



Surrenders in the Life Insurance Industry and their Impact on Liquidity

August 2012

The Geneva Association

(The International Association for the Study of Insurance Economics)

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Edited by Daniel Haefeli, Head of Insurance and Finance, The Geneva Association,
and Dr Wilhelm Ruprecht, Allianz

The Geneva Association

Geneva | Route de Malagnou 53, CH-1208 Geneva | Tel: +41 22 707 66 00 | Fax: +41 22 736 75 36
Basel | Sternengasse 17, CH-4051 Basel | Phone +41 61 201 35 20 | Fax +41 61 201 35 29

secretariat@genevaassociation.org | www.genevaassociation.org

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- *Systemic Risk in Insurance—An analysis of insurance and financial stability*, published in February 2010. This document provides a description of the fundamental role of insurance in financial stability and examines whether systemic risk exists in insurance.
- *Key Financial Stability Issues in Insurance*, released in July 2010, comprises analytical work carried out on specific issues that had been raised by regulatory and supervisory counterparts in areas such as investment management, liquidity management, limits of insurability, crisis resolution mechanisms in insurance and the confused concept of an “insurance run” (supposedly akin to a bank run).
- *Considerations for Identifying Systemically Important Institutions in Insurance*, published in April 2011 which details the development of a comprehensive approach for identifying potentially systemically risky activities and the entities that carry them out.
- *Insurance and Resolution in Light of the Systemic Debate*, was published in February 2012 to respond to the need for a more detailed analysis of how insurance recovery and resolution mechanisms work. It examines existing features of recovery and resolution mechanisms in insurance and their relation to ongoing international supervisory and regulatory discussion on systemic risk. It also proposes recommendations for possible measures to increase the existing resilience of financial systems.

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Executive summary

Core insurance business, due to its business model, is not as liquidity dependent as banking. Nevertheless, scenarios of liquidity problems in the insurance sector have been increasingly discussed among the regulatory and supervisory bodies. We hope that our analysis will further guide the discussion to help find the appropriate responses to potential liquidity risk.

What drives insurance policyholders to consider surrendering their policies despite the long-term purpose of these products? What elements influence their decision to surrender? How do insurers manage the risks around surrenders, including liquidity risk? What could be the industry and regulatory response to the problem of a possible dramatic rise in surrender rates for life insurance policies?

Customers generally buy life insurance policies for long-term purposes. In contrast to other financial products, customers do not generally expect liquidity from life insurance policies at any given time but rather at predetermined times. They have disincentives to surrender—if there is an option to surrender at all.

Insurance companies are nevertheless prepared to deal with the unlikely and have put comprehensive liquidity management routines in place. On a rolling basis, companies regularly check whether they have sufficient liquidity to stand panic surrender scenarios, including testing these scenarios in times of adverse capital market developments. For scenarios in which company-specific risk tolerance levels are breached, contingency plans are developed. The implementation of sound liquidity management is an accepted good practice and not just a regulatory requirement. It is also enforced by rating agencies as it has become an object of scrutiny.

Product design is an important tool to control liquidity risk. Products where the shareholders bear the investment risk (general account) without any or only low surrender disincentives, combined with guaranteed surrender-values, increase the liquidity risk. On the other hand, products where the policyholders bear the investment risk (separate account/unit-linked policies), or general account products with significant built-in disincentives for surrendering, limit the liquidity risk considerably.

Empirical data from major insurance markets show that over the last years, market surrender rates have not reached alarming levels. Since 2007 surrender rates have even decreased for many business lines.

An analysis of U.S. industry data over the period 2002 to 2010—a period that includes the worst financial crisis in living memory and thus substantial real-life stress situations for all financial institutions—proves the industry's capability of covering surrenders with its net operating cash flow. In aggregate, it has not been necessary to touch the payouts of matured bonds in the current period or to sell liquid assets prematurely. The cash coverage ratio, i.e. the ratio between surrenders and net operating cash flow, was significantly higher for those product lines where the companies bore the investment risk (general account). The increase in U.S. surrenders

(2002-2007) was significantly higher for products where the policyholders bore the investment risk (separate accounts).

When considering a distress scenario based on the empirical U.S. data, we have to work with unprecedented, very extreme assumptions. When total general account surrenders are increased four to five times their actual yearly values, up to 11 per cent of total general account liquid assets would have to be sold. In order to assess the potential impact on the market, this should be considered in the context of the overall U.S. bond market figures.

It goes without saying, however, that it is not impossible to imagine conditions which could cause even more dramatic surrenders. In such a situation, the potential of insurance companies to mobilise internal cash sources should not be artificially restricted. Rigid rules on the ring-fencing of legal entities may give rise to additional liquidity needs. Transferability of assets within a group, on the other hand, exploits economies of scope via diversification effects. Of course, cross-subsidisation of one entity by another is to be prohibited. However, fair trading of liquid against illiquid assets in line with the arm's length principle should be permitted.

