



IAIS

INTERNATIONAL ASSOCIATION OF
INSURANCE SUPERVISORS

PUBLIC

Systemic Risk from Insurance Product Features

**(previously referred to as Non-traditional Non-
insurance activities and products)**

16 June 2016

About the IAIS

The International Association of Insurance Supervisors (IAIS) is a voluntary membership organization of insurance supervisors and regulators from more than 200 jurisdictions. The mission of the IAIS is to promote effective and globally consistent supervision of the insurance industry in order to develop and maintain fair, safe and stable insurance markets for the benefit and protection of policyholders and to contribute to global financial stability.

Established in 1994, the IAIS is the international standard setting body responsible for developing principles, standards and other supporting material for the supervision of the insurance sector and assisting in their implementation. The IAIS also provides a forum for Members to share their experiences and understanding of insurance supervision and insurance markets.

The IAIS coordinates its work with other international financial policymakers and associations of supervisors or regulators, and assists in shaping financial systems globally. In particular, the IAIS is a member of the Financial Stability Board (FSB), member of the Standards Advisory Council of the International Accounting Standards Board (IASB), and partner in the Access to Insurance Initiative (A2ii). In recognition of its collective expertise, the IAIS also is routinely called upon by the G20 leaders and other international standard setting bodies for input on insurance issues as well as on issues related to the regulation and supervision of the global financial sector.

International Association of Insurance Supervisors c/o Bank for International Settlements
CH-4002 Basel
Switzerland
Tel: +41 61 225 300
Fax: +41 61 280 151
www.iaisweb.org

© International Association of Insurance Supervisors (IAIS), 2016.

All rights reserved. Brief excerpts may be reproduced or translated provided the source is stated.

Preface

In July 2013, the IAIS published a framework of policy measures for global, systemically important insurers (G-SIIs), which included a classification table of typical insurance products and activities.¹ Interactions with stakeholders showed that the notion of Non-traditional Non-insurance (NTNI) activities and products required further clarification. As described in the IAIS report, Insurance and Financial Stability², two important factors for assessing the systemic importance of insurers are NTNI activities and Interconnectedness. However, the IAIS recognises that there may be some conceptual overlap between these two categories. The 2015 consultation further revealed that a number of stakeholders consider the term Non Traditional (NT) to be confusing. Based on these considerations, the IAIS has decided to discontinue using the NTNI product label. The IAIS has decided to replace the NTNI label with a more granular and nuanced assessment of product features, which maintains the consideration that subject to their characteristics or features, certain insurance products may have a greater potential to pose systemic risk. This paper sets out the rationale for the IAIS's revisions to the NTNI definition and a detailed description of Potentially Systemic Insurance Product Features.

In late 2015, the IAIS launched a consultation soliciting feedback from stakeholders on the NTNI definition and the relevant conclusions described in the consultation document.

This document revises and clarifies the concepts of substantial liquidity risk and macroeconomic exposure³ (e.g. if a firm's financial position is highly correlated with the broader economy, the risk of systemic impact from insurance failures increases) described in the consultation document, after reviewing the comments provided and further discussions among IAIS Members.

As noted in the consultation paper, this work is intended to provide further clarification on the notion of NTNI, in particular NT, and explain how product characteristics drive the systemic relevance. In particular, the 2013 G-SII Assessment Methodology contained some indicators in the NTNI category (e.g. derivatives trading (CDS sold), minimum guarantees on variable products, and financial guarantees) that serve as a proportionate approximation for the sensitivity of an insurer's entire balance sheet to macroeconomic stress.

The IAIS recognises that these simplified indicators are proxies and notes that they do not capture some of the different ways that an insurer could be correlated with the broader economy. Therefore, the IAIS is committed to a continuing development of alternative metrics and reviewing these indicators accordingly, in order to refine the measurement of macroeconomic exposure. This ongoing review will include the development of alternative approaches to better measure an insurer's macroeconomic exposure, including but not limited to, the various methods and tools within the ICS framework to measure macroeconomic exposure across an insurer's whole balance sheet.⁴ This ongoing review will also include a review of the calibration of the liability liquidity indicator. If necessary, the IAIS will publicly consult throughout the continuation of this ongoing work. The continued development of metrics and indicators to measure macroeconomic exposure should lead to a consistent application across jurisdictions.

¹ See Global Systemically Important Insurers: Policy Measures, 18 July 2013

² See Insurance and Financial Stability, November 2011

³ Referred to as (substantial) market risk in the G-SIIs Policy Measures document

⁴ The completed outcome of this ongoing review will be of relevance to the development of HLA. The IAIS's work on the ICS, however, does not depend on this framework

As discussed in more detail throughout this document, products that have features that expose the insurer to substantial macroeconomic risk (including credit guarantees) or substantial liquidity risk through the exposure and asset liquidation transmission channels contribute to higher systemic potential of insurers.

Regarding the list of products affected by the macroeconomic exposure assessment ('substantial market risk' in the consultation), the IAIS has decided to remove any double counting between the derivatives and minimum guarantees on variable products indicators in the G-SIIs Assessment Methodology, particularly in light of the consultation feedback received. It is worth noting though that the list of product features, and by extension products, remains unchanged from the current methodology.

Scope of this document

This paper is not meant to be a comprehensive analysis of the different ways an insurer's financial distress could be transmitted to the broader economy.

It is only focused on insurance product features and related activities that may raise the potential for an insurer to pose systemic risk upon failure. The following sources of risk are beyond this scope and are not directly considered:

- sector-wide risks related to the aggregate exposure of the insurance industry which do not stem from the failure of a single institution;
- risks that are related to size, global activity, or substitutability, and are not directly related to the transmission channels of exposure and asset liquidation;
- risks related to the transmission channels of exposure or asset liquidation that do not stem directly from insurance product features – this includes but is not limited to intra-financial assets and liabilities, level 3 assets and short-term lending;
- risks stemming from non-insurance activities.

