

Secretariat of the Joint Forum (BCBS Secretariat)
Bank for International Settlements
CH-4002 Basel, Switzerland

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**Subject: Mortgage Insurance: Market Structure, Underwriting Cycle, and Policy Implications
Consultative Document**

Dear Sir or Madam.

Quantum Alpha Limited ("QAL") is pleased to comment on the Joint Forum's consultative document on mortgage insurance: market structure, underwriting cycle and policy implications. QAL was founded and is chaired by John Windeler, a former Chairman and CEO of Alliance & Leicester, a major UK mortgage lender. QAL has developed an innovative form of mortgage insurance which meets the objectives outlined in the consultative document. We are therefore supportive of the policy framework outlined thereunder.

Our innovation achieves the following:

- In addition to facilitating credit extension at high LTVs, both homeowners and lenders are protected against house price falls;
- It aligns the interests of all parties in an unprecedented manner. It provides powerful micro-prudential incentives for lenders and insurers to engage in responsible financial intermediation and risk-taking activities;
- It enhances financial stability by explicitly pricing and reserving against the collateral risk;
- It establishes long-term capital buffers and reserves designed to withstand adverse market shocks; and
- It promotes a more transparent financial system in which supervisors have better intelligence and knowledge as to where risks lie.

We believe that our innovative form of mortgage insurance satisfies all the recommendations of the Joint Forum. We would be delighted to work further with the Joint Forum to answer any questions you may have or support any additional work the Joint Forum wishes to undertake.

Yours sincerely,



Anish Goorah

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Executive Summary

An innovative form of mortgage insurance (“MI”), Negative Equity Insurance (“NEI”), is proposed to increase the availability of higher LTV loans, to render them safer than they have ever been, and to promote financial stability. This innovation addresses all of the limitations customarily associated with traditional MI:

- For the first time, the homeowner is protected against house price falls. While traditional MI has encouraged homeownership, it has done so by protecting lenders only. NEI protects both the lender and the homeowner. To the best of our knowledge, no such protection exists anywhere else;
- Effective risk management requires that both components of mortgage risk - the repayment risk (i.e. the homeowner’s ability to make monthly mortgage payments) and the collateral risk (i.e. the expected loss associated with the home in the event of market downturns) - be addressed. NEI provides a mechanism through which the collateral risk can be managed by pricing for and transferring it from lenders to insurers. A firewall between the repayment and collateral risk is created. As a consequence, both insurers and lenders are incentivised to behave prudently. There is complete alignment of interest between both parties;
- NEI provides an alternative to a default and repossession. This benefits homeowners, lenders and, crucially, mortgage insurers as the avoidance of a default mitigates loss severity;
- NEI insurers, through their capital requirements and reserving policy, provide a countercyclical buffer in the event of financial market downturns. They can therefore act as natural stabilisers and provide substantial financial stability benefits.

Introduction

1. The Basel Committee on Banking Supervision (“BCBS”) consultative report on Mortgage Insurance (“MI”) provides a detailed analysis of the challenges faced by mortgage insurers and mortgage originators. These include:
 - 1.1. The potential for MI to create systemic risk. The financial crisis of 2008 indicated that MI can be subject to significant stress in worst tail events. In these cases, failure of a mortgage insurer creates contagion to lenders at the worst possible time. Overexposure of a mortgage insurer could therefore create both “Too Big To Fail” and “Too Interconnected To Fail” problems;

Micro-prudential Concerns

- 1.2. The micro-prudential aspects of MI create behavioural concerns: either party has an incentive to lower standards given that the other party is sharing the risk. For example, the lender may:
 - 1.2.1. Have an incentive to extend credit to higher risk borrowers since losses will be covered by mortgage insurers. Although MI providers may mitigate this concern by capping their exposure, the lender may still take advantage of naive insurance capital;
 - 1.2.2. Possess superior information regarding the borrower’s repayment capacity. This information asymmetry may lead mortgage insurers to misprice risk.

On the other hand, the mortgage insurer may be:

- 1.2.3. Overconfident in lender’s ability to assess risk. This undue faith could result in the insurer being less diligent in his analysis of risk;
- 1.2.4. Forced to lower underwriting standards because of the mispricing of other financial instruments. For example, alternatives to MI (e.g. financial guarantees or CDS or piggyback loans) may be mispriced.

