A Glass Half Full/Half Empty: The "Internationalisation" of Mortgage Insurance

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Like other similar articles, Anna Whittingham's article (see page 20) proposes a bright future for mortgage insurance ("MI") as a form of credit risk transfer. Emphasis on the "future" is apposite, because MI currently occupies a peripheral role in the world's leading housing finance systems outside its homelands of the United States, Canada and Australia. This article will discuss MI's prospects as a form of credit risk transfer and concludes that MI has much to offer in terms of specialist assistance in loss avoidance and risk spreading based on real experience, not simply theoretical justification. However, the article also concludes that MI as it is offered currently faces substantial barriers to widespread acceptance, including:

- *Perception that MI does not pay its claims* among mortgage market stakeholders in key development markets;
- *Persistence of low credit loss environments* discouraging risk transfer at a commercially acceptable price;
- *Insistence on a comprehensive institutional design* based on past successes rather than future needs;
- *Competing product alternatives* more willing to offer credit protection on a cyclical basis; and
- *Regulatory barriers* based on existing custom and bank supervisory suspicion of insurance products.

MI fundamentals

At its simplest and as explained in the Whittingham article in this issue, MI is a form of insurance offering credit protection on residential mortgages. Typically provided on high loan-to-value ("LTV") loans[2], all forms of MI commit to indemnify the policyholder or the beneficiary for the difference between the amount owed on a mortgage loan and the amount collected once the mortgage property is recovered and sold due to borrower default – up to a contractually defined limit.

In some senses, past is prologue for MI, which is fundamentally a credit risk management tool that combines a process for reducing loss with an insurance product for transferring the reduced risk portion. Despite considerable attention paid to how MI can be harmonised with Basel II, the International Financial Reporting Standards and other recent financial regulatory initiatives, it is worth remembering that MI predated the Basel Accord and has been used in residential mortgage lending for more than a hundred years (and the use of guarantees or sureties in similar contexts has an even longer history). Thus, MI needs to be seen in two dimensions – first, in terms of its market-based uses, and then in terms of what supervisory incentives have been developed to encourage its use.

First, its uses. Broadly, MI serves as an alternative to outright credit rationing by providing a form of additional security and limiting the extent to which lenders are exposed to risk of loss from defaults by their customers[3]. Addressing traditional bank supervisory concerns regarding asset price volatility specifically regarding residential mortgages and the greater likelihood of default by borrowers with little invested in a property, MI provides a market-tested alternative to the "substantial margin of additional security" required by bank supervisors and has been used by financial institution credit risk committees when considering business plans for lending to customers with greater credit risk than they might otherwise consider; developing new products; or broadening the availability of high LTV loans. Additionally, because MI has been offered on a standardised portfolio basis by experienced, highly solvent counterparties, rating agencies and investors value MI as credit enhancement in secondary market transactions such as securitisations or portfolio loan sales. As such, the presence of MI adds stability to the prime lending market and facilitates lending to the under-served and sub-prime market segments.

[1] The opinions expressed in the Article are his own, and in part are intended to update earlier HFI contributions such as David Liu, "Exporting Mortgage Insurance Beyond the United States," *Housing Finance International*, Vol. XIV, No. 4 (June 2000).

[2] As the term suggests, LTV refers to the ratio of borrowed funds to the property "value", whether measured on an appraised, market or other supervisory definition. The "risk frontier" between less and more risky residential mortgage loans will vary by market, but 80% represents a general standard in advanced mortgage markets, and 50-60% in less advanced markets.

[3] See Buckley et al, *Comparing Mortgage Credit Policies: An Options Based Approach*, World Bank Research Working Paper 3047 (May 2003).

By its terms, MI transfers credit risk on mortgages to regulated third parties outside the banking industry that are mainly specialists in higher risk lending and the analysis of those risks[4]. For lenders, this transfer of risk improves asset quality, helps provide liquidity to the market and encourages/facilitates more participation due to:

- limitation of lender losses;
- timely payment of claims;
- more predictable earnings profiles; and
- more efficient underwriting process where protection provider criteria are met.

Increased liquidity creates competition and hence better interest rates for borrowers.

The benefits of MI, i.e., improved market liquidity, greater social inclusion, more robust underwriting processes, improved management information and transfer of risk outside the banking sector support the supervisory aim of maintaining a strong, well controlled mortgage lending market.

Second, incentives for use[5]. Regulatory capital relief for lenders using MI was made available in certain markets, notwithstanding the fact that the original Basel Accord did not consider the use of MI directly for several reasons. Because the Basel Committee could not agree on a uniform measure of LTV and because residential mortgage assets were considered "local" compared to other types of banking activities for "internationally active" institutions, the Accord established only a minimum risk weight for residential mortgages and committed any further action to national supervisory discretion. Additionally, as noted above, the Basel Accord restricted the scope of instruments for credit risk transfer to traditional inter-bank guarantees and counterparties to banks and securities firms[6].

Countries such as the United States or Australia that wished to acknowledge a role for MI did so in two steps:

- *First*, the additional risk of higher LTV loans was reflected in a higher risk weight for those loans.
- *Second*, the use of MI on these higher risk loans was understood to provide protection against the additional risk (both in terms of additional underwriting rigor and process diligence and risk transfer), and was allowed to eliminate the additional risk charge.

Other countries such as Canada approached the issue even more simply. Provisions in banking and trust company legislation predating the Basel Accord set a LTV threshold (75%) and simply required use of MI for loans made above the threshold. Italy borrowed aspects of both approaches[7].

Unsurprisingly, incentives work better than no incentives, and not all incentives are created equal. In the case of the US, the legislative decision taken in 1970 to require Fannie Mae and Freddie Mac to have credit enhancement on loans exceeding 80% LTV has proved to be substantially more important as a source of business opportunity for mortgage insurers than subsequent Basel Accord-inspired regulatory capital incentives – but even then so-called "80/10/10" structured loans have bled considerable volume away from mortgage insurers[8].

Similarly, Canada's decision in 1954 to require mortgage insurance use by federally regulated lenders continues to spur volumes, minimise the underwriting risks of adverse selection and sustains a measure of cross-subsidisation between Canadian borrowers, but the real source of value for lenders is the Government's willingness to provide back-stop credit guarantees to the mortgage insurers that dramatically reduce regulatory capital charges for lenders (90-100%)[9].