Glossary of abbreviations

BIS	Bank for International Settlements
CDS	Credit Default Swap
FSB	Financial Stability Board
G-SIBs	Global Systemically Important Banks
G-SIIs	Global Systemically Important Insurers
G20	Group of Twenty Countries
HLA	Higher Loss Absorbency
IAIS	International Association of Insurance Supervisors
ICS	Insurance Capital Standard
IMF	International Monetary Fund
NTNI	Non-traditional Non-insurance

Contents

Preface	3
1 Introduction	7
2 The “Non-traditional” Product Label	8
3 Transmission Channels.....	8
4 Macroeconomic Exposure and Substantial Liquidity risk	10
4.1 Macroeconomic Exposure	10
4.1.1 Contractual Features-Based Assessment of Macroeconomic Exposure	10
4.1.2 Potential mitigating and exacerbating factors on Macroeconomic Exposure.....	15
4.1.3 Envisioned evolution in the IAIS’s assessment of Macroeconomic Risk.....	16
4.2 Substantial Liquidity Risk	16
4.2.1 Assessment of Substantial Liquidity Risk	17
4.2.2 Delays in Access	17
4.2.3 Economic Penalty Relative to Account Value	17
4.2.4 Potential Mitigating and Exacerbating Factors on Substantial Liquidity Risk.....	17
5 Indicators in the G-SII Assessment Methodology	19
5.1 Contractual Approach to the Minimum Guarantees on Variable Products Indicator	20
5.2 Liability Liquidity indicator	20
5.3 Phase III considerations	21
6 Implications for HLA and BCR	25
7 Relationship with NTNI Principles in the 2013 Policy Measures Document.....	25
8 References	26

NTNI Transmission Analysis

1 Introduction

- 1.1. Since its introduction the Non-traditional (NT) concept and the label itself have been seen as confusing. The 2013 G-SII Policy Measures document did not provide stakeholders with a detailed explanation of the framework.
- 1.2. In 2015, the IAIS therefore decided to issue a consultation document on the NTNI definition. This document builds on the discussions among IAIS Members and the feedback received from stakeholders. The IAIS decided to discontinue the NTNI product label and to focus on substantial liquidity risk and macroeconomic exposure and their related systemic risk transmission channels.
- 1.3. It should be noted that this paper does not cover the full spectrum of aspects within insurance that can be of systemic relevance. It is not meant to be a comprehensive analysis of the different ways an insurer's financial distress could be transmitted to the broader economy. At the core of the analysis are the transmission channels and the features of products and activities that could contribute to systemic impact upon failure.
- 1.4. Other sources of systemic risk including the case where a set of firms in one or several jurisdictions (or the insurance sector as a whole) has exposures that are correlated with market movements⁵ warrant supervisory attention but are not within the scope of this paper. These sources of risk require tools that are applied more broadly to the sector. The IAIS will consider alternative approaches to better measure an insurer's macroeconomic exposure, including, but not limited to, the consideration of various methods and tools within the ICS framework currently being developed.
 - **Section 2** provides a more in-depth discussion on why the NTNI label was discontinued.
 - **Section 3** outlines the two main transmission channels of Asset Liquidation and Exposure.
 - **Section 4** provides a high-level overview on the two sets of risks used to identify whether product features are likely to expose an insurer to a greater degree of systemic risk:
 - *Macroeconomic exposure*: in addition to the IAIS's rationale for considering this source of risk, this sub-section discusses 1) the current approach to measuring macroeconomic exposure based on insurance contract features and 2) how this approach could evolve in subsequent reviews to cover the macroeconomic risks stemming from the full balance sheet of an insurer.
 - *Substantial liquidity risk*: this sub-section sets out the IAIS's rationale for considering this source of risk and the key aspects in measuring it for the purposes of G-SII designation.
 - **Section 5** gives a brief outline of how the framework has been translated into the indicators used for G-SII designation. Further details of this are set out in the G-SII Assessment Methodology document.
 - **Section 6** briefly outlines the process for how this paper and the G-SII Assessment Methodology document should be considered as part of the review of the BCR/HLA in 2017.
 - **Section 7** explains the relationship with the NTNI Principles in the 2013 G-SII Policy Measures document.

⁵ Cf. International Monetary Fund Global Financial Stability Report (April 2016), pp. 90ff.

2 The “Non-traditional” Product Label

- 2.1 The IAIS’s 2013 initial G-SII Initial Assessment Methodology (the 2013 Methodology) set out a framework whereby systemic risk in insurance could be measured by indicators grouped into five categories: (i) Non-traditional Non-insurance activities; (ii) interconnectedness; (iii) size; (iv) global activity; and (v) substitutability. The G-SII Policy Measures set out three principles for identifying Non-traditional insurance products and Non-Insurance activities.
- 2.2 These three principles set forth in the 2013 paper were intended to guide the determination of whether activities are classified as traditional or non-traditional non-insurance.⁶ Because the IAIS has discontinued the term NTNI, the first two NTNI principles in the 2013 IAIS G-SII Policy Measures document will no longer be used, having been superseded by the more detailed assessment set out in this document. Section 7 nevertheless sets out a revised high-level description of the concept that better focuses on the anchor points of this analysis – the potential transmission of macroeconomic exposure and substantial liquidity risk through the asset liquidation and exposure channels. Unlike the previous NTNI Principles, this description is not intended to provide criteria for a binary classification of insurance products. On the contrary, it is merely intended to provide a concise summary of the revised framework.
- 2.3 Apart from these Non-traditional insurance products, insurers can also engage in activities that may more appropriately be categorised as “shadow banking” than insurance and thus may be captured by the term Non-insurance. Investment and funding or other capital market activities that result in maturity or liquidity transformation, leverage or imperfect transfer of credit risk, such as repo and securities lending, should be considered potentially systemic non-insurance activities.
- 2.4 The 2015 IAIS consultation sets out a description of certain insurance product features that could be identified as likely to expose the insurer to “Substantial Market Risk” or “Substantial Liquidity Risk”. Feedback on the consultation revealed that the NT concept and the framework were confusing. Furthermore, Substantial Market Risk was largely interpreted as a micro-prudential concept that was inappropriate for the analysis.
- 2.5 In reviewing the framework, the IAIS has therefore chosen to discontinue the NTNI term and to replace the term “Substantial Market Risk” with the term “Macroeconomic Exposure” as the latter captures more accurately the nature of the transmission channel. Overall, the main focus is on the two most relevant underlying transmission channels: exposure and asset liquidation.