Macro-prudential Concerns

- 1.3. On a macro-prudential basis, both mortgage insurers and lenders may be exposed to an overconcentration of mortgage default risk which is intrinsically correlated with housing market cycles;
 - 1.3.1. Not only can housing market cycles last decades, but they are also of asymmetric durations. Periods of rising house prices tend to be higher in both magnitude and duration than those of falling house prices. Risk may therefore be invisible but accretive. By the time risk visibility materialises, significant losses may already be in the pipeline;
 - 1.3.2. Hyman Minsky’s Financial Instability Hypothesis argued that stability is inherently destabilising. The BCBS consultative report makes a comparable argument when it analyses how a strong mortgage originator and a strong mortgage underwriter can eventually turn into a weak mortgage underwriter and a weak mortgage originator;

- 1.3.3. A repossessed home is vacant and in deplorable condition. The borrower has been evicted. Not only does the previous occupant have no incentive to maintain the home in good condition, but he may intentionally inflict damage to the property out of malice or spite. This is because his credit history will be damaged. His future ability to borrow will be curtailed. He will suffer from the social stigma associated with a repossession. This misalignment of interest results in the property selling at a large discount to market value. Loss severity or Loss Given Default (“LGD”) is therefore higher;
 - 1.3.4. Distressed sales, which generally arise following repossession, apply downward pressure on house prices. Repossessions can therefore aggravate house price falls;
 - 1.3.5. MI providers occasionally limit their exposure using coverage limits. For instance, some mortgage insurers will only cover a maximum of 20 or 30% of the amount borrowed. The recently announced UK Government-backed mortgage guarantee scheme covers losses to a maximum of 10%. While these provide a way of controlling loss severity, the imposition of coverage limits restricts the value MI offers to mortgage lenders.
 2. We note that the BCBS is a follow-up of previous discussions held on MI. In particular, the FSB Principles for Sound Residential Mortgage Underwriting Practices called for a prudent use of MI where appropriate (Principle 5).
 3. We read with interest the various Government incentives and/or interventions across jurisdictions. We share the view that Governments and regulators, as part of their responsibility of ensuring the continuity of a thriving and complete mortgage market, have a key role to play in MI.
 4. The BCBS proposes a set of recommendations to improve the efficacy of MI. In this submission we demonstrate how Negative Equity Insurance (“NEI”), an innovation of traditional MI, can result in a superior implementation of the various recommendations made. At its core, this innovation resolves fully the alignment of interest concerns between mortgage originators and mortgage lenders. For the first time, a robust way of protecting homeowners against house price falls is available. In addition, this innovation enhances financial stability through more effective risk management.

An Innovation of Traditional Mortgage Insurance

5. The mortgage risk can be decomposed into three categories:
 - 5.1. Operational risk, i.e. fraud, conduct risk, legal risk, etc;
 - 5.2. Repayment risk, i.e. the homeowner's ability and willingness to continue to make his monthly payments;
 - 5.3. Collateral risk, i.e. the risk that the home may be worth less than the mortgage balance.

For the remainder of this submission, we focus our comments on the repayment and collateral risks.

Mortgage Risk Factors

6. Traditional MI is an amalgamation of both repayment and collateral risk. In practice, MI risk often grows as a contagion from repayment to collateral risk. Moreover, this contagion is superadditive: the total MI risk is greater than the individual aggregation of the repayment and collateral risk.
 - 6.1. While the chain of events leading to risk crystallisation may vary, it often starts with the homeowner's inability to continue making his mortgage payments. More generally, arrears increase as the economy contracts. This is associated with a rise in unemployment and a negative income shock;
 - 6.2. The housing cycle is correlated with the economic cycle. Increases in arrears are likely to occur as house prices start to fall. Prolonged and sharp declines in house prices can result in the mortgage balance exceeding the value of the collateral (i.e. negative equity). Arrears also increase the extent of negative equity;
 - 6.3. If the amount of equity in the home is large enough to cover any arrears, then the mortgage is less problematic (Appendix 1);
 - 6.4. When borrowers experience continuing difficulty in making mortgage payments, lenders assess the situation and where possible extend forbearance. In some jurisdictions (e.g. US), private mortgage insurers may also get involved in the workout of the loan. In the UK, lenders have worked extensively with customers who have experienced repayment difficulties. As valuable and useful as forbearance might be, it is a temporary solution which can be costly for the lender and ultimately the borrower. If remedial action is not undertaken, then the lender may have no option than to call a default, repossess and exert its power of sale;
 - 6.5. In jurisdictions where traditional MI providers do not become involved in the workout of a loan, lenders have an incentive to repossess as early as possible to benefit from MI cover. Ignoring other considerations, traditional MI could therefore lead to a rise in repossessions;
 - 6.6. Coverage limits could accomplish the opposite of what they were originally set out to do (i.e. limit losses). If implemented on a mortgage-specific basis, then lenders have an incentive to repossess when losses are fully covered by the mortgage insurer. Therefore, on a portfolio basis, the mortgage insurer's losses could be higher than expected.