*Thus, so long as MI was (and is) seen as a tool for effectively reducing risk to lenders and investors, creating new opportunities for borrowers **and** also benefiting from incentives stimulating its use, it flourished (and flourishes).*

[4] Interestingly, MI as a form of cross-sectoral credit risk transfer has received little or no attention by financial regulators, especially compared with risk transfer via derivatives and capital market instruments, even though the cross-sectoral interaction is more direct and perhaps more valuable. *See, e.g.,* The Joint Forum, *Credit Risk Transfer* (BIS: March 2005).

[5] Roger Blood has covered this subject in a number of publications and presentations, including an article published in Housing Finance International. *See, for example, e.g.,* Blood, "Mortgage Default Insurance: Credit Enhancement for Home-ownership," *Housing Finance International*, Vol. XVI, No. 1 (Sept. 2001).

[6] *See generally* Linda Allen, "The Basel Capital Accords and International Mortgage Markets: A Survey of the Literature," *Financial Markets, Institutions & Instruments*, Vol. 13, Issue 2, Page 41 (May 2004).

[7] Italy uses an approach midway between the US and Canadian approaches – mortgage loans without credit protection are assessed additional capital because they are not considered "residential mortgage loans", but the additional capital charge is eliminated (and more favourable treatment for the recovery of the mortgaged collateral is given) when officially approved forms of credit protection such as MI are used.

[8] "80/10/10" loans are constructed to avoid the use of MI (80% first mortgage, 10% borrower down payment and a 10% second mortgage).

[9] Because the Canada Mortgage & Housing Corporation is treated as a sovereign under Basel Accord rules, CMHC-insured mortgages are considered essentially riskless obligations meriting a zero risk weighting. Because Government policymakers wished to introduce some measure of competition, they provided GE (now Genworth), CMHC's "private" competitor, with a 90% sovereign guarantee, and presumably would have to extend similar arrangements to other private competitors to spur additional competition. Indeed, although there has been some scholarly work done comparing US and Canadian housing finance systems, it remains unexplained why mortgage insurers in the US have competed successfully against the Federal Housing Administration's Mutual Mortgage Insurance Fund, also a sovereign credit guarantor, but have been unable to in Canada. Likely the answer involves the role of Fannie Mae and Freddie Mac and the scale and concentration differences between the two markets.

Challenge No. 1: Is MI a reliable source of credit risk transfer?

The description of MI in its existing markets sounds appealing. Certainly there was (and is) consumer resentment over "unnecessary" coverage, lender indifference to credit risk, investor suspicion over potential downgrade risk and supervisory conservatism regarding new forms of credit risk transfer – but MI performs an important role of managing residential mortgage credit risk without eliminating it entirely.

So why hasn't MI taken root quickly in new markets outside its traditional strongholds? In part, slower progress results from the simple fact that other alternatives already appear to be working fine within particular markets[10]. And in part, MI has been successful, since use of MI (or comparable mortgage guarantees) is being suggested routinely by multilateral development banks and aid agencies in emerging market housing finance systems as disparate as Mexico, India, Kazakhstan, Lithuania, Estonia and the Dominican Republic. In these markets, the desire to increase home-ownership or improve housing stock requires additional assurance to creditors regarding the creditworthiness of borrowers, and the desire to attract non-local sources of funds through bonds issued by secondary market facilities also stimulates interest in MI.

However, promising as those markets are in terms of global housing demand, they are small compared to more developed housing markets currently, which is where MI as a commercial insurance product needs to take root in order to consider its expansion efforts successful. In these markets mortgage insurers must meet the needs of sophisticated lenders and sceptical banking supervisors better than competing alternatives, expressed in the form of five significant challenges.

The first challenge is one of perception regarding its reliability as a means of risk transfer. MI has experienced periodic housing market downturns and survived with its reputation intact in its home markets in the US, Canada and Australia – individual mortgage insurers faced financial difficulties in high claim environments and were forced to cease doing business or merge with stronger competitors, but neither lenders nor supervisors have doubted the overall value of MI to their respective housing finance systems.

MI's difficulty outside its core markets occurs in part as a result of the sharp housing market downturn experienced by the UK in the early 1990s. Prior to the downturn, MI (known as "mortgage indemnity guaranty", or "MIG" in UK insurance parlance) had been offered for years with favourable loss experience even through periodic housing market credit cycles. Indeed, given the "back to the future" reliance by actuaries on historical loss data, there was no reason to suspect that massive unanticipated losses were in the offing.

But they were. As in any upward phase of a credit cycle, good credit performance encouraged progressive extension of more credit to more borrowers, so that individuals borrowing 100% of the purchase price (on a market value basis) became more common. Volumes were strong, encouraging operational accommodations in terms of underwriting, risk reporting and loan administration, and also encouraging lenders to demand increasingly larger commissions for the placement of MIG on its own behalf. Any delinquencies were sold into a rising market, minimising net losses. Interestingly, there is no reliable account of MIG performance during the downturn, which explains why the conventional wisdom emerged in a way that has been damaging to the future prospects of MI in the UK, Europe's largest and most innovative housing market[11]. Prices declined, delinquencies and negative equity mounted and problems emerged – in the form of insuring agreements that never had been finalised, delinquent risk insured on a pre-agreed delegated basis but ineligible based on pre-agreed underwriting criteria, commission income taken to income by lenders and not held back on a contingent basis in reserve against loan performance, and incomplete claims submissions. In short, the downturn reminded everybody of the complementary roles of insurer and insured, of correlative rights and obligations and the sheer amount of money at stake.

However, the MIG providers paid – a lot – around half of the £10 billion in losses suffered by lenders in the downturn. Looking back, many have an incentive to forget or distort, but it remains somewhat mysterious how the conventional wisdom emerged that MIG providers had fallen at the fence (perhaps at some of the later fences, but not the first one). *For all the retrospective grumbling about non-payment of claims, lenders were paid billions of pounds in indemnities that otherwise would have sorely tested the UK housing finance system, and only a fraction of the indemnities were recovered in subrogation actions brought by insurers against borrowers.* ***In other words, the MIG product worked reasonably well considering the unanticipated scale of the downturn.*** Of course, claimants needed to satisfy the terms of the insuring agreement (not always easy given the era of good feeling that preceded the downturn), and borrowers probably never really

[10] France is perhaps the best example with its *prêt immobilier cautionne* loans dominated by the Credit Logement facility. See Stone and Zissu, "Le Pret Immobilier Cautionne: An Innovative Substitute for the French Mortgage," *Journal of Housing Research*, Vol. 3, No. 2.