In a scenario of dramatic mass panic surrenders, moreover, asset disposals during stressed market conditions would not necessarily be in the best interests of all policyholders (both those wishing to surrender and those wishing to continue their policies). In such circumstances, insurers and their supervisors need to consider the potential impact and manage the situation accordingly. One potential course of action would be to suspend partially the payment of surrenders. Examples for legal provisions establishing corresponding circuit-breaking powers are already in place in France and Japan.

1. Introduction

How likely is the scenario of a “run on life insurance companies”? To what extent would such a scenario cause liquidity problems for life insurers? And what is the industry’s (and regulatory) response to the problem of a possible dramatic rise in surrender rates for life insurance policies?

In its second half-year financial stability report in 2011, the European Insurance and Occupational Pensions Authority (EIOPA) expressed concerns regarding potential risks with “higher than expected lapse rates in life insurance”. At the same time, the Financial Stability Board (FSB) and the International Association of Insurance Supervisors (IAIS) discussions on global systemic risks emanating out of the financial sector have seen an intensifying scrutiny of liquidity aspects. The collapse of AIG, a financial conglomerate with highly risky banking activities next to its very large and stable insurance operations, triggered concerns about liquidity at financial institutions that conduct liquidity-sensitive operations next to their other businesses. The recent sovereign debt crisis might have the potential to trigger increases in surrender requests from policyholders, in particular if a country should decide to leave the euro. For this reason, The Geneva Association has decided to look deeper into potential liquidity issues caused by surrenders after liquidity issues had been addressed in its March 2010 report, *Systemic Risk in Insurance—An analysis of insurance and financial stability*.

Given this background, we begin our analysis with the investigation of the determinants of surrender behaviour in Section 2. We would point out that while there is a tendency to draw parallels to runs experienced by banks, restrictions on the actual cash that a policyholder can obtain from his/her policy and insurance reserving mechanisms make the dynamics of a hypothetical run very different from that of a bank. We will present empirical evidence on the evolution of surrenders in major markets over the last 10 years. In Section 3 we will briefly address extreme circumstances where surrender behaviour might be governed also by macro-economic shocks. In Section 4, we will address how insurance companies prepare themselves for the unlikely, e.g. by using liquidity stress tests, including worst case scenarios such as combinations of mass surrenders and adverse capital markets. Based on data from the U.S. market from 2002 to 2010 we provide an *ex post* analysis of the U.S. industry’s capacity to deal with life surrenders and also show the impact of hypothetical mass surrenders (Section 5). As “runs” on insurers have historically never caused significant liquidity crunches we will have to work with unprecedented, very extreme assumptions. Finally, we consider the role that regulators, supervisors and policymakers could play to assist insurers where surrenders may increase under extreme conditions (Section 6).

2. Surrender behaviour under “normal circumstances”

The surrendering of a private life insurance contract is subject to individual choice. Although many insurance contracts include the option to surrender, changing or cancelling them still has a cost, as with all contracts. For example, in the case of a life insurance contract, there is usually a surrender charge for which the insurer deducts the pre-financed costs from the surrender value. In addition, underwriting a new policy to replace the old one that has been surrendered may have cost and availability implications where the policyholder’s circumstances have changed, unlike the process of moving an account from one bank to another.

Given that surrendering a life policy can be a costly process, why would a policyholder still want to do so? What are the different options available when the policyholder is in need of cash? In the following sections, we will try to address these questions, by looking at the purposes of life insurance, different options for cash generation purpose, explicit and implicit costs incurred in the case of surrender, as well as past empirical evidence of surrender behaviour.

2.1. Life insurance policies serve long-term savings purposes and biometrical risk coverage

There are numerous needs a life insurance policy fulfils. The most relevant ones are:

- Long-term savings for retirement—often supported by specific government tax regimes as a compensation for consumption-renunciation in the context of widespread cuts in the Pay-As-You-Go (PAYG)-financed social security schemes.
- Protection against biometrical risks (financial consequences of early death, disability, financial consequences of a longer-than-expected life).

When buying a life insurance policy, customers may aim at complementing their social security benefits or seek cover for risks that are not covered by social security benefits. In most countries, social security benefits are subject to severe cuts due to demographic developments.

The policyholder can choose the balance between these elements based on his personal needs and plans. Term-life policies and other protection products do not include a savings portion as only biometric risk is covered, often the death of the policyholder. Life endowment policies, on the other hand, include both savings and biometrical risk coverage. Here, the savings and the biometrical part interact in such a way that the product is much more than the sum of the elements. Together, the savings and the protection aim can be accomplished with fewer financial resources than if approached with two different products (economies of scope). Annuity insurance policies provide a regular stream of payments in retirement. Depending on their personal risk preference and the overall structure of their risk portfolio, holders of life savings products can choose

the extent to which they want to bear investment risk. Apart from products providing capital guarantees there are also products where the capital market risk is fully borne by the policyholder.

