaluating Housing Finance Mechanisms in SA, cited in Pillay, A.



KEY COMPONENT	KEY DELIVERABLES
Consumer/Borrower Education and Related Capacity Building	Ensure that potential borrowers have access to a set of simple, well publicized criteria to assess their potential to qualify for a home loan; Conforms to the borrower education requirements of the New National Credit Act; Develop a capacity programme to ensure that the banks transform in engaging the historically disadvantaged segments.
Review of Finance-linked Subsidies for Individuals in Identified Target Markets	Develop a proposal to address the "affordability gap" in the current proposal between R3,500 and R7,001 household income p/m; Agree on an effective and efficient delivery mechanism.
Critical Product Innovations and Related Funding Mechanisms	Plan for product development, with involvement of key stakeholders in the housing finance value chain; Investigate an innovative, adaptable, systematic way of credit scoring and rewarding good account conduct by customers in the target sector
Risk Underpin for Collateral Deficiency	Identify aspects of incumbent risk that require government intervention, e.g. obtaining beneficial physical and economic possession; Interrogate the rationale and the need for a collateral deficiency solution for banks to provide lending products in previously underserved housing markets to expand the current lending envelope.
Immediate Impediments to Properly Functioning Housing Markets	Identify and propose alternatives to obstructive legislation and administrative processes with respect to housing and housing finance; Propose enhancements to effect sufficient registration and security of title on housing stock; Investigate and propose how significant new housing stock with value for money can be created.
Longer-Term Interventions to Facilitate Properly Functioning Housing Markets	Recommend steps to facilitate the development of residential property markets in the target sector; Examine, support and propose a mechanism for the effective allocation of government resources (subsidy) in supporting housing development; Examine, support and propose mechanisms for financing of alternative tenure options.

Source: FSC internal doc. Schematisation by author

R7,900. This income band is linked to the CPIX as of 1 January for the year in which results are being reported and increases annually accordingly.

The financial sector low-income housing financing target for 2008 is R31.8 billion. For the 2006 reporting period, low-income housing finance, loans and other forms of credit guarantees were to be households earning a combined income of between R1,600 to R8,200. Domestic banks accounted for 98% of the low-income housing financing with the international banks and the long-term insurers accounting for the remaining 2%. Of the total R25.7 billion in low-income housing financing, R13.7 billion (53.5%) was unallocated in terms of geographical distribution.

For the remaining R12 billion (46.5%), the bulk of the financing was in Gauteng followed by Kwa-Zulu Natal and the Western Cape. Low-income housing loans, specifically for those households with incomes of between R1,600 and R7,900, originated largely from the domestic banking sector in 2005 with funding being provided for housing units not exceeding R180,000.

### 5.2.2 Required Reporting Format

One of the reporting requirements for low-income housing was that institutions provide details on the breakdown of the loans according to household income band, loan type (mortgage or non-mortgage) and, if possible, loan purpose, e.g. whether the loans were

for new houses or were incremental loans. In addition to the online reporting exercise by the Charter Council, a separate directed survey was undertaken of the major banks and lending institutions for detailed breakdown as per these reporting guidelines. The results from this survey did not in any way contribute to the online reporting information originally submitted. Several of the domestic banks in particular reported difficulty in extracting the information in the required format. This is, however, set to change as lenders will be obliged to report according to these very guidelines to the National Credit Regulator in future. Currently, the banks are preparing to provide this detailed information in line with compliance with the National Credit Act.

In addition, the information received suggested that funding was typically pitched at those individuals' households earning at the upper-end of the housing band with lower-income households representing a disproportionately small number of borrowers. The major lending and borrowing trend was once again higher in the main metropolitan areas. The lack of detailed information, in particular that of total household income, limits the reliability of the reported figures.