[11] Peter Akers provides a short, even-handed account. See Akers, Sinister Risks (Presented to the Staple Inn Actuarial Society on 12 October 1999), pp. 12-13.

understood the purpose of MIG (which was not intended to protect them or allow a clean break from their mortgage debt)[12].

Bank and building society supervisors patched the wounds and moved on, encouraging the creation and use of affiliated captive insurance companies located in "light touch" tax and regulatory jurisdictions. Insurance intermediaries shifted attention from procuring cover to managing captives and arranging reinsurance cover, and insurers isolated and wound down MI operations. The psychological scars were deep and long-lasting – other mortgage market participants, and particularly lenders, were given credit for learning from the experience and improving systems and processes as a result, but a large question mark still hangs over the mortgage insurers (even those that did not participate in the UK market during the period!).

Perception hardens into reality sometimes, and timing is important. As the UK market melted down, the US mortgage insurers looking across the Atlantic hesitated. Insurance is an unsentimental business, where plans to recoup losses as terms tighten and prices rise are constantly being frustrated by new market capacity unburdened by past losses. In the case of MI, however, this new commercial capacity did not arrive quickly enough or initially offer anything demonstrably different. Captives already had replaced commercial insurers as the principal means of risk transfer (albeit internal risk transfer between affiliates, but using external reinsurance capacity to manage risk exposures and lessons learned regarding the importance of process rigor, enforceable terms and conditions and pricing now adjusted to reflect the possibility of a severe downturn in the future).

Preoccupied with their own credit events, US mortgage insurers held back and missed a very good chance of introducing MI as an alternative way of thinking about credit risk transfer.

Challenge No. 2: Who needs credit protection in a low credit loss market?

With perceptions hardening in the wrong form, the second challenge relates to market timing. Insurance experts refer to MI as a "long-tail" risk. That is, the mortgage insurer accepts the bargain of protecting the creditor against loss for a long period of time (generally 10 years or the life of the loan) without the ability to re-price the protection to account for deteriorating market conditions. For this reason, mortgage insurers have a keen interest in mortgage credit cycles. Entering new markets at the bottom of the credit cycle allows the mortgage insurer to benefit from increasing transaction volumes and housing prices and minimises the likelihood of unfavourable underwriting results.

Although local European credit markets did (and do) not move in complete unison, many markets experienced sharp downturns similar to the UK's at the same time or shortly after. Today's lenders, supervisors and rating agencies feign forgetfulness, but much of the Nordic region experienced a real credit crisis, and France, Spain and Italy also experienced downturns (less visible given the less developed nature of their housing finance systems, particularly regarding high LTV lending). Germany's reunification-induced housing investment boom sustained its market a bit longer, but it followed its European neighbours. In short, every one of the big European mortgage markets had some nervousness regarding banking assets that were supposedly "as safe as houses".

However, at least in Western Europe, mortgage insurers appear to have entered markets too late into the recovery phase to reshape fundamental attitudes regarding credit risk management during this market cycle. Whether GE (now Genworth) in 2001, or AIG United Guaranty and PMI in 2003-4, the mortgage insurers entered into markets that were five years or more into their credit upswing. At this phase, credit institutions either are new or are experiencing one of the recurrent "new era" thought waves that sustain credit cycles[13]. Credit origination processes adopted in the wake of the prior downturn have been institutionalised and "debugged", credit losses are low even as volumes mount[14] and the principal strategic concerns in the residential mortgage business appear to involve distribution (how to sell more faster) than credit risk[15]. Indeed, the prospect of monetary union in

[12] Insurance law can be a trap for the unwary, because policyholders are expected to comply with the terms of the policy in order to have a claim settled – not in a bureaucratic "forms in triplicate" sense, but in the fuller sense of disclosing material information in the underwriting process, apprising the insurer of loan performance status and cooperating with the insurer to manage the non-performing loan to minimise losses. Failure to do these results in denied or reduced claims, but other forms of credit guarantee are no different. With borrowers, arguably MIG belongs to "the decade of mis-selling" – along with personal pension schemes, endowment mortgages and other financial instruments that seemed too good to be true, and were. A guarantee is a promise to pay on behalf of another, with the understanding that the guarantor will be repaid as well. Indeed, most guarantee or surety agreements require a specific "reimbursement agreement", the insurance equivalent of which is a right of subrogation. Borrowers were not told this, of course, so the mortgage insurer came off as the villain of the piece when they attempted to recover amounts paid on behalf of the borrower using conventional insurance law principles.

[13] Robert Schiller finds housing markets susceptible to the same psychological "irrational exuberance" that periodically grips the capital markets. in the updated version of his now famous book. *See* R. Schiller, *Irrational Exuberance* (2nd ed. 2005) (esp. chapter 2 and Part Two). For mortgage insurers, "exuberance" creates over-confident lenders and borrowers resentful of having to pay for the additional risk protection provided by MI.

[14] Residential mortgage performance correlates strongly with overall macroeconomic performance, which keeps defaults low in a recovering economy, and credit losses take some time to develop – only when loans "season" for several years do problems (first delinquencies and then defaults) appear.

[15] Mercer Oliver Wyman has made a spirited case that risk management will matter once again in the future within a lending environment characterised by substantial overcapacity, surplus capital generated by Basel II and higher risk consumer demand for product innovation. See Mercer Oliver Wyman, *Risk and Funding in European Residential Mortgages – responding to changes in mortgage demand* (MITA Occasional Paper: April 2005).

Continental Europe, formal independence for the Bank of England in the UK and persistent global deflationary pressures also reduced nominal interest rates, enlarging the market and pushing through traditional concerns about credit rationing.

And what were the mortgage insurers offering when they entered new markets? Sensibly, in terms of institutional competencies, mortgage insurers offered the credit insurance equivalent of Coke, Big Macs, Gap jeans and Harley-Davidsons – that is, an exportable version of a US-derived MI product, in many cases relying on US delinquency data and pricing assumptions[16]. The product offered to open doors that were already open using underwriting criteria that frequently were more conservative than their prospective customers on assets that already were considered among the safest parts of the balance sheet. By itself, credit conservatism is not bad when based on thoughtful assessment of all available data, but such conservatism is not likely to win many customers in the ascending phase of a mortgage credit cycle.