7. While further improvements are always possible, the repayment risk is generally well assessed. Following the 2007 global financial crisis, policy makers and mortgage lenders alike have laid further emphasis on tightening affordability criteria.
 - 7.1. In the UK, the responsible lending standards being implemented by the PRA/FCA require that lenders carry out affordability assessments to establish that, within reason, the borrower can meet his mortgage obligations. The qualified mortgage rule under Dodd-Frank also proposes a comparable affordability assessment in the US. In the UK, risky lending practices (e.g. no documentation loans, no verification of income, etc) have been either explicitly banned or severely discouraged;
 - 7.2. Lenders routinely assess the repayment risk and take it into account during the mortgage approval process. In some jurisdictions, responsible borrowers who are deemed more creditworthy (e.g. a higher FICO score in the US, a lower debt to income ratio, etc) can benefit from a lower mortgage rate;
 - 7.3. In some cases, mortgage insurers price for repayment risk. US private mortgage insurers, for example, charge a lower premium for the more creditworthy customers. However, there have been instances where mortgage insurers have failed to price for repayment risk. The premium charged by the US GSEs is unaffected by the homeowner's credit score. The same applies to the Canadian Government's CHMC. Recently, the UK has announced a similar pricing strategy for its temporary Government-backed MI scheme;
 - 7.4. Insurance policies which protect against repayment risk are also available in some jurisdiction. In the UK, Short-Term Income Protection policies are available to protect income in the event of accident, sickness and/or unemployment. The level of cover varies but can often accommodate the protection of mortgage payments for a period of 12 months. Longer term income protection insurance is also available. Clearly, commercial insurance products that mitigate income shocks exist.
8. Improvements in mortgage risk assessment have been, for the most part, focused on affordability and repayment risk. Advances in collateral risk measurement and management have not, unfortunately, materialised. The importance of collateral was referred to in the FSB's Principals for Sound Residential Mortgage Underwriting Practices (Principle 4: Effective Collateral Risk Management).
 - 8.1. House price falls vary by location and property type.
 - 8.1.1. In the UK, house price falls in the Greater London Area were significantly less than (a peak-to-trough fall of 16% during the 2008 Recession) those in the North East (a peak-to-trough fall of 26%);
 - 8.1.2. Further, house prices within the Greater London Area have fully recovered from the 2008 fall. In fact, Greater London Area house prices are currently about 6% higher than in 2008. However, North East house prices have barely recovered: they remain about 22% down;
 - 8.1.3. Significant local microcosms exist within the Greater London Area. Some areas within the capital have seen more robust rises in house prices than others;

- 8.1.4. Although the picture is clouded by the presence of non-recourse loans, sizeable geographical disparities in house prices are evident in the US too.
- 8.2. While pricing for the repayment risk is common among lenders and some mortgage insurers (7.2 and 7.4), pricing for collateral risk is non-existent. In practical terms, everything else being equal, mortgage lenders charge the same rate regardless of location and property type;
- 8.3. Pricing for collateral is an integral part of mortgage risk management given that the extent of house price falls is a powerful driver of LGD and/or loss severity;
- 8.4. Although literary, the Merchant of Venice provides a powerful illustration of the importance of collateral. In the central scene, Antonio and Shylock argue what interest rate should be charged for the loan. Very few of us remember what the interest rate was (it was zero). Yet, almost everybody remembers the collateral agreed in the contract – a pound of flesh.
- 9. The need for home price insurance products was first voiced by Robert Shiller of Yale University in the late 1980s. Since then, Robert Shiller reiterated the need for such products in his 2005 book “The Subprime Solution”. His more recent book – “Finance and the Good Society” – also suggests that such innovation will contribute to a better society. We propose the establishment of Negative Equity Insurance (“NEI”) as a new class of MI. NEI provides a coherent, systematic and permanent way of addressing the risk associated with house price falls. Policies and mechanisms to cover all other major homeownership risks (e.g. fire, flood, income protection, etc) exist. Yet, the single largest risk remains uninsured and unprotected. While housing wealth varies by jurisdiction, it is estimated to be around £4 trillion in the UK; far in excess of the stock market capitalisation. A mortgage is the single largest and lengthiest financial liability entered into by a homeowner. More must be done to protect homeowners, lenders and the broader economy from falls in house prices. NEI improves traditional MI in the following ways:

Improving Mortgage Risk Management

- 9.1. Alignment of interest:
 - 9.1.1. NEI prices only the collateral risk. It does not attempt to assess repayment risk which remains either solely with the lender or can be reduced through other insurance contracts (7.4). The insurance premium is therefore independent of a homeowner’s creditworthiness. This ensures that there is no contagion between repayment risk and collateral risk. Since any risk transfer between mortgage originators and NEI insurers is solely restricted to collateral risk, lenders have every incentive to ensure that borrowers are able to meet their mortgage payments;
 - 9.1.2. As discussed in 6.1 and 6.2, an MI claim often starts with a homeowner being unable to make mortgage payments. While this may be the result of an income shock, MI may also incentivise lenders to extend credit to risky borrowers. With NEI, the mortgage originator has no incentive to relax standards since he retains the repayment risk;
 - 9.1.3. As NEI insurers do not take any repayment risk, the information asymmetry does not arise (1.2.2);

- 9.1.4. NEI claims are supervised by the insurer. Unlike traditional MI, the insurer has full control of the costs, timescale, and loss severity associated with a particular claim (11);
- 9.1.5. Although NEI's primary impact is on LGD and loss severity, it can also reduce the Probability of Default ("PD") in two ways:
- There is no incentive for an NEI homeowner to strategically default;
 - An analysis of how NEI assists in working out an under pressure loan is included in Appendix 1. In brief, usage of the insurance provides additional forbearance options, protects the homeowner, avoids a repossession and enhances financial stability.
- 9.1.6. Unlike traditional MI, the homeowner is the insured party. This is because NEI is designed to protect the homeowner even in circumstances whereby the lender may not be overly concerned about the mortgage (e.g. the homeowner being in negative equity but needing to move home for exogenous reasons). Further, the homeowner being the insured party does not materially limit or constrain the lender benefits or workout strategies (Appendix 1).

Protecting and Empowering Homeowners

9.2. Reducing risk for homeowners:

- 9.2.1. A home is often the single largest asset owned by a household. By definition, property assets are not only undiversified and concentrated in a single geographical area; but more importantly leveraged with a mortgage - the largest and lengthiest personal liability a homeowner typically carries. From the homeowner's perspective, owning a home with a mortgage is a one-way bet on house prices: if house prices fall, the homeowner can lose more than his original deposit. At present, there is no systematic way of mitigating this leverage risk;
- 9.2.2. Traditional MI permits the extension of a higher LTV loan while protecting some or all of the lender's downside. The borrower benefits from having access to homeownership with minimal equity. Despite the borrower's high leverage ratio, traditional MI does not offer him any downside protection. NEI improves on traditional MI by facilitating credit extension and protecting both the borrower and the lender;
- 9.2.3. An MI claim has a detrimental impact on the homeowner (1.3.3). An NEI claim does not require a repossession (12). The homeowner is not evicted. In addition, the homeowner benefits from a "clean exit" from the home. Neither his credit history nor his social status is affected (Appendix 1);
- 9.2.4. NEI is also an empowerment product. Wanting or needing to move home is not necessarily tied to a homeowner's ability to meet mortgage payments. A desire to move can arise for any number of reasons: finding a job in another part of the country, a marriage or a divorce, upsizing, downsizing, etc. To claim on NEI, a homeowner needs to sell his home and move: this dissipates any moral hazard (10). Since the policy covers the negative equity shortfall and the transaction costs associated with selling the home, the borrower can leave his home at no cost. Without NEI, the negative equity shortfall and transaction costs would need to be

covered by a homeowner's savings. A homeowner without sufficient savings or NEI effectively becomes a mortgage prisoner.