As opposed to a bank deposit, life insurance contracts establish commitments for both insurers and insureds for a longer period of time:

- The policyholder commits to a series of payments covering the cost, risk and savings elements of the policy. In the case of a single premium, the policyholder’s contribution is made up-front.
- The insurance company commits to provide payments either at the moment when the covered risk-event happens or at maturity of the contract.

However, policyholders may have the option in some cases—as part of their contracts and under often specific predefined conditions—to prematurely stop or interrupt payments of premiums, to take a policy loan or to surrender the policy before the contractual maturity date.

2.2. For simple cash generation purposes there are many options which are better and simpler than surrendering a life policy

Sometimes, e.g. in emergency situations, individuals suffer financial shortcomings and are unexpectedly in need of cash. Some examples of emergency cash needs might be people losing their jobs or getting divorced. Given the long-term savings and the risk-coverage purpose of their life insurance contracts, there are more obvious sources to raise cash than surrendering a life insurance policy.

In this context, it might be fair to outline a hierarchy of liquidity between financial products. Customers will be inclined to cash in their financial products according to the characteristics which were relevant to them when concluding the contracts. In a stylised way, Table 1 describes as a descending hierarchy some basic options available to individuals to raise cash and their respective potential drawbacks. The concrete options are, of course, country-specific as they depend on income levels, product availability, cultural factors, etc.

Table 1: Hierarchy of liquidity of the different cash sources

Ease of access to liquidity	Cash source	Comment	Potential drawback
1.	Use of current bank deposits	Withdrawing funds from a bank account is the fastest and most direct way to raise cash. Cash is immediately available for other purposes like consumption or investment.	No significant costs arise for the depositor.
2.	Use of short-term savings accounts		Smaller sums can usually be taken out without any penalty, larger sums need to be pre-announced or carry a modest withdrawal penalty.
3.	Use of overdraft facilities on current accounts or credit cards		Costly and often available only for short periods of time.

4.	Sale of securities	If the securities are regularly traded assets the cash is available in a few days. Depending on the acquisition price the client might incur a loss, which is often the case in times of stress.	Client usually has to bear the transaction costs of selling the securities, any investment loss or gain would crystallise. Negative tax implications possible.
5.	Support from family (and friends)	A very common solution, particularly when the individual is hit by very difficult times. Different ways exist to transfer cash to a family member such as a gift, a loan or an anticipated inheritance.	Depending on culture and personality, many people may wish to avoid a situation of dependency on their family. Potentially negative tax implications.
6.	Increase of mortgages	Depends on the current status of real estate financing. This possibility might be the first choice to finance improvements on the building or other unexpected cash needs (health costs, education for children, etc.).	Less appropriate if the individual has unstable or decreasing income. Increase in interest costs.
7.	Use of policy loans	Although cash will not be immediately available until an approval is granted, it is a relatively easy way to generate cash for a policyholder.	Due to the continuation of premium payments and the additional interest expenses for the loan, this is not an ideal measure for a person with economic needs but rather a measure to raise cash for consumption or an investment.
8.	Stop premium payment for term-life contracts	Policyholder does not generate cash but saves future premium payments which are relatively small.	Loss of insurance protection. No cash received but saving of current expenses (premiums).
9.	Surrender of life contracts with saving portions	Cash will not be immediately available due to surrender process.	Surrender charges (depending <i>inter alia</i> on policy age), loss of insurance protection and not yet allocated terminal bonuses. Might trigger loss of tax benefits or incur special taxation.
10.	Sale of property	Cash is not immediately available due to sales procedure. Individual will have to incur opportunity costs for rental of new home.	Depending on the jurisdiction and sales proceeds taxes might reduce cash amount significantly.

Source: Developed by the Liquidity Workstream of The Geneva Association.

It is obvious that consumers would start first by liquidating their bank deposits and would surrender life policies only as a last option. This is because banking deposits are meant to provide money for daily use. On the other hand, life insurance contracts concern long-term savings.