Have any lessons been learned yet in this long period of low mortgage credit losses? Well, yes and no. *In terms of yes, the specialist ethic of mortgage insurers has caused them to redouble efforts to retool product and service offerings to meet the needs of relevant mortgage market stakeholders.* Rather than content themselves with a simple risk transfer role, mortgage insurers are attempting to extend their scope of influence within their lender customers to finding borrowers, improving risk selection, creating new mortgage products, streamlining underwriting and monitoring processes and introducing new loan workout and loss mitigation concepts and techniques. And, unlike a public agency that survives in the face of falling demand, profit-seeking mortgage insurers are under considerable pressure to convert possibilities into solid sources of business.

In terms of no, much of this effort has not connected meaningfully with lenders yet. With volumes rising, customers find lenders rather than vice versa, new mortgage products are copied easily, streamlined underwriting consists of saying yes more quickly and loss mitigation remains a theoretical discussion. Consequently, a falling cost of risk results in price competition, looser terms and conditions and generally the type of pro-cyclical competitive behaviour that mortgage insurers are supposed to resist.

Of course, these issues are derivative of similar pressures faced by lenders, which is why credit cycles have not disappeared – and will not disappear[17]. However, perhaps the forbidding competitive environment unintentionally contains a silver lining. Lender-retained risk, even in the face of declining prices, means less low priced, long-tail business vulnerable to a housing market downturn held on the books of the mortgage insurers. That fact and the willingness of mortgage insurers to explore how their competencies might help their customers position them well for the future.

Challenge No. 3: Does MI need special regulation to work?

Unlike perceptions of unreliability or the persistent asset price boom, the third challenge arguably is self-inflicted by mortgage insurers. Regulatory and supervisory fashions come and go, but certain underlying consistencies remain. The dilemma of mortgage insurers intent on building substantial businesses outside traditional MI markets has been how to best package the considerable specialist knowledge they have accumulated over the years but still respond to changing commercial and supervisory needs. *However, the insistence of mortgage insurers on exporting the specialist "mono-line" entity form and its attendant regulatory apparatus has slowed broad acceptance of MI.*

As a regulated industry (insurance) serving a largely regulated customer base (banks, building societies and their equivalents), regulatory policy always has been important contested terrain for mortgage insurers. Particularly within the European Union[18], there has been a struggle between local custom and harmonisation, and an effort to encourage freer circulation of goods, services, labour and capital. For a newcomer, the struggle can be doubly frustrating, because local custom finds a way to survive (often through the interstices of implementation in the directive process) and introducing new concepts intended to apply broadly across the European Union needs substantial momentum to succeed.

Specialist "mono-line" insurance regulation often has been urged by MI providers for a mix of theoretical and practical reasons. In terms of theory, the "mono-line" (specialising in only one type of activity) concept has substantial commercial and prudential merit. Commercially, specialists generally outperform non-specialists

[16] Pricing MI is more like pricing earthquake insurance than motor insurance. That is, the mortgage insurer knows where the "economic fault lines" are and the major factors that relate to borrower default (unemployment, disability, death, divorce etc), but how these factors will combine with more general economic developments requires more art than science. When prospective customers say that past downturns will not be repeated, they are probably right – future downturns will involve new combinations of events occurring at relatively unpredictable times, and this uncertainty needs to be anticipated by the mortgage insurer. This is a tough message to deliver in a low loss credit environment.

[17] The Economist has been the most forceful critic of the run up in asset values, noting that ***"[m]easured by the increase in asset values over the past five years, the global housing boom is the biggest financial bubble in history."*** See, e.g., "After the Fall," The Economist (June 18th-24th 2005) (emphasis supplied).

[18] Because it is impossible within the scope of this Article to summarise the variety of global housing finance systems, I have used the European Union as the principal example of regulatory policy in advanced housing finance systems outside the traditional MI markets in the US, Canada and Australia. Japan, the world's 2nd largest mortgage market with its system of affiliated mortgage guarantee companies, terribly performing "housing loan guaranty insurance" and long slide of property price following the 1980s property bubble, deserves separate treatment. See, e.g., Koh et al, "Bank lending and real estate in Asia: market optimism and asset bubbles," *Journal of Asian Economics* 15 (2005) 1103-1118.

because expertise is concentrated, processes are streamlined and attention is undiluted, particularly in areas of activity where demand is expected to continue to grow. That is why mono-line credit card banks are common, and even why so-called "universal banks" have continued to run mortgage operations out of specialist units. A similar logic underpins the MI mono-line approach: mortgage lending is a large enough area of activity (usually the largest component of household debt, and one of the largest categories of assets held on balance sheet by banks), and high LTV lending is a large enough area of activity (usually 25-40% of first-time home purchases) to permit specialisation over an entire market.

Prudentially, mono-lines represent the adage of putting all your eggs in one basket and watching that basket carefully. In effect a supervisory division of labour theory, the "specialist principle" has a solid lineage in bank and insurance regulation. Within European financial regulation, mortgage banks and building societies (whether of the UK or German variety) have allowed risk to be isolated and credit to be allocated via special purpose institutions. Prudential restrictions applied to mortgage banks gave investors the confidence to invest in long-term bonds issued by mortgage banks, which in turn allowed supervisory concerns about commercial banking exposure to illiquid mortgage obligations and asset/liability mismatches to be allayed. Similar restrictions allowed building societies to concentrate on the role of mobilising savings and increasing home-ownership, leaving to commercial banks the task of ensuring stability in the payment system, providing credit to corporate and other commercial lenders, participating in shorter term inter-bank lending and supplying wholesale banking services. *However, the trend toward consolidated financial supervision has eroded the "specialist principle" significantly, with the new emphasis being placed more on function than form – where more attention is paid to supervising the activity rather than creating special institutions and supervising those*[19]*. By itself, this trend poses a difficult challenge to the recognition of mono-line MI.*

Experience matters as well. Different regulatory traditions within the insurance industry between the US and Europe complicate the case for mono-line MI. Within the US, historical experience with MI prior to the US Great Depression of the 1930s resembled the UK – MI was combined with other forms of non-life insurance, principally title insurance, and other forms of real estate-related activity. When the Depression occurred, all companies involved in the MI business went insolvent (as did many other businesses). Since New York was the centre of the MI industry, the NY Insurance Department conducted an inquiry. The ensuing report, known as the "Alger Report", criticised many of the prevailing market practices and raised serious doubts about the commercial viability of MI[20].