Enhancing Financial Stability

9.3. Increasing the resiliency of the financial system:

- 9.3.1. The risk transfer arising out of NEI enhances financial stability. This is because for the first time, the expected loss on the collateral (i.e. the probability and magnitude of a fall in house prices) is measured and taken into account when the loan is originated. Insurers charge a premium commensurate with that risk. The financial resources deployed by insurers and reinsurers (reserves and capital) mean that the financial system is in a better position to absorb mortgage-related losses;
- 9.3.2. A mortgage portfolio with NEI will be less risky than one without. Thus, whether NEI mortgages are held as trading book assets (e.g. mortgage-backed securities) or in the loan book, they will be characterised by lower losses;
- 9.3.3. While the lack of absorption of the repayment risk may impair NEI's attractiveness, this should be balanced against:
 - The strong alignment of interest this firewall creates between lenders and insurers;
 - The elimination of any informational asymmetries between lenders and insurers;
 - A strong ability for NEI insurers to provide a countercyclical buffer in the event of market downturns;
 - Protection of homeowners against falling house prices.
- 9.3.4. There are diversification benefits to having insurers and reinsurers assume the negative equity risk. General insurers have an income stream which is less cyclical than that of lenders. Their revenue sources are broader and more resilient. Insurers are also adept at reserving against losses associated with rare events such as terrorism or natural catastrophe. The funding model of insurers also endows them with a comparative advantage in a financial crisis.

Negative Equity Insurance Key Elements

Moral Hazard and Absence of Arbitrage

10. An insurance product is only robust and appropriate if it prevents arbitrage and moral hazard.

- 10.1. Only owner-occupiers will be eligible for NEI. Buy-to-let, investment homes and second-homes are excluded. This is because, from the perspective of the homeowner, the insurance is there to reduce the risk in their largest financial liability. Its purpose is not to provide a hedge against falling house prices to residential real estate investors;
- 10.2. The policy does not cover 100% LTVs. The homeowner must have a sizeable enough equity stake in the home;
- 10.3. Only negative equity - not the deposit - is covered. This effectively means that the homeowner's deposit performs a role similar to a deductible (10.5);
- 10.4. Only negative equity which arises out of market risk is covered. This prevents situations whereby a homeowner could conceivably force himself into negative equity. For example, absent such restriction he could refuse to make his mortgage payments or undertake actions which reduce the value of the home, force himself into negative equity, and subsequently claim on the insurance;
- 10.5. In order to claim, the borrower has to be willing to move home (11). This requirement to move effectively means a write-off of his original deposit. A paper loss is being translated into an actual loss. Further, a home represents far more than a financial asset for the homeowner. Emotional attachment to the home and possibly to the community have to be foregone as a result of claiming on the insurance;
- 10.6. The homeowner does not get a financial payout from the insurance. Instead, his negative equity shortfall is settled directly with the mortgage originator. There is no financial gain which could otherwise lead to speculative behaviour. The homeowner's benefit is that he can move home at no cost, whatever happens to the housing market. In addition, his credit history is protected;
- 10.7. It is vital to ensure that the insurance policy does not facilitate housing market arbitrage. In particular, a straw man argument is that a borrower could use the policy to get out of his existing home at no cost and purchase an identical house next door. The neighbouring home would reflect the fall in house prices and hence, a cheaper mortgage is possible. The homeowner would also retain the upside associated with any housing market recovery.

The above pre-supposes perfect foresight. In other words, it is assumed that the homeowner is able to predict with perfect accuracy the timing and the extent of both the initial fall and the subsequent recovery. Since perfect foresight is impossible, there are considerable risks to the homeowner. The transaction occurs at a time when the housing market and the wider economy are suffering from severe stress and risk aversion likely to be high. Not only does the homeowner need to write off the deposit on his existing home, but he also needs to have - and be willing to use - additional savings to purchase the house next door. In addition, it is worth recalling that severe falls in house prices lead to lenders tightening the availability of higher LTV mortgages and raising their cost.

If we maintain the perfect foresight assumption and/or suppose the borrower has both the financial resources and risk appetite to take advantage of the housing market downturn, then his optimal strategy is to “stay put, buy-and-rent”; not “sell-and-buy”. He should stay in his current home and purchase the house next door as a buy-to-let investment. This strategy allows him to leverage up. It offers the highest risk-reward ratio since he benefits from any housing market recovery on both homes. In addition, the downside on his current home remains fully protected.

11. NEI is an event-driven, not a-loss driven, insurance. Being in negative equity is a necessary but not a sufficient condition for a claim to be paid out. It is the borrower’s need to move home for an exogenous reason - not being in negative equity – that drives the motivation to claim. The lender may incentivise the decision to move home (Appendix 1). This is in stark contrast to traditional MI which, for all intents and purposes and subject to coverage limits, acts as a financial guarantee.