3 Transmission Channels

- 3.1 According to the FSB, IMF and BIS in their 2009 Report to the G-20 Finance Ministers and Central Bank Governors, systemic risk is the potential of “disruption to the flow of financial services that is (i) caused by an impairment of all or parts of the financial system; and (ii) has the potential to have serious negative consequences to the real economy.” More specifically, when applied to insurers, systemic impact can materialise “through contagion (where policyholders or markets consider that similar problems may exist in similar products from other insurers) and financial links (for example, in

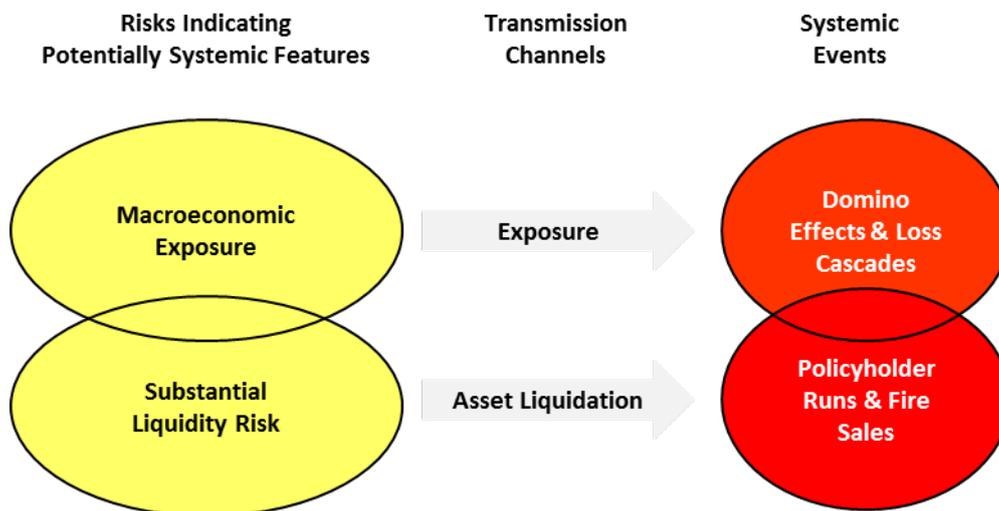
⁶ IAIS G-SII Policy Measures Paper, 18 July 2013, at pp. 13-14.

the derivatives markets) and may have an impact on the broader economy through a failure to make good on promises to policyholders or to engage in new transactions that would foster economic activity.”⁷

3.2 This paper analyses how certain contractual insurance policy features and the investment and risk-management practices an insurer undertakes in managing them may contribute to systemic impact upon the failure of an insurer. It also describes the associated channels by which losses could be transmitted to third parties. As discussed in more detail throughout this document, product features and related activities that expose the insurer to substantial macroeconomic risk (including credit guarantees) or substantial liquidity risk should be considered to have potentially systemic insurance product features.

3.3 A simplified illustration of the mechanics of the risk transmission is given in figure 1. Each element depicted is explained in further detail in the subsequent sections.

Figure 1: Simplified Assessment Framework



3.4 It is in particular worth noting that a single insurance product could propagate systemic risks through different channels. The specific details on how these features are incorporated in the G-SII Assessment Methodology are briefly outlined in Section 6 but are covered in more detail in the G-SII Assessment Methodology document.

3.5 Three channels for systemic risk transmission are considered: (i) the exposure channel; (ii) asset liquidation channel; and (iii) the critical function or service channel⁸. The IAIS has evaluated these channels and concluded that the two most relevant systemic risk channels for the analysis of insurance product features in this context are the *exposure* and *asset liquidation* channels, as defined below:

- **Exposure Channel:** A shock to the insurer may spread more easily to other financial institutions or markets where there are direct and indirect exposures of creditors, counterparties, investors or other market participants.

⁷ See Financial Stability Board (2014).

⁸ The IAIS has not finally concluded on the concept of critical functions in insurance.

- **Asset Liquidation Channel:** An insurer could be forced to liquidate assets quickly and on a scale that, exacerbates market movements and contributes to asset price volatility. Such asset sales could impact asset prices and thereby disrupt trading or funding in key markets, potentially triggering losses for other firms with similar holdings.

4 Macroeconomic Exposure and Substantial Liquidity risk

4.1 In its 2011 paper, *Insurance and Financial Stability*, the IAIS noted that insurance relies on the premise of *insurability*, which is defined by several criteria. This framework focuses on two of them: (1) whether there are a large number of uncorrelated and homogeneous risks (i.e. losses are subject to the law of large numbers); and (2) whether the losses are accidental (i.e. not controlled by the insured). The following two sections describe the analysis starting from these criteria.

4.1 Macroeconomic Exposure

4.2 As a result of the characteristic of insurance that the losses are subject to the law of large numbers, insurers are able to largely diversify away idiosyncratic losses and accurately estimate expected losses across their portfolio. The limitation of such idiosyncratic losses, affecting particular firms rather than the broader financial system, is largely the domain of micro-prudential regulation.

4.3 One way that systemic as opposed to idiosyncratic risk can arise is through common exposures to macroeconomic risk factors across institutions.⁹ In such cases, the underlying exposures are highly correlated with each other and with the market, limiting the potential to diversify through the pooling of idiosyncratic risks. If a firm's financial position is highly correlated with the broader economy, the risk of systemic impact from insurance failures increase. Losses given default will be higher when the economy is already under stress.

4.4 All three of the transmission channels identified could conceivably play a role in this. Under the exposure channel, counterparties will have, on average, diminished capacity to bear losses making a domino effect more likely. Additionally, externalities from asset sales will be higher under stress as liquidity is typically reduced. Finally, although less of a focus for this analysis, the relative scarcity of capital during macroeconomic stress makes market entry more difficult and will lower substitutability, potentially increasing the costs of market withdrawal for important functions and services.

4.1.1 Contractual Features-Based Assessment of Macroeconomic Exposure

4.5 The contractual benefit features considered are described with the accompanying varieties to be analysed in the table below. The combinations of these features considered should cover the vast majority of insurance products sold across jurisdictions.