2.3. Due to numerous surrender penalties and opportunity costs, withdrawing from a life policy should usually be among the least attractive options

Surrendering a life policy is a decision which needs to be well thought through as this move implies significant penalties and opportunity costs for the policyholder, his family and potentially

his entire financial plan. Unlike banking deposits or accounts where withdrawals are an easy and straightforward process, the surrender of a life policy will potentially impact the cost and availability of future financial protection and may also result in tax disadvantages:

- **Surrender charges:** Most insurance contracts levy a surrender charge for at least the first years of the policy. This surrender charge allows the insurer to recover incurred, pre-financed costs including commission paid to the insurance agents and other costs incurred when issuing the policy. This charge reduces the amount available to policyholders on surrender of their life policies. Depending on the jurisdiction and the product the amount of the surrender charge might be related to the age of the policy.
- **Inability to obtain coverage or the same amount of coverage at the same price:** If a contract is surrendered the policyholder may not be able to obtain the same amount of biometric risk coverage for the same price, if any coverage at all. Underwriting a new policy to replace the old one requires a new underwriting process as the risk profile of the policyholder may have changed. If a policy mainly serves the biometrical risk coverage, this factor would act as a disincentive to surrender. Indeed, the inability to obtain similar coverage from another insurance company or the opportunity cost could be the most important consideration against surrender of protection products.¹
- **Loss of guaranteed interest rate:** In times of decreasing interest rates the value of guarantees inherent to certain life policies increases and enhances opportunity costs to invest into other investments.²
- **Loss of additional savings benefits as opportunity costs of surrender:** Some products contain a continuation “bonus” feature that encourages customers to maintain their insurance policies. Furthermore, in many jurisdictions customers lose, at least partially, their entitlements to any terminal (maturity) bonuses which are due at maturity if they surrender their policies early. Certain U.S. variable annuity contracts have minimum withdrawal benefits features that can result in a total loss of the customer’s lifetime guarantees or the right to annuitise in the case of surrender. Such potential loss of the embedded guarantees acts as a clear disincentive for customers who are seeking long-term investment.
- **Tax penalties:** Specific tax regimes sometimes provide additional incentives to buy a particular financial product. Currently, certain life insurance products with surrender values are subject to tax regimes that would give customers important disincentives against surrendering the policy.

In particular, surrender of insurance contracts with a sizeable investment component, such as variable annuities with embedded guarantees, is subject to penalties for early withdrawal which act as deterrents to the surrender of the policy. For example, variable annuities are subject to tax penalties for early withdrawal (in the U.S. there is a 10 per cent penalty for withdrawal before the age of 59½ and the insurance guarantees are lost when conducting tax preferred changes).

If these tax treatments were to change (which is unlikely for existing contracts), or the comparative tax situation changes with a more advantageous vehicle becoming available, it is conceivable that customers might cancel their insurance contracts and seek a different form of investment. Other built-in determinants to the product (see above) may also have an impact on the customers’ decision to surrender their policies.

It is also worthwhile mentioning in this context that some life insurance policies contain contractual options that allow policyholders a certain degree of flexibility and alternatives

1 This is based on the Employee Retirement Income Security Act (ERISA) regulations in the U.S.

2 Once interest rates begin to rise, the argument in principle works in the opposite direction. However, policyholders often participate in higher investment income via profit-sharing mechanisms.

to surrender their policy in emergency situations. These options may include possibilities to postpone or catch up premium payment, reduction of insured sums, etc.

2.4. It is reasonable to assume that most policyholders are aware of the disadvantages they face in the case of surrender

Since life insurance policies are products that have been well established in most markets during the last century it can be assumed that retail policyholders are in general aware of the disadvantages they face in the case of surrender.

Policyholders that are not aware of the negative implications of surrendering their life policies can get support and advice from their intermediaries (brokers and agents). Well-educated intermediaries providing after-sales services can play an important role in determining whether or not a policyholder retains or surrenders a policy. Brokers or agents maintain a relationship with the policyholder and thus are in a position to consult a policyholder accordingly in the case of a surrender request. The same holds true for other parties providing post-contractual advice such as consumer organisations.

3. Surrender behaviour under extreme circumstances

So far, we have considered the surrender behaviour under “normal circumstances”. In this setting, surrender behaviour is mainly determined by individual life events such as unexpected economic hardship, unemployment or divorce. For insurance companies the likelihood of surrenders caused by these events is usually reasonably predictable due to their large portfolios. As discussed above, penalties and opportunity costs provide important disincentives to policyholders’ surrender.

In this section we address the question under which external circumstances surrender could become a mass event. In other words: what are the potential determinants of a run on life insurance?

In principle, there are different circumstances conceivable for mass surrenders at company and even industry level which by no means exclude each other:

3.1. Collapsing confidence in a company could lead to mass surrenders

Certain events could lead to a collapse of confidence in the financial viability of a particular life insurance company. Examples are rating downgrades, published regulatory actions/ measures against the company, and a downturn in stock price or scandals and their corresponding rumours. The reaction to an event that induces the confidence crisis can be reinforced by panic-driven, herd behaviour. Of course, a rational customer would recognise that the potential loss for him or her would be limited with an insurance guarantee system in place—at least insofar as the confidence crisis does not extend to the whole industry—and would balance it against the potential surrender penalties.³ After the failure of the German company Mannheimer, all contracts were transferred to the newly created guarantee scheme Protektor. Contracts were continued without any cuts in guaranteed benefits. However, in the year after the transfer, the combined surrender and lapse rate for all types of life policies peaked with 15.2 per cent (2003) and 15.0 per cent (2004).⁴ Afterwards the rate quickly came down again.⁵ This development was driven by pure uncertainty and loss of confidence. However, no policyholder had actually lost a cent of his or her guaranteed benefits.