Claiming on NEI

12. This NEI claim process will need to be adjusted for each jurisdiction, but the key components required are already in place in most advanced economies.
 - 12.1. To register a claim, the local housing market index must have fallen from its inception level. The magnitude of the fall is immaterial and the index will not be used to settle the negative equity claim (12.3). The second requirement for claim registration is that the homeowner be willing to move home;
 - 12.2. Once a claim has been registered, an asset manager acting on behalf of the NEI insurer will select and appoint estate agents to handle the sale of the home. The asset manager’s mandate, broadly speaking, is to ensure that the home is sold in an arm’s length transaction in the open market. Unlike traditional MI and until such time as the home has been sold, the borrower continues to live in his home;
 - 12.3. The negative equity shortfall is determined by the difference between the outstanding mortgage balance at the time of claim settlement (excluding any arrears) and the sale price of the home. In addition, the NEI insurer covers the mortgage early repayment charge and the costs associated with selling the home;
 - 12.4. The interests of the homeowner, lender, and insurer are aligned:
 - 12.4.1. If it turns out that there is no negative equity, all excess monies are returned to the homeowner;
 - 12.4.2. If there is negative equity, the homeowner is covered in full no matter how significant the shortfall might be.

Premium Consideration

13. The NEI premium is a reflection of the expected loss on the home and the likelihood that the homeowner will need or want to move.
 - 13.1. Reliable house price data are required to assess the expected loss. While the quality of the data is likely to vary across jurisdiction, it is possible to produce monthly premiums on a postcode area and property type basis in the UK. This allows for a granular

assessment of market risk. The monthly premium update will give NEI insurers the ability to respond quickly and effectively to changing market conditions;

- 13.2. The premium will be influenced by the location of the home, the type of home, the home valuation and the mortgage balance;
- 13.3. The expected claim frequency - the number of homes transacted - is relevant. NEI protects homeowners' mobility in a downturn and will therefore enable a greater number of transactions that would otherwise occur in a faltering market. In particular, NEI insurers must recognise that NEI will lead to a higher number of homes sold in downturns for two reasons: first, homeowners will be more mobile; and second, NEI can motivate a lender's forbearance (Appendix 1);

Reserving and Capital Allocation

14. In a manner similar to traditional MI, long-term capital buffers and reserves are essential to secure the paying out of claims when they arise. Given the nature of the underwriting risk, claims will occur during economic and/or housing market downturns. Although a detailed discussion regarding the reserving policy is beyond the scope of this commentary, the general principles governing it are outlined below:

- 14.1. The reserving policy bears some resemblance to that of CAT products in the sense that a significant amount of time can elapse before a CAT event materialises;
- 14.2. A reserving policy, which reflects market conditions and the need to establish long-term loss absorbency, is proposed. Reserves should not solely reflect the underwriting risk (i.e. housing market conditions) but should also have a countercyclical element. This particular element is vital to the long-term financial stability of NEI insurers. It is proposed that NEI reserves be determined both temporarily and geographically;
 - 14.2.1. As noted in 8.1 above, house prices vary by location. Therefore where possible, reserves should be set in accordance with local house price risk;
 - 14.2.2. Temporal dispersion is also vital for portfolio construction. Given that lenders and homeowners will have a penchant for higher LTV (80%+) NEI mortgages, insurers could expect to write a portfolio which is more vulnerable to house price falls. However, the NEI portfolio will be more balanced because the homeowner retains a strong interest in maintaining the cover.

The lender may have a lesser incentive in providing the insurance at lower LTVs if the amount of equity available is deemed large enough to cover all the losses arising out of a repossession. Further, risk weights mortgages at those LTV levels are usually low. That being said, the lender may have non-financial incentives to continue providing the cover (e.g. public relations). Nevertheless, a relatively low risk homeowner (e.g. 70% LTV) may still be willing to purchase the insurance provided the premium is attractive enough. This is because the homeowner may be strongly risk-averse but also because his home is not solely a financial asset.

The NEI premium for a 70% LTV is approximately half that of a 90% LTV. Thus, protecting the homeowner offers the NEI insurer the ability to attract an entirely

different class of customers and, in so doing, creating an underwriting portfolio which is intrinsically more resilient to house price falls.

15. The NEI premiums would have comfortably covered losses from the 2008 UK Recession. Under such a condition, the peak loss ratio of NEI insurers would have been 32%. The premiums would have been adequate to cover all claims;
16. The Case-Shiller index indicates that the peak-to-trough fall in US house prices was about 41%. This is approximately twice the fall in the UK. Although such a fall in house prices is unprecedented in the UK and also worse than that used by the Bank of England in its stress test of 2012 (RAMSI: A top-down stress testing model, September 2012), NEI insurers would have withstood the 41% fall in house prices in a significantly better shape than private mortgage insurers.
 - 16.1. The Mortgage Insurance Companies of America reported that the peak loss ratio of private mortgage insurers was 218% (MICA, 2011-2012 Fact Book & Member Directory);
 - 16.2. The comparable peak loss ratio for the NEI insurers would have been 135%; significantly less than that experienced by private mortgage insurers.