⁹ Cf. IMF (2016)

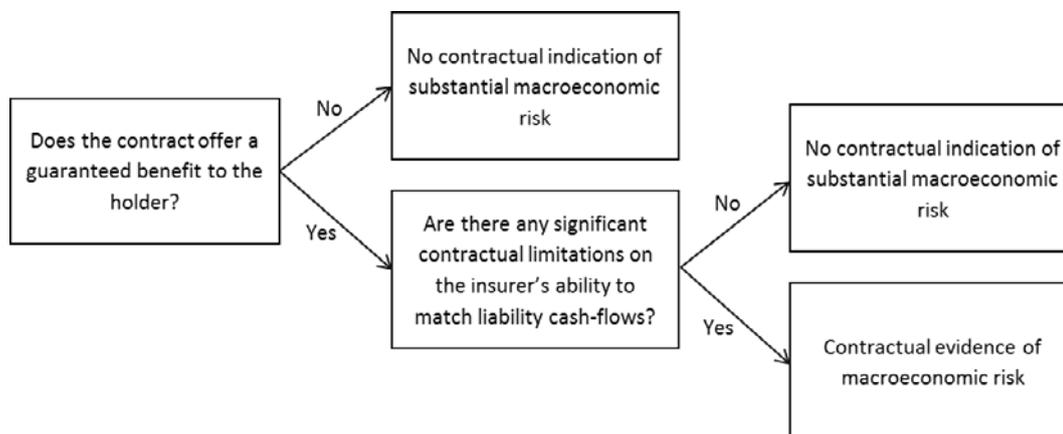
Contractual Feature	Varieties to be analysed
Product type	Indemnity, covering a particular loss, e.g. theft or medical expenses
	Fixed benefit, e.g. paying a regular distribution to the insured over their lifetime or a lump sum on death or survival to a particular age
	Profit participation, where policyholders share in profits of the insurer
	Unit linked or property linked, where benefit is related to the performance of an underlying fund or set of assets
Contractual Guarantees ¹⁰	No guarantees provided
	Guarantees on: <ul style="list-style-type: none"> - vested benefits (e.g. declared bonuses for participating products or 'ratchet up' features on linked benefits) - future benefit accruals (e.g. interest guarantees or fixed minimum bonus levels)
	Credit guarantees, e.g. credit default swaps, financial guarantee or mortgage insurance
Extent to which an insurer can invest in order to match cash-flows of liabilities	Significant contractual limitations on the insurer's ability to align asset and liability exposures by matching liability cash-flows
	- No significant contractual limitations on ability to match liability cash-flows (the insurer has the discretion to invest to match the liability cash-flows)

4.6 The current assessment of the degree to which a benefit feature could expose the insurer to macroeconomic risk has two steps. The first step is to identify whether a material benefit guarantee applies, thereby transferring a risk from the policyholder to the insurer. The second step is to determine whether the insurer is able to invest the assets backing the guarantee in a manner that aligns the asset and liability exposures or, put differently, that matches the benefit cash-flows of the applicable guarantee. This is depicted in Figure 2.

4.7 Beyond the contractual features, there may be additional influences that are relevant to the discussion of systemic risk but go beyond certain product features and/or require consideration of qualitative aspects. These effects could exacerbate or mitigate the systemic effects.

¹⁰ Note that guarantee in this context focusses on explicit minimum benefit guarantees (i.e. those made in the contract) and does not, for instance, include implicit assumptions made in product pricing.

Figure 2: 2-step contractual assessment of exposure to macroeconomic risk



4.8 Under step 1 of the assessment framework, the IAIS is assessing whether the product has a contractual feature providing a guarantee. The step 1 column in the table below lists the various guarantees being considered by the IAIS.

4.9 For the purposes of step 2 of the assessment framework, cash-flow matching refers to the extent to which insurers can invest to replicate the benefit guarantees. Limitations to cash-flow matching are based on specific contract clauses that directly or indirectly limit the insurer's ability to replicate benefit guarantees in the way they invest the backing assets. It is important to note that this assessment focusses entirely on the contractual features or characteristics of a product, taking any such limitations on the ability to align asset and liability exposures as a proxy for the degree of market or macroeconomic risk actually assumed by the insurer. Therefore, any market risks assumed by the insurer which are not directly related to such contractual limitations on the product are not taken into account by this approach. The IAIS in particular recognises that this assessment focusses on the liability side only, ignoring risks stemming from the way assets are actually managed by the insurer in practice. Such considerations would require an approach that spans both sides of the balance sheet, and will be developed as part of the on-going work of the IAIS in this area (as set out in the next section). Specifically, for the purpose of the contractual features approach only, the following points are not considered in the assessment of the ability to cash flow match:

- **Issuer default:** the possibility of issuers defaulting on the matching assets.
- **Surrender options:** an inability to match policyholder options to surrender a policy or lapse.
- **Richness of guarantees:** the possibility that insurers offering very rich interest rate guarantees may not be able to cash-flow match their liabilities because the guaranteed rate exceeds the return on the insurer's invested assets.
- **Reinvestment risks:** even where guarantees do not exceed the rates of return available on assets, an insurer may be unable to match liabilities at long maturities due to a lack of fixed-income assets of a sufficient duration. Since the ability to match is limited to contractual considerations, this approach does not consider any such reinvestment risks faced by insurers.

4.10 Even under this contractual approach, however, these points are very important aspects to be considered by supervisors in the broader designation process (cf. section 5.3 on Phase III considerations below).

4.11 Two further points are worth noting on the application of this approach:

- The assessment of cash-flow matching in step 2 does not take into account matching through the use of derivatives. The IAIS recognises that the use of derivatives may be an effective risk-mitigating tool for specific types of product features and should not be discouraged. However, it is also recognised that while derivatives may be effective in mitigating micro-prudential risk, from a macro-prudential perspective they may act merely to transfer market exposures to other market participants without necessarily eliminating them. This framework therefore does not consider derivative hedges as a mitigation of macro-prudential risk, but neither does it penalise firms for carrying out such hedging. Indeed, the value of the derivatives used for hedging purposes is deducted from the Minimum Guarantees on Variable Products indicator, in order to avoid hedged writers of such guarantees drawing a higher designation score than unhedged writers in the G-SII Assessment Methodology (cf. section 5.1).
- Any contractual inability to match benefit guarantees, whether the backing assets are managed in a separate fund or not, should be considered as part of this assessment.