During the 2005 reporting process, it was observed that individual rather than household income was one of the deciding criteria for granting low-income housing financing. In those instances where one household member earned at or near the R7,900 ceiling, other

earning household members would tip the household income over the low-income housing income range, thereby not qualifying for inclusion in the reported figures. Some of the major banks have reported figures for this reporting period based again on individual income. In the absence of detailed breakdowns, the extent to which this might have been repeated in 2006 across the different sectors cannot be confidently assessed.

### 5.3 The 2007 FSCC Annual Review Report

If the 2006 FSCC Annual Review Report was characterized by misreporting and lack of detailed data and information, then the 2007 FSCC recently released Report is no match. The low-income housing finance component of 2007 FSC report has absolutely no data and information required to assess and measure the impact of the FSC investment to the low-income housing market. It is a very scant report, shoddy than the 2006 Annual Report. When the Banking Association was asked by the author about this, the answer given was that the information is confidential. It is quite astonishing that the only necessary source of information that many stakeholders anticipate on the FSC annual updates hardly contains such crucial information. How else in the absence of an essential data and information report would the FSC's impact be determined? The only visible element of the Report is the ninety four percent (94%) of the R42 billion that it says was already attained. This leaves one with nothing to ana-

**Table 1 Value of loans originated (2004 to 2008 Q3)**

Period	Mortgage	Fully Guaranteed	Unsecured	Residential Development	Wholesale and Social	Total
2004	7 262	1 013	338	88	658	9 359
2005	6 045	1 083	552	530	828	9 037
2006	6 319	1 181	216	954	1 016	9 686
2007	5 775	795	1 221	1 211	906	9 908
2008Q1	966	136	373	98	71	1 643
2008Q2	772	174	396	287	65	1 694
2008Q3	692	146	305	799	38	1 980
<b>Total</b>	<b>27 831</b>	<b>4 527</b>	<b>3 401</b>	<b>3 965</b>	<b>3 583</b>	<b>43 307</b>

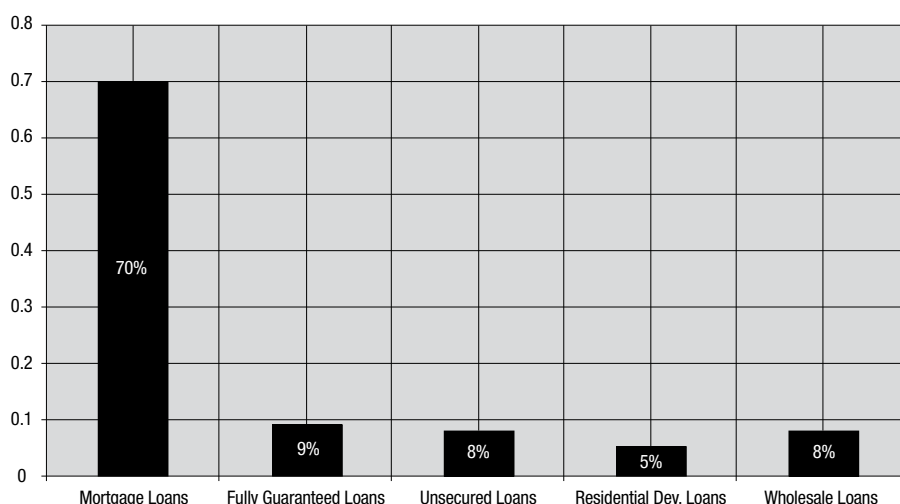
Source: BASA

**Table 2 Number of loans originated (2004 to 2008 Q3)**

Period	Mortgage	Fully Guaranteed	Unsecured	Residential Development	Wholesale	Total
2004	57 324	56 106	40 660	2	35 124	189 216
2005	53 159	58 787	51 720	39	45 974	209 679
2006	43 721	59 635	30 736	166	53 677	187 935
2007	55 287	38 212	94 265	88	33 023	220 875
2008Q1	9 235	3 438	26 783	35	1 234	40 725
2008Q2	6 855	6 355	29 878	27	2 321	45 436
2008Q3	6 030	5 515	22 522	16	3 766	37 849
<b>Total</b>	<b>231 611</b>	<b>228 048</b>	<b>296 564</b>	<b>373</b>	<b>175 118</b>	<b>931 714</b>

Source: BASA

**Figure 1 Percentage Distribution of Targeted Investment**



lyse but to look at the quarterly figures released by the Banking Association of South Africa in order to get a sense and a much clearer view of the FSC's impact.