Furthermore it is important to note that liquidity problems of one single company do not spread to other players of the financial industry sector, as insurers do not depend on third party financing as banks do. Contagion to the rest of the financial industry sector might only occur via customers’ herd behaviour and similar lack of confidence in other institutions.

3 For a more extensive discussion of pros and cons of insurance guarantees in Europe and the U.S. and concrete design options, see The Geneva Association (2012).

4 In 2004, the combined lapse and surrender rate for the German life insurance industry amounted to 3.4 per cent, calculated on the basis of BaFin (2005).

5 Protektor Lebensversicherung A.G. (2006-2011).

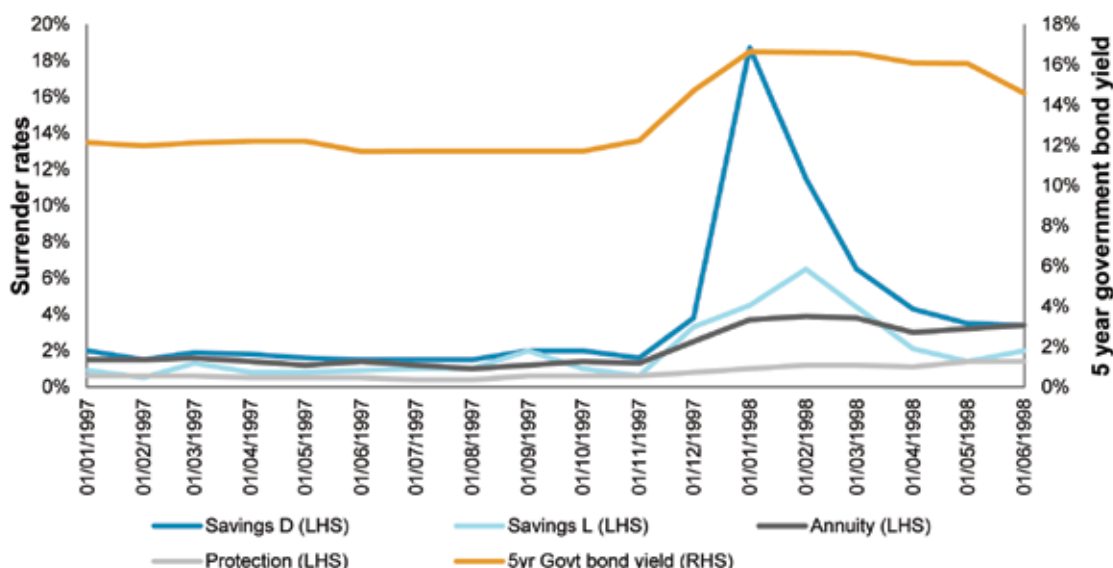
3.2. Changes in the macroeconomic environment can bring up aggregate surrenders in the whole industry

The economic research literature on lapse and surrender behaviour differentiates the “emergency fund hypothesis” of surrender behaviour from the “interest rate hypothesis” of surrender behaviour. The interest rate hypothesis presumes that policyholders surrender in order to exploit higher interest rates offered elsewhere, whereas the emergency fund hypothesis conjectures that personal financial distress forces policyholders to surrender.⁶

Due to surrender penalties (see above) both motives do not have a great impact on consumer behaviour under normal circumstances and are relatively predictable. With a changing macroeconomic environment, however, the relevance of both motives could increase.

A sharp change of interest rates could considerably alter the comparative attractiveness of the various savings options available to customers and increase the opportunity costs of holding a life insurance policy. This might cause an increased number of policyholders to surrender, particularly when there is a strong investment motive behind the purchase of the product. Empirical research on lapsing behaviour in the German life insurance market from 1997 to 2009 suggests that the interest rate hypothesis is relevant for explaining lapses of unit-linked life insurance policies.⁷ This is not surprising given that the direct management of assets is a feature that is inherent to unit-linked policies. With regard to explaining lapse rates of traditional endowment policies, the interest-rate hypothesis is not found to be significant. However, we can question whether alternative relevant investment opportunities were sufficiently attractive to offset the disadvantages of surrender, given that those disadvantages might be higher for endowment policies than for unit-linked policies. Therefore, a general rejection of the interest rate hypothesis for non-unit-linked life products would be premature.⁸ With sharply increasing interest rates, it would not be surprising if surrenders of products with minimum surrender values would increase. Exhibit 1 provides an illustration for the correlation between interest rates and company-specific surrenders in Korea during 1997 and 2002.