Market Structure

17. Insurance, at its core, depends on the estimation of future losses. In turn, this requires an estimation of the frequency and severity of a particular event. A significant challenge to the development of house price insurance products is the limited availability of data. In contrast to other insurance activities, reliable and comprehensive house price data barely goes back a few decades. In the UK, such data only go back about as far as 60 years or so. Given that housing cycles are long-lasting, the frequency and loss severity are hard to estimate. In addition:
 - 17.1. Falling house prices are not random events. Significant house price falls (unlike, for example, car accidents) tend to occur during recessions and across the country – perhaps even internationally when economies are deeply integrated – at roughly the same time. Both recessions and sharp falls in house prices are rare events;
 - 17.2. Estimating the loss severity is challenging: while house prices benefit from a natural floor, the quantum of that floor is *ex ante* unknown.
18. The challenges outlined in 17 are not unique to house price insurance. In particular, these are the reasons why Governments have on more than one occasion supported private insurers and reinsurers:
 - 18.1. The UK Government acts a reinsurer of last resort for terrorism (Pool Re). Through a retrocession agreement, the UK Government provides a guarantee for terrorism-related losses. The US Government fulfils a comparable role through the Terrorism Risk Insurance Act. More generally, terrorism schemes with Government involvement, are available in 11 OECD countries;
 - 18.2. The US Price-Anderson Nuclear Industries Indemnity Act also provides Government insurance for nuclear accidents at non-US military sites.
19. Given the socioeconomic importance of housing, a strong rationale can be made for Government participation in mortgage markets. While specific forms of Government involvement will vary across jurisdiction, in those where private insurance markets can provide competitive coverage, the Government should consider acting as a reinsurer of last resort. If appropriately carried out, such an intervention:
 - 19.1. Will not crowd out the private sector; but will complement the private insurers;
 - 19.2. Can enhance financial stability.

Appendix 2 provides a structure and rationale as to why and how the UK Government could fulfil such a role. We note that the Canadian government fulfils such a role in providing traditional MI. We further note that the US Congress is considering a similar proposal for reforming the GSEs.

Conclusion

20. In this commentary, we have shown how the most significant challenges faced by MI can be addressed by an innovation in MI product design. This innovation resolves the alignment of interest concerns and encourages both lenders and insurers to continue performing vital financial intermediation and risk-taking activities in a responsible manner. Further this innovation protects homeowners against house prices falls for the first time.

Appendix 1: Analysis of an under-pressure NEI Mortgage

21. We define an under pressure mortgage as one incurring a repayment loss or a collateral loss or both. The plausible set of repayment and collateral loss is shown in the table below.

Collateral Loss	Repayment Loss	
	No, No	No, Yes
Yes, No	Yes, Yes	

22. In the first quadrant (row 1, column 1), the loan performs well. There is no collateral loss and all payments are up to date.

23. In the second quadrant (row 1, column 2), the homeowner has fallen behind on his mortgage payments but there is no collateral loss. Should there be sufficient equity in the home (e.g. house prices rising, the mortgage balance being reduced, etc), then such a situation would not be viewed as a major problem for the lender as long as any arrears could ultimately be recovered from the home.

24. In the third quadrant (row 2, column 1), the homeowner is current on his mortgage payments but a collateral loss has occurred. Should the homeowner agree to or need to move, NEI would be used to make up the shortfall on the mortgage balance. The implications for the relevant parties are that:

24.1. The lender incurs no loss on the mortgage: the negative equity shortfall is covered fully by the NEI insurer;

24.2. The NEI insurer disposes of the home is sold in an arm's length sale (12). The NEI claim process, which avoids a repossession, provides the best chance for the asset to be sold for its market value;

24.3. The homeowner can exit the home without any loss of savings and without incurring any transaction costs. His credit history is unaffected. His future ability to borrow – and more generally his ability to function as a productive economic agent – is not constrained;

24.4. Traditional MI would be of no use to homeowners in such a situation.

25. In the fourth quadrant (row 2, column 2), the homeowner has fallen behind and there is collateral loss. By their very nature, such situations present a formidable challenge for the lender, homeowner, traditional MI and NEI.