Thus, in order to rebuild confidence in residential mortgage lending, the national government created the Mutual Mortgage Insurance Fund of the Federal Housing Administration. Organised (perhaps unintentionally) as a mono-line, the FHA-MMIF accomplished its task well enough by the 1950s for lenders to be able to worry less about credit risk and worry more about service standards. In turn, these shortcomings created the opportunity for a group of entrepreneurs to argue that the FHA needed private competition. Not wishing to have regulatory suspicion foreclose the opportunity, they embraced the recommendations of the Alger Report, which in effect created the mono-line strain in US insurance regulation (copied over to financial guarantee insurance as well). The mono-line approach became entrenched further by creation of a Model Act on MI by the National Association of Insurance Commissioners and through adoption by Fannie Mae and Freddie Mac of the Model Act[21]. *In effect, an implicit bargain was struck – mortgage insurers accepted substantial limits on the way they operated their businesses (reinforced further by the rating agencies) in return for being seen as the preferred means by which the additional credit risk associated with higher LTV residential mortgage loans was to be managed. And, because this inflexibility created substantial barriers to entry, competition did not erode prudential standards or financial returns as quickly.*

Europe (and indeed most of the world) lacks a similar regulatory or supervisory tradition. Within Europe, MI is treated simply as a form of credit insurance that any non-life insurer may offer with the appropriate license authority. European insurance regulation does not impose a mono-line requirement or any specific prudential restrictions on marketing, underwriting, reserving or investment – all of which are included within the mono-line approach - and no preference given for use of the cover like that which exists in mono-line markets for MI[22]. Insurers may self-limit their scope of operations, but no regulatory advantage inures to them for doing so. Given these circumstances, it is unclear why mortgage insurers continue to organise themselves as mono-lines or define their role so narrowly for reasons other than market-derived ones (why exclude commercial property, for example, or other types of consumer assets or financial risks?).

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[19] *See, e.g.,* Clive Briault, *The Rationale for a Single National Financial Services Regulator*, UK FSA Occasional Paper Series No. 2 (May 1999).

[20] *See* Dwight Jaffee, *Monoline Restrictions, with Applications to Mortgage Insurance and Title Insurance* (January 27, 2004) (http://irm.wharton.upenn.edu/S04-Jaffee.pdf).

[21] In effect, the "qualified insurer" requirements imposed by Fannie Mae and (especially) Freddie Mac have mattered more than state insurance regulation since the Model Act has been adopted only by a minority of states.

[22] Even Italy, which has perhaps the most MI-friendly approach to high LTV lending and capital regulation, allows alternative forms of credit protection to meet its standards.

More seriously, the mono-line regulatory tradition within mature MI markets arguably has caused mortgage insurers to underestimate the importance of keeping abreast of market needs in favour of satisfying a regulatory mandate. Like immigrants wishing to recreate their homeland in a different place, the mono-line approach has been pushed aggressively in new markets as well. Although eminently defensible as one way to organise credit protection, the mono-line regulatory programme is unlikely to succeed in the short term for predictable reasons unless combined with a strong market-based need for credit protection on residential mortgages. Insurance regulation requires sustained effort at the European Union level, and any change in the form of a directive or regulation has to have broad-based support and a strong policy justification. Because MI is a start up product in Europe, broad-based support is lacking, and because mortgage credit losses are low currently the need to create specialist entities to manage high LTV mortgage credit risk is not apparent[23]. Thus, even well thought out and presented arguments for creating mono-line regulatory schemes might be considered as the regulatory equivalent of re-fighting old battles on the wrong battlefield.

Challenge No. 4: Does MI meet the needs of the market for credit risk transfer?

Along with perceived UK MIG failure, persistent low credit losses and the failure (so far) of a regulatory meeting of the minds, *the pace of financial market innovation poses the fourth challenge for mortgage insurers*.

The same logic that prompted emergence of MI as a specialist product now threatens its progress in two respects:

First, the pace of "unbundling" has been too slow. The logic of specialisation is compelling for strategic types since it resonates with notions of competency, comparative advantage, rapid response and organisational dexterity. From a strategic perspective, MI can be seen as a specialist discipline intended to provide greater understanding and risk control on a higher risk form of credit origination. For operational types, however, the logic is less compelling since it resonates with loss of control over core banking functions, administrative complexity (matrix management, anyone?), contracts to administer and scepticism that a specialist's touch (especially an external specialist) is needed. From an operational perspective, MI can be seen as additional complexity (amending credit policy, creating information technology linkages, requiring external reporting) on a risk that does not justify the effort[24]. Consequently, this push-pull tension results in plenty of assessment but less action to restructure organisations to anticipate the "unbundled", horizontally integrated market predicted as "inevitable" by its proponents.

This makes for a very uneven path of development for an "unbundling" service proposition like MI. The fact that other service propositions – most notably residential loan administration and title insurance – have had similarly tough international expansion experiences provides little consolation. Compared to the US, Europe (and Japan) remains a world of vertically integrated lenders that obtain their own funding, create their own mortgage products, find their own borrowers, administer their own loans and manage their own risk.

Second, within the "unbundling" area of credit risk transfer, new products and providers continue to appear, particularly in the capital markets. Low credit loss environments embolden more than the originating lender regarding credit risk competencies. Investors in credit risk have their own cycles as well, in which the risk premiums for assuming risk decline, which forces investors either to withdraw from the market, bid more aggressively on a given level of risk or be willing to assume even more risk than previously – in other words, participate in a process very much like mortgage insurers are experiencing.

Within this context, mortgage insurers can customise MI, but they cannot write derivative contracts directly, regularly purchase mortgage-backed securities for cash or otherwise participate in the capital markets in any form other than as a provider of insurance credit protection[25].

These limitations are unfortunate, because recently the capital markets have pressed forward on three important fronts:

- *Capital markets emphasise tradability, an increasingly important part of lender portfolio management, rather than fundamental credit risk management.* Mortgage insurers concentrate on understanding risk and improving processes within a longer term relationship. By contrast, the capital markets are less relationship-oriented and process-intensive and simply price for risk, which is not likely to be held to maturity anyway. Arguably, this

[23] Of course, the optimist's view of rejection of the mono-line case is that it leaves mortgage insurers free to apply their considerable credit expertise to related lines of business, whether commercial mortgage insurance or credit insurance on other types of consumer assets.

[24] As noted below, a good argument can be made that this additional operational complexity is offset by the value of having a well informed third party continuously participating in the lender's entire operations – akin to an auditor or rating agency with its own capital at risk.