### 5.3.1 Quantifying the FSC's Impact from 2004 to 2008 (Q3 Figures)

The reflections from the Tables above suggest that as of the end of September 2008, banks have in total disbursed R43 billion - just R1 billion over the R42 billion of targeted investment - R27 billion of which is allocated to mortgage origination and just over R4 billion to pension or provident fund backed

loans. By any benchmark, this could be viewed as a remarkable achievement.

In brief, Tables 1 and 2 imply from the unaudited figures of the Banking Association of South Africa that:

- Almost R28 billion of mortgages have been originated corresponding to over 230,000 loans;
- Just over R4.5 billion of provident backed loans (PBLs) have been originated corresponding to over 228,000 loans;
- Just over R3 billion has been originated in unsecured housing funding loans corresponding to almost 300,000 loans;
- Just over R3 billion has been allocated to wholesale loans extending to just over 175,000 loans;
- Nearly R4 billion has been allocated to residential development, extending to just over 373,000 loans; and
- Cumulatively, this means just over R43 billion has been originated to finance just over 931,000 loans.

## 6. How Banks Assert to be Serving the Market in the Absence of Appropriate Housing Stock

Availability of affordable stock in areas close to employment is generally insufficient. Lack of appropriate suitable stock remains the biggest constraint in this market. Developers focus on more lucrative, higher-value properties for high-net worth borrowers. The national housing shortage in the R2,500-8,600 household income bracket is calculated in excess of 600,000 units (SA Housing Foundation, November 2007). Non-availability of suitable stock for the low-income housing market remains a big challenge. According to research commissioned recently by BASA, it shows that South Africa needs to build at least 135,000 new houses per annum to start closing that gap or to curtail the backlog. Figures from Statistics South Africa show that less than 25,000 affordable houses (classified as houses bigger than 30m<sup>2</sup> but smaller than 80m<sup>2</sup>) were built in 2007.

For that reason, it is imperative to point out the reflections in the 2006 Report relative to the current figures. This provides us with a solid background on how far the FSC initiative has come and to quantify margins from inception to the last quarter of 2008. Consequently, the analysis of both reports provides significant impetus in measuring the actual impact of the FSC. Moving forward, this will assist us to inform if there is any substantial scope of work needed to be reviewed in terms of the FSC initiative.

The detailed 2006 FSCC Annual Report on the extent of impact as outlined is reflective of misinformation, qualitatively and quantitatively. The Report highlighted progress made by financial sector players in meeting the origination target of R42 billion and R10 billion, which is subjective to the risk sharing mechanism by 31 December 2008. The total targeted investment towards low-income housing according to the report was valued at R25.7 billion.

The immediately identifiable inadequacies from the FSCC Review Report are explained as follows:

- The Report did not attempt to explain the breakdown in investment in terms of the actual income segment of beneficiaries and mortgage loan size. The interest of this paper stems from the analysis of Statistics South Africa data which shows that 1.9 million households earn from R0-1600 and that those earning from R1601-12000 constitute a market size of approximately 800,000, and can only qualify for an mortgage amount of R45,000-300,000, typical of 36-42m<sup>2</sup> house. The BASA reports have consistently mentioned that lack of appropriate stock remains a challenge especially for houses priced below R200,000, needless to mention the quandary of those earning R1501-3500 who also fall within the FSC target market but who are also eligible for capital subsidies. BASA itself described the lack of appropriate stock and suitable land as "the biggest single stumbling block in the process of low-cost housing".
- Another factor that this article uncovers is the issue of misreporting. For the banks to have reported difficulty in extracting the information in the required format is unjustifiable. Further, the Report mentions that this is set to change as lenders will be obliged to follow the National Credit Regulator (NCR) guidelines. This, unfortunately, has not changed but rather the quality of the Report became inferior and very shallow compared to the last report.
- Judging by Table 3 on the size of the FSC market, it would therefore be unmerited to presume that the FSC has made any impact in reducing the housing backlog by making credit accessible and affordable to low-income households. Current data from the Finscope suggests that only 3% of the FSC market (total 41%) have a mortgage.
- Further, the Finscope data shows that about 30% of households in the FSC market are poor (often go without cash, food or without medicine). This figure is astounding and clearly demonstrates that access to housing finance may not necessarily be a priority for the low-income segment of the market. This

**Table 3 The FSC Household Monthly Income band + Size of Market as Applicable Each Year**

YEAR	FSC MARKET SIZE	PERCENTAGE OF ADULTS	INCOME BANDS FROM FSC
2003	9,149,620	34%	R1500, R7500
2004	8,938,811	31%	R1500, R7500
2005	12,098,557	39%	R1600, R7900
2006	12,783,809	41%	R1600, R8200
2007	10,765,943	34%	R1700, R8600

Source: Eighty 20

is in spite of banks maintaining to be serving low-income households.

- Moreover, how do banks affirm to be making credit affordable and accessible whilst requiring low-income potential borrowers to provide upfront a 15-20% deposit?
- How do they expect borrowers to have such deposits? This is a market whose disposable income has been severely eroded by rising inflation (which only now appears to starting to slowdown) food prices, instable fuel prices and with apparently no liquid savings.
- In addition, how do banks claim to service the low-income segment without any income breakdown of their target investment reported in the Annual or any other form of reports? This implies that as banks require large deposits (15-20%) access to credit for those who are not already homeowners is constrained even further.
- Furthermore, Table 3 also shows that the FSC market has grown substantially. This describes how limited banks' reported impact has been in spite of the R43 billion disbursed to low-income housing. If R43 billion can statistically reflect no impact whatsoever, that begs the question as to where the actual investments have gone?
- It is important to demonstrate that data suggests that the supply of affordable housing units delivered annually in the sub-R200,000 price range was only about 19,000 units. This is against an estimated 132,000 units that the BASA estimated to be needed to reduce the backlog by 60% in the next four years.

## 7. Theoretical Framework Underpinned by the FSC Initiative

To demonstrate clearly and to theoretically substantiate the argument, it is considerably important to review the assumptions and propositions of a theory whose suppositions are quite appropriate when applied in this article and ap-

pear to be embedded in the FSC initiative. The theory is free *market economics theory*.

### 7.1 The Market Economics Theory

The market economics theory is the approach that is defined as an economy controlled by market forces rather than by government action. Nazario (2006) postulates that in a market driven economy, markets are doing what they do best. The model is characterized by free operation and unregulated market forces. In view of the market oriented approach the demand for and supply of goods and services is influenced by market forces. This determines that a consumer receives what he pays for with his money. According to Lea (1999), a market driven approach is found in the USA mostly where the demand for housing and housing improvements are driven by a private sector market.

The provision of housing has been led with very little interference by government and supports the notion that the markets can create the quality and quantity of housing consumers need based on what they can afford (Mcguire, 1991). The philosophical assumptions of this theory in this instance are deceptive. The free flow of market forces for public goods and services in a developing economy, like South Africa, allows markets to operate as they wish are undesirable. Thus, government intervention is essential to address such impediments.

The fact that the FSC initiative was viewed by some, including the author of this paper, as a response to counter a government proposed policy instrument in the form of the CR Bill suggests that the private sector, and banks in particular, cannot genuinely and adequately serve low-income housing market in a very transparent manner. Therefore, it could be well argued that in reality the application of this model as it appears in the case of FSC is flawed. In well-functioning markets, private markets are much more the consequences than the causes of economic development.