Exhibit 1: Interest rates and surrender rates of different products in Korea 1997 and 1998



Source: North American Actuarial Journal, The Bank of Korea

6 Kiesenbauer (2011).

7 *Ibid.*

8 It also needs to be taken into account that after the period under observation the German legislation has introduced minimum surrender values (§ 169 German insurance contract law) which *ceteris paribus* lower surrender penalties for new contracts.

The exhibit above illustrates the correlation between interest rates and company-specific surrenders. Savings D are mostly deposit accounts with short terms. Savings L are long-term deposit accounts. For these products, the surrender rates increased (substantially for Savings D) when interest rates sharply rose at the end of 1997.

Surrender rates could also be influenced by an expected change in a country's currency regime, which would significantly deteriorate the value of current life policies and as such trigger higher surrender requests.

Another influence would be significant changes in unemployment rates, e.g. due to an economic downturn. Increasing unemployment rates are typically accompanied by a decline in per capita income. In this case the number of emergency surrenders would be likely to increase since people use their life insurance either as substitute or complement to benefits of unemployment insurance. Exhibit 2 provides an illustration for the correlation between the unemployment rate and company-specific surrenders for a certain category of annuity products in Korea from 1997 and 2002 (see also Annex 2).

Exhibit 2: Unemployment rates and surrender rates of deferred interest-indexed annuity products in Korea 1997-2002



Source: Kim (2007).

A further example for the emergency fund hypothesis would be a country that needs to considerably increase its tax revenue due to its fiscal position. Also in this case real per capita income would decline. If income elasticity of surrendering a life insurance policy is negative, surrenders will increase.

Box 1: Do institutional clients expose life insurance companies to a greater surrender risk and can it be managed?

When discussing potential mass surrenders, institutional customers deserve separate consideration. In principle, one decider can surrender thousands of contracts at once.

Compared with retail clients, institutional clients generally have better information facilities and financial capabilities. Therefore they might react more sensitively to interest rate changes or rating downgrades. Compared to retail clients, they also might be more inclined to shop around for lower administration costs.

In the life insurance business, employers are institutional clients when they demand insurance solutions for workplace pensions. Insurance-based workplace pensions presume a triangular relationship between employers, employees and insurance companies. Pension entitlements are established by employers who give a pension promise to their employees. Employers can decide to involve a financial institution—a pension fund or an insurance company—in order to deliver on their promise. In this case, employers are policyholders whereas the employees are the beneficiaries.

With regard to liquidity management, it is relevant of course to know whether the policyholder or the insurance company bears the capital market risk.

The design and organisation of pensions as a Defined Benefit (DB) or Defined Contribution (DC) plan is subject to national provisions. For EU Member States, the latest European Insurance and Occupational Pensions Authority (EIOPA) financial stability report contains information on the size of 2009 workplace pensions and on how pension contributions split into DB and DC schemes. Although these terms primarily refer to the capital market risk borne by employers, this differentiation gives at least a certain indication with regard to the capital market risk borne by insurers: in the case of DB plans, employers guaranteeing benefits to their employees bear capital market risk. Although it is possible that they use insurance companies for asset management, only some may also transfer capital market risk to insurers. In the case of DC plans employers have no capital market risk at all. It is true that some DC schemes exist where the insurer or pension fund provides capital guarantees. However, this might not be the rule.

Countries differ with regard to the legal framework that governs penalties and opportunity costs of surrendering, in particular taxation and product standards. The same holds true for modalities regarding surrender or transfer of funds to another company.

In Germany—where workplace pensions have traditionally been DB—the legislation does not foresee any option for employees to surrender. Even when employees pay premiums, surrender is legally excluded; they can only stop paying further contributions. Employers, on the other hand, have the right to surrender (and to take their pension promises into their balance sheets). However, total surrender of all contracts is rather theoretical since beneficiaries who hold direct entitlements against insurance companies would have to agree with a proposal of their employer to surrender or to transfer the present pension value to another insurance company. Given that they would probably have to accept less advantageous mortality tables—and also lower interest rates in the current capital market environment—the likelihood for their agreement is very low.

New U.K. business in the market for workplace pensions is almost exclusively DC, although a large legacy of DB schemes remains. Group pensions are typically written as a contract between the pension scheme's trustee and the insurance company. The rules affecting liquidity risk are a combination of these contracts, i.e. what trustees are permitted to do, and the rules of the pension scheme which may constrain what trustees can do. In general, insurance companies manage liquidity of group pensions as they do for individual policies. Investment is mainly in liquid assets.