4.12 Each of the benefit combinations are analysed individually in the table below.

Nature of the benefit	Step 1: Guarantee	Step 2: Contractual limitations on cash flow matching	Is there substantial macroeconomic risk?
Indemnity (covering a particular loss, e.g. theft or medical expenses)	Not applicable	Asset restrictions are rare.	Indemnity policies provide cover for a specific loss, not a guaranteed value, and thus do not expose the insurer to substantial macroeconomic risk.
Fixed benefit (e.g. paying a regular distribution to the insured over their life time or a lump sum on death or survival to a particular group)	Guarantees on future accruals (such as interest guarantees)	Asset restrictions are rare. Insurers are not contractually limited in their ability to invest in fixed income assets which could provide the cash flows required to meet contractual obligations.	For these products insurers are able to limit the guarantees they offer on benefits to rates of investment return they earn on their backing assets, or that they are able to secure under the current market conditions. This contractual ability to align the liability and asset exposures means insurers are able to avoid taking on substantial macroeconomic risk. Where insurers do not in practice align their asset and liability exposures, fixed benefit

			policies with guaranteed benefit accruals may expose the insurer to movements in interest rates, and therefore to macroeconomic risk. Under the contractual approach, supervisors should consider such mismatches in making the overall designation assessment (as set out in the Phase III considerations in section 5 below).
Profit participation (where policyholders share in profits of the insurer)	Guarantees on vested benefits or future accruals (such as interest guarantees)	Insurers generally are contractually able to invest to match the guarantees offered; however, liabilities may go unmatched in practice to allow for greater bonus accumulation.	In the same manner as fixed benefit guarantees, insurers are able to limit the guarantees they offer on such products to the rates that can be earned on backing assets, or that they are able to secure under the current market conditions. Where they are left unmatched, however, these guarantees could expose the insurer to substantial macroeconomic risk (again this should be considered as part of Phase III, as set out in section 5 below).
Unit linked / variable annuity (where benefits are related to the performance of an underlying fund or set of assets)	No guarantees provided	Cash flows are matched by construction as the liability is determined by the value of the assets.	Insurers, serving as a pass-thru for investment returns (i.e. the insurer does not guarantee performance), and are therefore generally not exposed to market or macroeconomic risk through these products.
	Guarantees on vested benefits or future accruals	The underlying assets are typically held in a combination of fixed and variable investments. Asset-liability matching is therefore not possible without the use of derivatives, which from a macro-prudential perspective may merely serve to transfer the macroeconomic exposure to a third party.	Losses accrue to the insurer's balance sheet through the guarantee. Furthermore, due to the variability of liabilities, the insurer cannot effectively match asset and liability cash-flows without the use of derivatives. These products are therefore likely to expose the insurer to a high degree of macroeconomic risk and for this reason are used as a proxy for the correlation with the market.

Selling of credit protection	Guarantees on the value of the reference assets	Default events are unpredictable, limiting the insurer's ability to carry out asset-liability matching.	These product features guarantee the value of some asset, which exposes the insurer to movements in asset or market prices. Trigger events are often highly correlated with market cycles and, as a result, these guarantees can expose the insurer to substantial macroeconomic risk.
------------------------------	---	---	--

4.1.2 Potential mitigating and exacerbating factors on Macroeconomic Exposure

4.13 Outside of the insurance contract features listed above, there may be additional factors that are relevant to the discussion of systemic risk. These factors, in practice, do affect the systemic risk assessment of an insurer. As described in section 5.3, while these factors are not currently used in calculating the indicators in the macroeconomic exposure sub-category, they are relevant for consideration as part of Phase III (the Discovery Phase) in the process for the Identification of G-SIIs. These factors include, but are not limited to:

- The lack of suitable assets could exacerbate the risk embedded in certain products and jurisdictions. For example, in the recent low interest rate environment, certain fixed benefit or annuity policies may have exhibited a substantial duration gap, i.e. there are insufficient quantities of long-tenor assets to match liabilities. As a result, insurers may be exposed to reinvestment risk where they have had to resort to investing in shorter-tenor assets and rolling over the positions when the assets mature. Also, data on the duration are based on assumptions for particular business models specific to national requirements that need to be taken into account during the assessment. This includes the treatment of future profit participation, which would be dependent on the economic environment. Therefore, data may overstate or understate the duration of the liability side - specifically in cases where a firm uses conservative or aggressive reserving assumptions. As a result, ALM risk as measured by the duration gap needs to be evaluated carefully and where possible amended appropriately based on verifiable analysis. In many jurisdictions, insurers have to carry out rigorous cash flow testing to test their ability to pay claims as they come due. Many insurers use a range of stochastic and deterministic scenarios to test these parameters in various stress situations – beyond the normally expected payment of claims. This testing may better prepare for periods of stress.
- Insurers may have tools at their disposal to potentially mitigate the impact of macroeconomic exposure on particular contract features. Some firms have contractual ability to adjust premiums when guarantees are in the money. Such instruments could limit the transmission of a market shock. They could also possibly have unintended consequences when exercised by creating a fear among policyholders that they will not have access to their funds and triggering higher lapses and surrenders.
- In addition, any contractual ability to align the liability and asset exposures needs to be seen in conjunction with the contractually determined actuarial calculations

for the undertakings' specific business model under national law. This contractual ability to align the liability and asset exposures could potentially mitigate the impact of macroeconomic exposure on particular contract features.

4.1.3 Envisioned evolution in the IAIS's assessment of Macroeconomic Risk

4.14 The IAIS recognises that these simplified indicators are proxies and notes that they do not capture some of the different ways that an insurer could be correlated with the broader economy. Therefore, the IAIS is committed to a continuing development of alternative metrics and reviewing these indicators accordingly, in order to refine the measurement of macroeconomic exposure. This ongoing review will include the development of alternative approaches to better measure an insurer's macroeconomic exposure, including but not limited to, the various methods and tools within the ICS framework to measure macroeconomic exposure across an insurer's whole balance sheet. This ongoing review will also include a review of the calibration of the liability liquidity indicator. If necessary, the IAIS will publicly consult throughout the continuation of this ongoing work. The continued development of metrics and indicators to measure macroeconomic exposure should lead to a consistent application across jurisdictions.

4.2 Substantial Liquidity Risk

4.15 The second key criterion of insurability is that losses should be accidental, i.e. not influenced by the insured. Product features allowing for payments that are not triggered by the occurrence of an insurable event, such as surrenders or other withdrawals, depart from this definition of insurability and may have features that make them closer in nature to deposits. These product features are the focus of this section setting out higher systemic potential stemming from substantial liquidity risk. The IAIS also recognises that the analysis needs to consider any incentives or disincentives for early repayment.

4.16 Bank runs are a commonly cited example of a systemic event. Runs can occur because of a bank's balance sheet profile: liquid liabilities are used to fund long-term, illiquid assets. Because the assets cannot all generally be sold at face value, the position of a depositor in the "queue" to redeem deposits will directly affect the amount they will receive on their claim. This mechanism provides an incentive to be the first in line, creating a possible dynamic where rational depositors all run based on their expectations of other depositors' behaviour. A bank run can have spill-over effects on the real economy as the run could cause the bank to withdraw funding to productive investment or cause other "healthy" banks to be run on and fail (contagion).