25.1. If all other options have been exhausted (including possible workout strategies with traditional MI providers where applicable), then the lender may have no incentive but to repossess. Subject to any coverage limit, the MI provider would be responsible for two main categories of losses:

25.1.1. The difference between the outstanding mortgage balance and the home sale proceeds. The outstanding mortgage balance reflects the repayment loss (i.e. arrears) and the collateral loss, which is magnified by both the fall in house prices and the discount to market this particular asset is likely to attract (1.3.3 and 1.3.4);

- 25.1.2. The transaction costs associated with the sale of the home. These could also be significant. Under some instances, the MI provider may also have to bear the various fees imposed by a lender whenever the home is repossessed.
- 25.2. Depending on the coverage limit, payouts from the MI provider may not cover the entirety of losses incurred by the lender. In addition and as noted by the Joint Forum, lender expectation that the MI provider would cover all or most of the losses may incentivise the lender to repossess (6.5 and 6.6). This expectation also raises alignment of interests concerns;
- 25.3. Independently of the lender-MI provider relationship, the homeowner suffers from a repossession (1.3.3);
- 25.4. NEI provides an alternative which could be appealing:
- 25.4.1. Both lenders and homeowners have an incentive to consider a workout which is independent of the collateral risk. This could be a viable strategy to pursue given the alternative course of action available. Possible workout options include:
- Switching the borrower from a repayment to interest-only mortgage (a commonly used forbearance strategy in the UK). The lender is not required to take a negative equity charge (depending on accounting treatment);
 - Subject to the borrower's agreement, the lender could transfer some or all the arrears to unsecured lending. Although the interest rate on an unsecured loan may be higher, this compensates the lender for taking additional risk. The borrower also benefits since his negative equity is fully repaid if he moves home and he has additional time to repay the unsecured loan. This option is particularly valuable if the arrears were caused by a temporary loss of income.
- 25.4.2. The firewall between the two broad categories of losses result in the NEI insurer only covering collateral losses. Further, the mechanism through which the home is sold and loss crystallised is optimal in terms of harvesting value and keeping transaction costs to a minimum;
- 25.4.3. There is no misalignment of interest between lender and insurer or between lender and homeowner.

Appendix 2: The UK Government Acting as a Reinsurer of Last Resort

26. The UK Government could act as a reinsurer of last resort in the following manner:

- 26.1. Private insurers and reinsurers will assume the negative equity risk equivalent to up to a 50% fall in house prices;
- 26.2. The UK Government, through a retrocession agreement, will provide a backstop to cover any losses above that limit. Such an event – i.e. house price falls above 50% - is unprecedented in the UK;
- 26.3. The private insurers and reinsurers will pay a reinsurance fee to the UK Government;
- 26.4. A “loss-recovery” mechanism will be put in place: any losses suffered by the Government will need to be covered in full by the private sector before future profits can be earned. In effect, the UK Government’s role can be viewed as providing an overdraft facility.

27. If a repeat of the UK 2008 Recession were to occur, all the losses incurred would be covered by the private sector. The same conclusion would hold for any other recession post World War II. Prior to that time, reliable house price data for the UK are not available. Therefore, had the aforementioned scheme been in place over the last 68 years, the government guarantee would never have been called upon.

28. However, UK house prices could experience an unprecedented fall. In particular, a Japanese style scenario (where house prices fell by more than 50% in the late 80s and early 90s) should be considered, however remote. House prices in certain cities in the US (e.g. Phoenix, Miami, Las Vegas, etc) also fell by more than 50% during the 2008 recession. While the probability of such falls in UK house prices is remote (beyond a 1 in 200 scenario in insurance parlance), it is not zero.

29. The likely macroeconomic consequence of a fall in house prices greater than 50% is a decline in GDP exceeding that of the Great Depression. In relative terms, the output loss would be more than twice that experienced during the 2008 Recession. It is therefore reasonable to expect that policymakers (both the fiscal and monetary authorities) would use every tool in the box to prevent it. For example, the United States Government implemented a Home Affordable Modification Program (HAMP) following the 2008 Recession. This program provides taxpayer support for lenders to reduce mortgage principal for those who are in negative equity. Although HAMP’s costs are expected to run into the tens of billions of dollars, the US Treasury has no way of recouping such losses. The proposals described above provide a solution whereby future house price related losses can be ultimately borne by the private sector without the Government being out of pocket.