The Japanese market for insurance-based workplace pensions is largely dominated by DB schemes. In contrast to Germany, employers have the right to transfer pensions to another insurance company without employee consent, although this is considered highly unlikely since wholesale specialists usually maintain tight relationships with institutional clients. Since it is customary for such a transfer to involve negotiations between insurers and policyholders, which usually take a month, the insurers would normally have sufficient time to provide the required cash. Proper management of assets covering group pension entitlements implies in any case that separate accounting shall be made. A large part of assets is invested in highly liquid financial products such as Yen-denominated fixed-income securities.

4. How insurance companies manage surrender risk

Sometimes the term “liquidity” is mixed up with the term solvency. While solvency refers to a company’s overall ability to have sufficient assets to cover its liabilities, liquidity refers to its capability to cover current liabilities with current assets. Accordingly, liquidity management as part of insurers’ asset liability management is the management of the cash inflows and cash outflows. Liquidity risk is a measure of the insufficiency of an insurer’s cash resources in meeting its current or future cash needs. It is also the measure of the need that assets will have to be liquidated at a discount or that refinancing is only possible at a higher interest rate.

4.1. Insurance companies do not rely on short-term funding to finance their business model⁹

The production cycle of insurance companies works inversely to the banking cycle. Funding is done through up-front advance premium payments and leverage is not usually used to enhance expected investment returns. Assets held by insurers have a much shorter duration than their liabilities in some countries. Even when policyholders have options to withdraw, they can do so only at a very high cost (as seen in the previous section). Hence, in contrast to banks, duration transformation of credit is not part of the insurance business model and insurance companies typically do not rely much on short-term funding.¹⁰

In addition, due to the difference in business models, insurance companies are inherently much less exposed to illiquidity risk than banks are. This is because insurers are required to hold and match assets to cover their liabilities. Even if matched assets are not immediately liquid, most of them can be turned into cash almost immediately if needed. This is a fundamental difference to banks which would be looking to borrow on capital markets to cover deposit withdrawals in the case of a run. A lack of confidence in the financial soundness of the bank might, however, make this difficult (a credit crunch).

4.2. Insurance companies design product features to meet the long-term needs of their policyholders

The amount of liquidity risk (if any) that a product may pose will depend on its purpose and design. Life products are intended to meet the long-term needs of their policyholders. These generally can be one or more of: protection; investment accumulation; and investment de-accumulation. Given their long-term nature, products are designed to realise a value at a future event and minimise factors that would hinder their ability to achieve this.

⁹ The Geneva Association (2010a; 2010b; 2011; 2012).

¹⁰ The Geneva Association (2011) and Davies (2012).

4.3. Liquidity demands will be inherently reflected in the product design of the different life insurance products

The amount of liquidity risk that life insurance products pose will depend on the concrete design of the product. In this context, the following questions are relevant:

Does the product in consideration provide a significant surrender value?

When policyholders withdraw pure protection products, insurers no longer receive premiums, potentially impacting cash flow. However, because protection premiums are comparatively low, the incentive to withdraw them and subsequently their impact on insurers' cash flow might be correspondingly low. Since pure protection products do not provide any technical surrender value, policyholders would not realise any cash inflow from withdrawing them. The higher the risk coverage part of a product, the lower generally is its surrender risk.

Some jurisdictions legally exclude the surrender option for certain life insurance products that, unlike pure protection products, have an important savings element. Examples are annuity products in the U.K., which are pure de-accumulation products, or "Basis-Rente" in Germany. Like pure protection products, these products provide no surrender risk at all.

Is the investment risk borne by the policyholder or by the insurance company (presuming that there is a surrender value)?

The former would be the case, for example, where the value of their policy is directly related to the value of the underlying assets backing the policy. The latter would be the case if the insurance company guarantees an element of the value of the policy. Where the policyholder bears the investment risk, he/she realises any loss in the value of the investment content of his/her policy in case of surrender, rather than the insurer. The only remaining liquidity risk that the insurer has to manage in such cases is the sale of the underlying assets to meet surrender requests, when these cannot be met from normal cash flows. The assets backing such policies would generally be liquid because of this. One exception to this rule is products where the benefit value is linked to the value of illiquid assets—such as property. These products are offered in the U.K. market. In order to avoid liquidity traps, it has become common practice to include a clause in the insurance contract which allows insurers to defer encashment of such units for up to six months from receipt of the surrender request.

For products where the insurance company bears the risk, it is key that the surrender value adequately reflects capital market developments in a way that the surrendering policyholder receives no more than his fair share of the fund assets.¹¹ Otherwise surrender puts costs on the company and consequently on the remaining collective of policyholders. If this condition is fulfilled, the risk to insurers hardly exceeds the surrender risk inherent to those policies where the policyholder bears the investment risk. If the condition is not fulfilled, self-support of the product has to be achieved by factoring in the opportunity costs of holding liquid assets in the product calculation.

The share of products discussed in this chapter differs from country to country. This is indicated by several statistics.¹²

11 Deutsche Aktuarvereinigung (2007). The German Actuarial Association points to the fact that this condition is not fulfilled where the determination of the surrender value is linked to actuarial reserves instead of asset values. These are determined in advance and cannot factor in actual capital market developments.