4.17 Policyholder "runs" are rare in insurance, though they have occurred in the past. Policyholders may have incentives to run, including, but not limited to: (1) market movements (higher external returns, either spikes in interest rates or stock returns could lead to higher lapse rates, while higher internal returns, such as surplus participation, could lead to lower lapse rates); (2) personal financial distress or liquidity concerns; and (3) a general collapse of confidence in a company, product or industry. There have also been several instances where policyholders grew concerned about the financial condition of a firm, either through regulatory action or other public knowledge about potential problems of the firm. These experiences did not necessarily have systemic implications, which potentially could have been caused by a variety of factors, such as regulatory intervention, the size of the insurer, or the

normal economic environment. On the other hand, most of the runs occurred at smaller insurance companies and during a normal economic environment and it is unclear what effect they might have had during a period of significant stress.

4.2.1 Assessment of Substantial Liquidity Risk

- 4.18 Generally speaking, mass surrenders, withdrawals or terminations could be considered as a tail event (albeit with a very large potential impact), which is unlikely to have a single trigger. More likely, a complex interaction between contract features, the state of the insurer, the market environment, individual characteristics and other dynamics will determine the extent to which counterparties have an incentive to surrender. The revised framework therefore sets out a combination of quantifiable factors and areas for supervisory judgement in determining the extent to which product features could increase the risk of a run.
- 4.19 Two key quantifiable factors that the IAIS developed in the 2013 Methodology are (1) the delay in access and (2) the economic penalties applicable to counterparties wishing to withdraw. These factors, unlike the other potential mitigating and exacerbating factors described below, can be divided into discrete quantitative categories to capture the extent to which they may create a disincentive for policyholder withdrawal.
- 4.20 It is acknowledged that those simplifying “product characteristics” do not fully capture the heterogeneity of markets and products and the potentially different behaviours of policyholders. Therefore, it is acknowledged that supervisory judgement also plays a role in the analysis of substantial liquidity risk.

4.2.2 Delays in Access

- 4.21 The more quickly policyholders are able to access their funds, the more likely it is that insurers may have to engage in disruptive fire sales of assets to make the payments promised. The longer the delay, the more opportunities insurers will have to spread the sale of assets over time or to access liquidity through other means. In addition, a substantial delay in access may create a disincentive for counterparties to surrender their contracts.

4.2.3 Economic Penalty Relative to Account Value

- 4.22 The larger the tax, legal or contractual penalties that counterparties must bear on surrender, the smaller the incentive to withdraw funds. Conversely, the smaller the tax, legal or contractual costs that counterparties must bear on surrender, the larger the incentives to withdraw funds. A substantial penalty, by itself, will not remove all surrender risk, as some counterparties may be immune to any monetary disincentive (e.g. in case of panic).

4.2.4 Potential Mitigating and Exacerbating Factors on Substantial Liquidity Risk

- 4.23 With regard to liquidity risk specifically, there is also a range of further factors that cannot directly be translated into an ex ante monetary economic penalty, but that nevertheless provide incentives or disincentives for surrendering policies. Importantly, the incentive to surrender or maintain a contract could vary over time. These specifically include:

- Purpose of the policy: Policies offering protection to holders serve a different economic purpose than products used as a vehicle for saving, which makes them less likely to be seen as deposits. They therefore do not have the same incentives for surrender. In particular, the two quantifiable factors mentioned above do not take into account the purpose of the policy, meaning that the substantial liquidity risk may be overestimated for products that are primarily for protection. Based on this consideration, the NTNI consultation document states that those particularities may override the findings based on a simple penalty/delay of payment categorisation. Therefore, the purpose of the policy and any foregone benefits needs to be carefully taken into account in a holistic assessment of liquidity risk created through products.
- Surrender value relative to market value: The value of surrendering the policy may be different from the market value of the assets backing it at the time of liquidation, creating an incentive to surrender and earn a premium (or disincentive to surrender and realise a loss).

4.24 Other mitigating and/or exacerbating factors also include:

- Replacement of cover: the risk that the policyholder may not be able to obtain coverage or the same amount of coverage for comparable costs.
- Although the economic penalties mentioned above encompass all monetary penalties including tax penalties, there may be other economic penalties to surrendering policies, including loss of tax benefits, for instance through the tax treatment of policies and surrenders.
- Loss of guarantees: the policyholder may forfeit any guarantees associated with the policy, such as guaranteed interest rates or guaranteed minimum living/death benefits.
- Flexibility to lower policy surrender values: A lower benefit on surrender may deter policyholders from forgoing the future benefits of the policy. Under certain circumstances, it may also have the opposite effect of triggering a behaviour that the intervention was intended to prevent in the first place (“self-fulfilling – prophecy”).
- In addition, some supervisors have tools at their disposal, such as the authority to impose stays or lower surrender values that can prevent runs or mitigate the impact of runs on the financial system. However, some Members are concerned that the use of supervisory stays could exacerbate systemic risk through the disruption in market confidence caused by delayed payouts.
- Policyholder protection schemes and mechanisms: Unlike the other points listed above, this does not relate to the contractual features of a product. However, if policyholders are confident that they will still be paid if an insurer fails, they may have less incentive to run. This factor may therefore also be of relevance in some cases. Alternatively, the lack of a credible policyholder protection scheme or mechanism could exacerbate problems on a relative basis.
- It is important to note that contract features, including (but not limited to) premium structure, remaining time in force and fee structure, may also exacerbate or mitigate surrenders.

- To the extent that an insurer has invested in liquid assets, this may mitigate some of the effects of a forced asset liquidation. If faced with sudden liquidity demands, the insurer may be able to sell assets, even in a stressed market, without significantly impacting prices. However, if the insurer has a significant shortage of liquid assets, then it may be forced to sell more liquid assets at a loss, potentially exacerbating market movements in a stressed environment, or failing to meet claims.

5 Indicators in the G-SII Assessment Methodology

5.1 As explained earlier, the revised framework amends the former NTNI category such that the relevant indicators are organised along the transmission channels and are hence included in the Asset Liquidation category and the Macroeconomic Exposure sub-category respectively. The relevant indicators are highlighted in bold. This reclassification is intended to enhance the clarity of the framework through the alignment of the indicators with the transmission channels, maintaining the importance of the indicators in the previous NTNI category. For the sake of completeness, the other three categories within the G-SII Assessment Methodology are also included in the table below.