The free market economy approach illustrates that institutions cannot voluntarily generate the

innovative capabilities that underpin economic development and transformation needed to make it possible to have an emergence of well functioning low-income housing markets. For this to happen, policy instruments, legislative frameworks and effective regulatory mechanisms are fundamental to deal with current challenges of banks' reluctance to invest in low-income housing. Government in turn has to ensure that political risks and a lack of law and order are countered in order to make the environment in which banks are expected to operate more conducive. This could contribute immensely to the housing development challenges that the market is facing.

## 8. Recommendations and Conclusion

The economic downturn and collapse of the credit and mortgage markets has eroded the effectiveness of the low-income housing market, making it difficult for banks and other lenders to finance low-income loans. There is a considerable need for alternative approaches to stimulate the low-income housing market. There appears to be a significant necessity to accelerate and enhance the scale of housing delivery, especially among the low- to middle-income households in order to counter the acute housing shortage. Products that are able to meet market requirements have been originated to address the acute housing shortage.

Information coming out from the FSC target deliverables do not seem to stimulate the market judging by the increase in the size of the market and the shrinkage in supply. Mainstream banks have become more risk adverse in spite of no known losses reported in this segment. Their stringent credit granting criteria and the decreased loan-to-value (LTV) ratio would delay market stimulation. Despite the additional funding of R3.7 billion to low-income housing as announced in the 2009/10 budget speech, the government is already facing a monumental task of housing 1.9 million households whose incomes per month are in the range from R0-R1600. The situation is no better for income brackets up to R 7,000. Even the 19.5% increase in the 2008/09 financial year was just a drop in the ocean. Government institutions too have very thin balance sheets to scale-up delivery compared to private sector capital that can be leveraged.

There appears to be an essential requirement to look at models of both advanced and emerging markets in terms addressing housing finance

challenges. Some of these may include but are not limited to:

### (i) Tax Credits or Development Funds

■ Lenders and low-income housing developers in particular should be able to tap into a multitude of funding mechanisms such as grants and low-interest loans as well as low-income tax credits and construction costs in order to build residential units that would be affordable. These are common in some USA states where different funding sources can be pooled together to offset construction costs.

### (ii) CRA Linked Policy

■ Government intervention in terms of deliberate policies and measures to attract and enhance private sector investments in low-income housing is essential in order to meet current demand. The CR Bill needs to be resuscitated. Such investments may also be treated as community development loans and qualify a lender for a positive CRA<sup>3</sup> like policy consideration, which puts a particular lender in a favourable position for government contracts or incentives.

### (iii) Promoting Public-Private Partnerships (PPP)

Public-private partnerships can be a catalyst to the creation of robust housing finance systems in ensuring a broader outreach. Government institutions need to partner with banks to share the risks and even be willing, where necessary, to assume some of the risks associated with low-income housing finance. In addition, one of the proven forms of a PPP framework could be through the creation of a Mortgage Liquidity Facility (MLF). The MLF can be used as a conduit or SPV to pursue affordable housing objectives without necessarily distorting the objectives of market based pricing. MLFs could have a significant catalytic effect on the growth of providing finance for affordable housing, as has been the case in Malaysia and Jordan.

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<sup>3</sup> The CR Bill advocates- meeting the needs of low- and medium-income level borrowers, housing finance institutions are required amongst other things the following: (a) Invite and encourage home loan applications from low- and medium-income borrowers through positive marketing and advertising; (b) Deal with borrowers in a transparent and equitable manner during all stages of the home loan application process; (c) Encourage savings and provide meaningful incentives to those who save; and (d) Ensure that all housing finance institutions that provide home loans should adequately meet the aspirations of low- and medium-income level borrowers.











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