[25] Ironically, given the discussion of supervisory movement away from form to a more functionally-driven basis of review, mortgage insurers suffer from the inability to package their considerable credit risk expertise in the form the market demands it. Banks and investment firms can use credit derivatives to transfer risk and reduce regulatory capital – mortgage insurers cannot. Mortgage insurers can participate in capital markets transactions on an indirect basis, where either the underlying collateral is protected by MI or layers of credit risk are assumed via a series of intermediate steps involving non-insurance entities or special "transformer" entities which participate in a derivative or other capital markets transaction and then purchase insurance as protection against the credit exposure. However, mortgage insurance credit enhancement and "transformer" transactions compete on a "best execution" basis and represent a small portion of transactions compared to either conventional credit derivatives or the issuance and purchase of securities for cash.

addresses the central "fair value" theme of the International Financial Reporting Standards[26]. Instruments like credit derivatives can be marked-to-market, and increasingly are traded on a standardised basis. Insurance accounting is moving toward a mark-to-market approach (albeit slowly), but the absence of standardised forms and a strong "originate and hold" orientation suggests MI tradability is not likely soon.

- *Capital markets investors are willing to take more risk.* Whether due to naiveté or superior analytics, capital markets investors are willing to accept an enlarged definition of credit risk compared to mortgage insurers. For example, years of doing business in geographic regions with substantial natural catastrophe risk have caused mortgage insurers to exclude this risk or require that any physical property damage be repaired. MI policies also include other defensible exclusions developed after painful trial and error offering "life of loan" credit protection in common law jurisdictions (where legal rules, not just economic conditions, can change without the mortgage insurer having an opportunity to amend or re-price its credit protection contract). Capital markets investors simply assume the risk.

- *Capital markets investors might have structural advantages in terms of capital requirements.* Broad diffusion of structured finance analytics and emergence of unregulated or lightly regulated investors mean that investors might not have to operate within the confines of a regulated or rated environment, so the investor's bet can be on losses only – perhaps using a highly leveraged capital structure (debt to equity) to magnify returns. Because a major component of a mortgage insurer's pricing is capital, the mortgage insurer is at a significant disadvantage when this occurs – and the divergence in treatment is likely to widen further[27]. Additionally, these investors are willing to pay cash to purchase a security rather than providing risk protection on the underlying collateral – from the issuer's perspective, the cash investor provides complete risk transfer without any retained downgrade risk[28].

Thus, the capital markets have emerged as a significant threat to MI. In theory, MI and the capital markets are complementary: MI ensures intelligent risk selection, consistent loan performance reporting, more rigorous loan administration and imaginative loan workout techniques to avoid loss. Additionally, the first loss nature of MI cover helps to improve asset quality, reducing the need and size of deeply subordinated securities in securitisation transactions and facilitating the issuance of large, more tradable and hence more liquid securities. However, in practice the ability of issuers to find investors to take risk for a return on a cyclical basis places strains on the MI business model, which operates on a "through the credit cycle" approach.

In short, MI requires mortgage markets to dis-intermediate like Goldilocks' porridge cools – neither too slow (which means lenders will be suspicious about sharing key credit-granting and risk management functions) or too fast (which means lenders embrace capital markets solutions before examining other alternatives), but just right.

Challenge No. 5: Can custom and regulation be reshaped to include MI?

The fifth challenge faced by MI is a two-fold one – the first is historical custom in local markets and the willingness of governments to subsidise credit guarantees, and the second one mixes abstraction, prejudice and unfamiliarity in a supervisory witch's brew being mixed in slow motion. The brew is "Basel II", its regional and national counterparts and a protracted implementation process. For shorthand purposes, this final challenge can be thought of as custom and definition.

"Custom" has two parts. The first part is the existing institutional infrastructure used to originate residential mortgages and how high LTV mortgages fit in – or don't. Mortgage insurers never assumed that large European mortgage markets were unexplored territory, but underestimated how deeply settled were ordinary credit risk management processes in at least three respects:

- *Obtaining additional security* – Particularly within Mediterranean Europe, personal guarantees have been used for many years as a form of additional security on loans considered to be higher risk. Because the guarantees are frequently given by family members, they were assumed to have considerable primary value as a means of reducing delinquencies and defaults by drawing on family pride and fear of being shamed. The ability to absorb loss is secondary, but still important. Mortgage insurers have had some success in Spain competing against personal guarantees in terms of greater process rigor to meet bank supervisory expectations, reduced complexity in

[26] The IFRS offers in this respect represent a half-full glass for mortgage insurers – potential opportunities exist in the form of tougher standards on expected loss reserving and for derecognition of securitised assets/liabilities, but also potential threats in the form of an absence of standardisation and difficulty with tradability.

[27] For example, hedge funds have emerged as the most active purchasers of (or providers of protection on) sub-investment grade portions of mortgage-backed securities, and the combination of the UK FSA's tightening of capital and operational standards for insurers in anticipation of "Solvency II" with the proposed continuation of its "light touch" approach to hedge fund regulation is likely to reinforce this trend.

[28] Credit spreads in structured finance transactions do vary over time, but have tightened considerably as investors have become more comfortable with the performance of residential mortgage-backed securities. This is unwelcome news for mortgage insurers, whose credit protection is not competitive at investment grade (BBB or better) levels on the type of prime residential mortgage collateral they are most comfortable with, and competitiveness is eroding even at less than investment grade levels as well. Apart from its role as improving the credit profile of the underlying collateral, MI is simply ceasing to be relevant in the RMBS world (at least in Europe).

underwriting and loan administration (no need to track guarantor solvency) and demonstrably higher financial strength (externally rated companies benefiting from risk-spreading against individual or family net worth offering its guarantee without cost). However, despite the admonition that "you get what you pay for," the use of guarantees is rising in non-traditional markets like the UK and Ireland on a simple affordability basis. Guarantees are not an immediate out-of-pocket expense for the guarantor or borrower, and lenders are willing to allow increased borrowing limits. As with MIG prior to the UK housing market downturn, it is unclear whether participants in guarantee transactions understand completely what is being put at risk.