Category	Sub-category	Indicators
Size		Total Assets
		Total Revenues
Global activity		Revenues derived outside of home country
		Number of Countries
Interconnectedness	Counterparty Exposure	Intra-financial assets
		Intra-financial liabilities
		Reinsurance
		Derivatives
	Macroeconomic Exposure	Derivatives trading (CDS or similar derivatives instrument protection sold)
		Financial guarantees
Asset liquidation		Minimum guarantees on variable insurance products
		Non-policy holder liabilities and noninsurance revenues
		Short term funding
		Level 3 assets
		Turnover
		Liability liquidity
	Substitutability	Premiums for specific business lines

5.1 Contractual Approach to the Minimum Guarantees on Variable Products Indicator

5.2 Under the current framework for determining the products that will be included in the Phase II indicator, the IAIS has determined to address the double counting in the assessment of risks of derivatives and minimum guarantees on variable products. The revised Methodology removes the double counting of hedged exposures by deducting the portion of the derivatives indicator score attributable to hedges of minimum guarantees from the minimum guarantees indicator¹¹. While derivatives do not eliminate the systemic risk created by these exposures for minimum guarantees products, the IAIS believes it is appropriate to avoid the double counting the exposure. Consider, for instance, the cases of hedged and unhedged writers of guarantees on variable products:

- **Unhedged writers** of significant amounts of rich guarantees on variable products could be unlikely to avoid solvency concerns following a significant market downturn. The impact of failure of a major insurer and the ensuing destruction of value passed to debtholders and policyholders – as well as the ensuing fears about the sector – would be far greater if this occurred at the bottom of the market when liquidity is strained and cascades most likely. The revised framework therefore recognises the increased impact of correlation with the broader economy.
- **Hedged writers:** hedging using derivatives may not eliminate market risks from a macro-prudential perspective, but it is unlikely to increase it either. The view of the IAIS is that it is appropriate for insurers to seek to hedge variable market exposures and does not wish to discourage such practices.

5.3 The IAIS is aware that the same adjustment could theoretically be made with regard to other indicators that capture macroeconomic exposure, i.e. Derivatives Trading and Financial Guarantees. However, the IAIS has not introduced such an adjustment taking into account the fact that in practice the double counting in relation to these indicators is not significant and that they will be subject to absolute reference values. Any relevant consideration will be made in any case in Phase III. The issue will be monitored in the context of the review of the methodology.

5.2 Liability Liquidity indicator

5.4 In a standardised framework as used for the liability liquidity indicator, economic penalties and time restraints are important contractual aspects that impact the propensity of policyholders to surrender in stressed conditions. The lower the penalty and the shorter the time restraint, the more likely it is that policyholders may surrender, thus putting the insurer under a considerable liquidity strain under distress. To reflect the difference in severity, a graduated approach is applied. The combination of time restraints and economic penalties determines the weight that liabilities receive under the Liability Liquidity indicator, according to the following table. The IAIS is committed to an ongoing review of the calibration of the liability liquidity indicator.

¹¹ Amended Minimum Guarantees on Variable Products indicator: $\frac{MG_{firm}}{MG_{sample}} - \frac{DMG_{firm}}{D_{sample}}$ (Where 'D' and 'MG' denote the exposures used in the indicators for the firm, the sample or the portion covering hedged minimum guarantees)

		Delay in access		
		None (< 1 week)	Low (< 3 months)	High (> 3 months)
Economic Penalties	None	100%	50%	2.5%
	Low (< 20%)	50%	25%	0%
	High (> 20%)	2.5%	0%	0%

Where:

- Delays in access are based on the average time between the request by a policyholder and the settlement under the normal course of business.
- Economic penalties include all contractual monetary penalties that insurers can impose on policyholders that surrender early.

5.5 To reflect the fact that reasons for early surrender are multifaceted and cannot always be fully reflected in general Methodology, further mitigating and accelerating factors are assessed in Phase III in order to get a more encompassing picture.

5.3 Phase III considerations¹²

5.6 The 2016 G-SII Assessment Methodology is based on quantitative outputs that are complemented by an important additional assessment phase (Phase III) in which additional information, including qualitative and quantitative considerations, are taken into account. The qualitative and quantitative elements in Phase III enable the IAIS to understand and assess systemic risk within the global insurance industry. In particular, Phase III allows for an assessment that reflects the heterogeneity of structures, activities, products, exposures and geographies within the global insurance industry, and differences in data quality reported across insurers and across jurisdictions.

5.7 The following factors should be considered when applying supervisory judgment in the interpretation of the score (Phase III). These additional factors serve the purpose of having a more accurate measure of the indicators of Minimum Guarantees on Variable Products and Liability Liquidity. They aim to provide additional insights for the assessment of the systemic relevance. Some of those factors are difficult to measure.

¹² Phase III of the G-SIIs Assessment Methodology is discussed in detail in the Methodology document.

Minimum guarantees on variable products

1. Degree to which liabilities of firms are cash-flow matched in practice	
Rationale	The minimum guarantees indicator is based on a contractual assessment of the ability of firms to match the cash flows arising from guarantees. Firms may, in practice, be restricted (or choose to restrict) the degree to which cash flows can be matched. This should be taken into account in Phase III. However, any data provided by firms must be interpreted with caution as the calculation of the duration of liabilities is based on assumptions.
Example of mitigating factor	A small or no duration gap (perfect matching of liabilities in practice).
Example of exacerbating factor	A substantial duration gap (assessment needs to be made that put both, asset and liability duration into perspective. For undertakings with material business with features such as future discretionary benefits, particular ratios, which uses liability cash flows that better reflect the duration of the liabilities might be calculated by supervisors after additional requests for information from the undertaking).

2. Derivatives to hedge guaranteed returns for variable products	
Rationale	The minimum guarantees indicator is net of risk mitigation. This is appropriate; hedging could reduce micro-prudential risk, but may not reduce macro-prudential risk as it transfers the exposure to a third party. Certain derivatives could pose higher risks than others.
Example of mitigating factor	The use of centrally cleared derivatives.
Example of exacerbating factor	The use of OTC derivatives.