- *Using top up loans* – Existing government regulation should not be underestimated as a competitive barrier, either. Particularly within Continental Europe and Scandinavia, mortgage covered bonds are used as a source of funding for residential mortgage lending. As noted above, application of the "specialist principle" to mortgage banking gave investors confidence to invest in longer duration bonds, but the confidence was (and is) underpinned by mortgage assets available as a source of secondary security. And because investors wished to minimise credit risk associated with this secondary security, eligibility criteria imposed strict conditions regarding LTV ratios. For high LTV borrowers, LTV eligibility limits in mortgage covered bond laws pose a problem – either the borrower accumulates the additional funds or borrows additional funds on a second lien or charge basis. Either alternative introduces competition for mortgage insurers: the savings route is often state-assisted, and second lien route often involves credit being extended by another part of the lender's operations not subject to the mortgage covered bond law[29]. Theoretically, of course, MI represents a simpler alternative with one loan with less administrative complexity also benefiting from highly rated credit protection[30]. Practically, the barriers are significant: both government policymakers and investors are conservative, and MI faces an uphill battle in the absence of real enthusiasm from either to embrace the concept of adding risk but neutralising it through third party means.[31]

- *Government credit intervention* – The last custom faced by mortgage insurers is the willingness of governments to provide credit protection to the residential mortgage market on highly advantageous terms. Certainly mortgage insurers are accustomed to competing with public facilities – indeed, a good case could be made that public facilities should precede private ones, since public facilities have a greater ability to standardise market terms and conditions[32]. However, public facilities used to actively intervene in the residential mortgage credit market can create nearly insuperable barriers to start up credit protection products like MI. For example, both the Netherlands and Germany have public schemes that encourage credit risk transfer on terms that mortgage insurers find difficult to match. In the Netherlands, the Guarantee Fund for Home-ownership ("NHG") benefits greatly from an unlimited backstop credit guarantee from the Dutch Government that allows it to operate on a basis that cannot be matched by any private competitor[33]. In

[29] So-called "contract savings plans" express a policy preference that the borrower save before participating in that mixture of investment and consumption that is a housing purchase, and these plans often benefit from favourable tax treatment – in contrast to MI, which often is disadvantaged by imposition of an insurance premium tax on the procurement of the insurance policy.

[30] Arguably, MI provides a superior means of recognising and mitigating the additional credit risk. A high LTV divided into two or three pieces is still a high LTV loan subject to an increased probability of default and greater loss severity when the default occurs, which is why banking supervisors should measure credit risk on an aggregate or combined LTV ("CLTV") basis. If CLTV were measured and disclosed to investors, it is unclear what the principled basis would be for refusing regular inclusion of credit enhanced high LTV loans as mortgage collateral eligible for inclusion in cover asset pools. Indeed, some countries do allow inclusion of high LTV loans, with the understanding that the loan portion exceeding the stated LTV limit is to be treated as over-collateralisation not capable of generating any direct funding benefit.

[31] The proposed imposition of an 80% LTV limit as an EU-wide standard contained in the European Commission's Risk-Based Capital Directive represents the latest restatement of the conventional approach even given the increasing amount of high LTV borrowing within Europe.

[32] *See, e.g.*, Eric Klopfer, "Public/Private Partnerships in Emerging Mortgage Markets," *International Union for Housing Finance Newsletter* (June 2004) (http://www.housingfinance.org/pdfstorage/0604_newsletter.pdf). Where the credit protection is provided on a commercial basis, particularly in the partial cover form characteristic of traditional MI, there is no reason to expect anything other than ordinary commercial competition – as is the case in Sweden, Finland and the Baltic states.

[33] The NHG, the successor to a tri-party municipal guarantee scheme, has been offered consistently by its proponents as a "private" model capable of wider use that has performed well under the (now ending) benign credit market conditions. However, the NHG arguably introduces substantial distortion into the Dutch credit risk transfer market. No other "private" entity has been offered unlimited credit support by the Dutch Government on a similar non-commercial (*i.e.,* free) basis – even in Canada, where credit support is provided, the guarantee is priced and paid for on an ongoing basis. Additionally, in a business where risk capital is the biggest element of pricing, the NHG operates on risk to capital ratios more than ten times greater than its potential commercial competition. Finally, the 100% credit protection (which the Government guarantee converts into highly beneficial regulatory capital treatment for lenders), allows lenders to reduce interest rates to borrowers so that the NHG protection in effect pays for itself immediately. Were these benefits directed specifically to market segments or borrowers thought to require credit subsidies based on lower incomes or other economic or social disabilities, the NHG's advantages would be more defensible on policy grounds. However, as with Fannie Mae or Freddie Mac, the NHG's remit is limited only by property price, which is set high enough to make much of a mortgage insurer's traditional market base simply unavailable (even taking into account some of the NHG's credit policy restrictions and ways of doing business).

Germany, the "Provide" credit risk transfer facility offered by the Government's development bank also offers advantages that cannot be matched by any private competitor[34]. Recently the UK Government has proposed a "shared equity" scheme that would have the Government absorb credit losses in a manner traditionally associated with MI[35]. With each of those, occurring as they are in some of Europe's (and the world's) largest mortgage markets, mortgage insurers face the unenviable task of explaining to those governments why the schemes should not be allowed to shape national credit markets in a way that forecloses private competition.

Thus, in some respects, the fact that European markets in many cases already have approaches to managing high LTV mortgage credit risk is unsurprising. However, historical custom and government credit intervention should not be underestimated as a competitive barrier.

Finally, Basel II offers opportunity and threat for mortgage insurers. In terms of opportunity, Basel II promises to be more risk-sensitive and reward risk management. Because MI in effect exists to mitigate relative risk within the residential mortgage asset class, one of the largest components on bank balance sheets, its future would seem to be bright. Additionally, because MI encourages risk reduction as well as risk transfer and involves a highly motivated specialist to monitor risk selection, loan administration and loss mitigation of non-performing loans, its process emphasis would seem to be welcome under all three "pillars" of Basel II.

However, Basel II also poses two distinct threats to mortgage insurers.

First, particularly for mortgage insurers intent on operating as mono-line providers of MI, Basel II will reduce regulatory capital required to be held against residential mortgages. The standard risk weight will be reduced from 50% (or four per cent capital expressed as a percentage of the eight per cent international minimum capital requirement) to 35%, and more sophisticated lenders are likely to see further reductions. Maximum risk weights for high LTV loans are likely to be reduced (in markets where they have been imposed) from 100% (or eight per cent capital) to 75% (or six per cent capital). Thus, even without any form of credit risk mitigation, residential mortgage assets held by regulated entities on balance sheet will become "safer", reinforcing the tendency to see residential mortgages as a safe enough asset not to need further credit risk mitigation.

Second, Basel II requires interpretation to determine whether MI should be recognised as a valid form of credit risk mitigation ("CRM"). Although MI is well established as a CRM technique used in the mortgage industry and has been accepted by banking supervisors in markets where its use has been accepted by lenders, Basel II and its EU counterpart do not discuss specific CRM techniques within particular asset categories. Thus, apart from supervisors in markets within which MI already has been established, supervisors unfamiliar with MI lack basic knowledge regarding MI and the extent to which banks may recognise MI in regulatory capital calculations.

Banking supervisors must consider how MI might be incorporated into the regulatory capital calculations in terms of ***form*** and ***substance***:

Regarding form, or the type of CRM category within which MI should be placed, supervisors need to determine whether MI should be considered as a form of guarantee[36]. However, because regulatory guidance still remains at a highly abstract level, some uncertainty exists regarding how "conditional" MI may be and satisfy the guarantee criteria. Additionally, because MI originated as a form of residual credit protection, some uncertainty also exists regarding how the "timely payment" requirement of the guarantee criteria may be applied to MI. At a time when financial regulators are concerned whether insurers provide sufficient "contract certainty"[37], the willingness of those regulators to consider MI on its own terms as a special form of guarantee is an open question.

Regarding substance, or how the CRM provided by MI should be valued, particularly when the protection is partial, first-loss coverage, supervisors arguably have an even tougher decision. Because MI

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[34] KfW's Provide programme offers lenders (originally German, but now including French, Dutch and UK users as well) the opportunity to reduce regulatory capital via a "synthetic securitisation", where credit risk, but not the actual asset, is transferred to investors. Since the German regulatory capital framework penalises high LTV risk most heavily, lenders have the biggest incentive to transfer risk on high LTV loans. Although the impetus for Provide was standardisation of documents and process, the transaction can be done by private entities (even the standardisation part via commonly agreed definitions), but not by mortgage insurers on a direct basis as noted above. Provide offers one additional advantage that the private sector cannot match, however. Credit guarantees given by KfW as counterparty in effect converts high LTV asset risk into a public guarantee of repayment, which allows the high LTV mortgages to be included as eligible collateral in "public sector covered bonds", so lenders can transfer risk and realise a funding benefit as well. No private entity can do this, which gives Provide a material advantage in the German credit risk transfer market and allows German lenders and supervisors to manage high LTV credit risk without the use of mortgage insurance.

[35] Mortgage subsidies also represent a potential barrier – in theory, interest subsidies reduce debt service obligations and are complementary with MI, which reduces down payment obligations, but many subsidy programs impose LTV limits (*e.g.,* Spain).

[36] *See, e.g.*, Aicher, Cotton and Khan, "Credit Enhancement: Letters of Credit, Guaranties, Insurance and Swaps (The Clash of Cultures)", *The Business Lawyer*, *Vol. 59* (May 2004) (describing types and variety of guarantees).

[37] *See* Contract Certainty in the Insurance Market (Record of Meeting between the Insurance Industry and the FSA) (20 Dec 2004) (http://www.fsa.gov.uk/Pages/Library/Other_publications/Miscellaneous/2005/contract_insurance.shtml).

provides protection on an asset already partially protected by collateral in the form of a mortgage, MI presents a unique valuation issue as well. Although MI originally provided by Government facilities protected the entire loan amount as an inducement for lenders to extend credit, most current MI facilities (public or private) provide partial cover only. The mechanics of MI mean that, in many cases, only a small proportion of an exposure’s principal appears protected even though a significantly greater proportion of the credit risk is covered, *e.g.* in the case of 20% first loss cover, substantially more than 20% of the credit risk is actually covered due to the collateral in place. MI reduces the quantum of loss associated with default – “loss given default” – and also improves the quality of risk selection and the processes used by creditors to monitor their residential mortgage credit exposures. Supervisors have a variety of valuation techniques ranging from local discretion to substitution to full application of principles developed for securitisation transactions to give credit for the risk-reducing benefits of MI.

Good reasons may be given for characterising MI as a guarantee qualified as a form of CRM under Basel II, and more appropriate valuation methods also might be suggested to give lenders the full value of the mortgage credit protection provided by MI. However, as this brief discussion suggests, Basel II introduces substantial complexity into a lender’s assessment of MI. Faced with this complexity on what supervisors deem to be a “safe” asset category, lenders may choose to skip the complexity altogether either by not using MI or using MI only when it is provided in a 100% coverage whose value is easy to measure.

Conclusion

Mortgage insurers face tough, but not insurmountable, challenges. This article introduced five major challenges and attempted to provide the reader with some of the context surrounding each challenge. Failure by mortgage insurers, or less than complete success, to meet any individual challenge is unlikely to be fatal, and much of the context is subject to rapid revision. Although the glass is half-full at best, there are some reasons to expect a slow filling, including:

- *Perceptions of reliability* – The UK MIG “failure” rests on a slim factual basis and a rigorous re-examination could revise conclusions substantially.

- *Persistence of low credit loss environments* – Prompted by their own thoughts and a growing chorus in the financial press[38], banking supervisors are unlikely to share the optimism of the uninformed regarding the permanence of low credit loss environments. Indeed, the UK and Spain pose good examples of the supervisory dilemma: housing asset prices have risen faster than housing debt, improving household balance sheets, but leaving households in both increasingly exposed to any downturn since housing assets dwarf other forms of financial assets held by individuals. The re-emergence of credit risk is more likely now than it was previously.

- *Mono-line regulatory approach* – Certainly a credible way to provide specialist protection, mortgage insurers arguably have overemphasised its benefits and importance, but it is important for supervisors to ensure economic stress scenarios can be handled by credit protection sellers and buyers.

- *Product and service alternatives* – Because MI is both process and product and capable of being involved in lender processes in the front, middle and back of their operations, it can seem overly ambitious for the lender looking for “sleep easy” protection and insufficiently specialised when compared to products or services developed for only one part of the lender’s operations. However, MI has considerable value as a “common denominator” and consistent source of third party experience regarding the markets in which lenders compete.

- *Customary and regulatory barriers* – Perhaps the toughest challenge, because customs change more slowly than retail fashion. Disappointingly (so far) few regulators or supervisors seem willing to propose a “grand unified theory” linking together custom, regulatory and supervisory arrangements that have evolved over time and seismic shifts like Basel II and the IFRS. However, “so far” does not mean “never”, and the willingness by mortgage insurers to remain open to repackaging their considerable skills in different forms suggest that it is too early to conclude the expansion effort has failed.

[38] *See, e.g.*, “In come the waves: the global housing boom,” *The Economist* (June 18th 2005).