Liability liquidity

1. Purpose of the policy	
Rationale	The purpose of a policy may play a relevant role in the likelihood of policyholder runs occurring. Specifically, policies that are principally providing protection are less likely to result in runs as policyholders would typically value the protection element.
Example of mitigating factor	Policies providing principally protection.
Example of exacerbating factor	Policies principally providing savings

2. Surrender value relative to market value of underlying assets.

Rationale	Run dynamics tend to be aggravated where the surrender value exceeds the market value of underlying assets; this provides incentives for policyholders to surrender early to ensure there is money left (the typical “bank run”).
Example of mitigating factor	Where the surrender value cannot contractually exceed the market value of underlying assets
Example of exacerbating factor	Where the surrender value can contractually exceed the market value of underlying assets.

3. Supervisory interventions: stays and lowering surrender value

Rationale	Some supervisors have tools at their disposal, such as the authority to impose stays or lower surrender values that can prevent runs or mitigate the impact of runs on the financial system.
Example of mitigating factor	Supervisory interventions (such as stays and the lowering of surrender values) are legally feasible and can reasonably be assumed to be used by supervisors in case of crisis.
Example of exacerbating factor	There are concerns that the use of supervisory stays could exacerbate systemic risk through the disruption in market confidence caused by delayed payments.

4. Maximum contractual stays

Rationale	Some contracts allow for very long stays (under stressed conditions)
Example of mitigating factor	Long contractual stays give insurers the flexibility to manage the outflows somewhat in case of higher liquidity needs.
Example of exacerbating factor	Those (long) contractual stays could potentially not be exercised in stressed conditions, particularly if there is a discrepancy between normal pay-out times and contractual maxima.

5. Replacement of cover

Rationale	Whether or not replacement of cover is possible will affect the likelihood of policyholder runs occurring. Specifically, disincentives for policyholder to surrender policies are larger in case cover is not easily replaced by another firm or policy due to unavailability of the same/similar cover and/or significant increase in premiums or other costs for the same/similar cover.
Example of mitigating factor	Cover is not easily replaced.
Example of exacerbating factor	Cover is easily replaced.

6. Tax penalties	
Rationale	Although economic penalties referred to above (see paragraph 4.2.3) encompass all monetary penalties, including tax penalties, in practice, there may be other tax considerations that could pose a disincentive to surrender a policy.
Example of mitigating factor	Additional ¹³ tax penalty or the loss of a tax benefit (e.g. exemptions from inheritance tax) when early surrendering a policy.
Example of exacerbating factor	N/A

7. The existence of policyholder protection schemes and mechanisms	
Rationale	Policyholder protection schemes and mechanisms can be effective in reducing incentives for policyholder to surrender their policies, especially if policyholder runs were driven by concerns over the solvency of firms and fear of not receiving their account values.
Example of mitigating factor	The existence of a credible and effective policyholder protection scheme or mechanism
Example of exacerbating factor	The lack of a credible policyholder protection scheme or mechanism

8. Liquidity of assets	
Rationale	Policyholder surrenders at a large enough scale may lead to the forced sale of assets to ensure policyholders can be paid. The forced sale of illiquid assets is more disruptive than the sale of liquid assets.
Example of mitigating factor	Assets are very liquid relative to liabilities.
Example of exacerbating factor	Assets are very illiquid relative to liabilities

9. Derivatives Collateral Requirements	
Rationale	A liquidity shortfall at an insurer can arise not only from a large amount of policyholder surrenders, but also from collateral posting requirements relating to derivative liabilities. This was observed during the financial crisis.
Example of mitigating factor	Limited derivatives collateral needs under a variety of scenarios such as a downgrade or spike in interest rates
Example of exacerbating factor	Large derivatives collateral needs under a variety of scenarios such as a downgrade or spike in interest rates

¹³ Additional to those already taken into account in Phase 2.

6 Implications for HLA and BCR

6.1 As stated in the HLA document issued in October 2015, the IAIS work on the 2016 G-SII Assessment Methodology and this paper will be closely monitored and evaluated in the context of HLA. Changes to the G-SII Assessment Methodology and this paper will lead to a change in HLA design and calibration. It is anticipated that the periodic annual analyses of insurer field testing data in 2016-2018 and the BCR and HLA review process will also lead to changes to the HLA design and calibration, prior to the proposed implementation of HLA. The ICS is intended to replace the BCR as the basis for HLA in the future.

7 Relationship with NTNI Principles in the 2013 Policy Measures Document

7.1 With this paper the IAIS discontinues the term NTNI and provides further clarification on the notion of Non-traditional insurance products, by introducing a more granular and nuanced assessment of the product features that influence the systemic potential of an insurer. The first two NTNI principles in the 2013 IAIS G-SII Policy Measures document will no longer be used, having been superseded by the more detailed assessment set out in this document.

7.2 The following statement provides a concise summary of the revised framework. Unlike the former NTNI principles, it is not intended to be a criterion for binary classification of products or activities conducted by insurers.

Policies or products that have features that expose the insurer to substantial macroeconomic risk (including credit guarantees) or substantial liquidity risk through the exposure and asset liquidation transmission channels contribute to higher systemic potential of insurers.

In this context:

- *Substantial macroeconomic risk relates to exposures where an insurer's financial position is highly correlated with the broader economy.*
- *Substantial liquidity risk relates to exposure to the risk of a policyholder run.*

8 References

Financial Stability Board (2011), *Shadow banking: strengthening oversight and regulation*, Recommendations of the Financial Stability Board.

Financial Stability Board (2014), *Key attributes of effective resolution regimes for financial institutions*, Recommendations of the Financial Stability Board.

IAIS (2011), *Insurance and financial stability*, Policy paper, available at <http://iaisweb.org/index.cfm?event=openFile&nodeId=34041>.

IAIS (2013), *Global systemically important insurers: initial assessment methodology*, Policy paper, available at <http://iaisweb.org/index.cfm?event=openFile&nodeId=34257>.

IAIS (2013), *Global systemically important insurers: policy measures*, Policy paper, available at <http://iaisweb.org/index.cfm?event=openFile&nodeId=34256>.

International Monetary Fund, Bank for International Settlements, Financial Stability Board (2009), *Guidance to assess the systemic importance of financial institutions, markets and instruments: initial considerations*, Report to G20 Finance Ministers and Central Bank Governors (available at http://www.financialstabilityboard.org/wp-content/uploads/r_091107c.pdf?page_moved=1).

International Monetary Fund Global Financial Stability Report (April 2016), *The Insurance Sector – Trends and Systemic Risk Implications* (available at: <http://www.imf.org/External/Pubs/FT/GFSR/2016/01/index.htm>)