12 See e.g. <http://www.insuranceeurope.eu/facts-figures/statistical-publications/life>. However, shares in terms of reserves are much more relevant in the present context than gross written premiums which are typically used in market comparisons.

Are there any significant surrender penalties for insurance policies where (part of) the investment risk is borne by the insured? If so, would this act as a significant disincentive to mass surrender?

It is recommended that insurance products that are exposed to surrender risk be largely self-supporting from a liquidity perspective. The individual design of products and the balance of the volume of different types of products that insurers provide will have implications for the amount of liquidity risk to which insurers are exposed. However, history has provided us with some rare examples of non-traditional products that certain insurers have sold that did not reflect the usual characteristics and purpose of insurance policies or the design of which did not include adequate liquidity controls (see the example of the Belgian insurance company Ethias in Annex 1 or the example of surrenders during the 1998 Korean currency crisis in Annex 2).

4.4. Insurance companies actively monitor and manage liquidity risks including surrender risk

Although they are less exposed to runs for cash than banks, insurance companies are prepared to deal with the unlikely. They have put comprehensive liquidity management routines in place. In 2008, the CRO Forum outlined a number of high-level principles on liquidity management.¹³ Apart from that there are also regulatory requirements for insurance companies to have proper liquidity management in place, e.g. Solvency II.¹⁴ These principles and regulatory requirements are enforced by rating agencies which have made them the object of their scrutiny.

Liquidity management is seen as the management of both cash sources and cash needs:

- Cash sources, which consist mainly of future premiums from existing contracts and new business, cash inflows from insurance products, asset cash flows (mainly re-investment income and of mature assets) and, as an instrument of last resort, sales of assets and contingent liquidity sources.
- Cash needs, which are made up of cash outflows from insurance products (expected and unexpected), operating cash flows and contingent cash needs arising from environmentally-driven factors. Product-related cash needs are either claims/policy maturities or the exercise of premature product withdrawal options from policyholders. While the former are typically foreseeable and independent of each other, the latter cannot be easily estimated.

Liquidity management depends on the understanding of both sources and needs of cash as well as the availability of unencumbered assets that can be readily converted to cash. It basically needs to consider how assets match liabilities in terms of cash flows. In order to assess the overall risk, companies must take a closer look at the portfolios not only of assets but also of liabilities.

4.5. Liquidity stress tests are an important part of an insurance company's liquidity management

On a rolling basis, liquidity requirements are compared with available resources. In addition to extrapolating cash flows and liquidity resources under normal circumstances, it is necessary to consider stress scenarios. These scenarios need to take into account developments on both asset and liability sides. On the asset side, adverse capital market developments can easily impair liquidity need. On the liability side, increased cash requirements, which could be induced by panic withdrawals due to company rating downgrades or changes of the interest rate, can also

¹³ CRO Forum (2008).

¹⁴ CEIOPS (2009) or Art. 44 Solvency II Framework Directive, Art. 252 SG 4 draft implementing measures dating from October 2011.

increase liquidity risk for the firm. In Section 5 we provide an example for such a stress scenario and quantify its impact on liquidity.

Insurers also have access to additional external or contingent lines of credit through different sources, as explained in Section 6.

The company's management is responsible for determining its risk tolerance and corresponding limits. In the decision process, it needs to take into account the potential losses incurred under extreme circumstances due to a fire sale of assets or refinancing at a higher rate of interest.

For scenarios in which these limits are breached, corrective contingency plans need to be established. These plans will have to describe how limits will be met again within an acceptable period, as further discussed in Section 6.

4.6. Liquidity management should be done at the group level but consideration should be given at the legal entity level

Overall insurers need to consider some diversification in liquidity needs across different product lines (life/non-life) and geographies. Likewise, insurers need to consider a strategic assets allocation to align their asset allocation with their liability portfolios. Just as liabilities can be grouped into different product lines (see 4.3. above), assets can also be grouped into different "buckets" with regard to liquidity risk (e.g. government bonds, equities, etc.). Overall, liquidity risks for an insurance company can be diversified across different asset types as well as across geographies. Liquidity risk can be reduced by managing liquidity on a group level by exchanging cash flows within group companies. Such intra-group transactions have to be done at arm's length and consider ring-fencing provisions.

Where rigid ring-fencing of legal entities of a group exists there will only be a higher liquidity need if liquid assets in one entity cannot be exchanged for illiquid assets in another entity at fair or market value. Such barriers to market value asset exchange are thought to be rare as they do not create a transfer of value. Ring-fencing and any barriers to exchange will need to be considered within the context of the regulations in the countries of operation and the specific company legal structure.

5. Surrender experience and surrender scenarios in the insurance industry

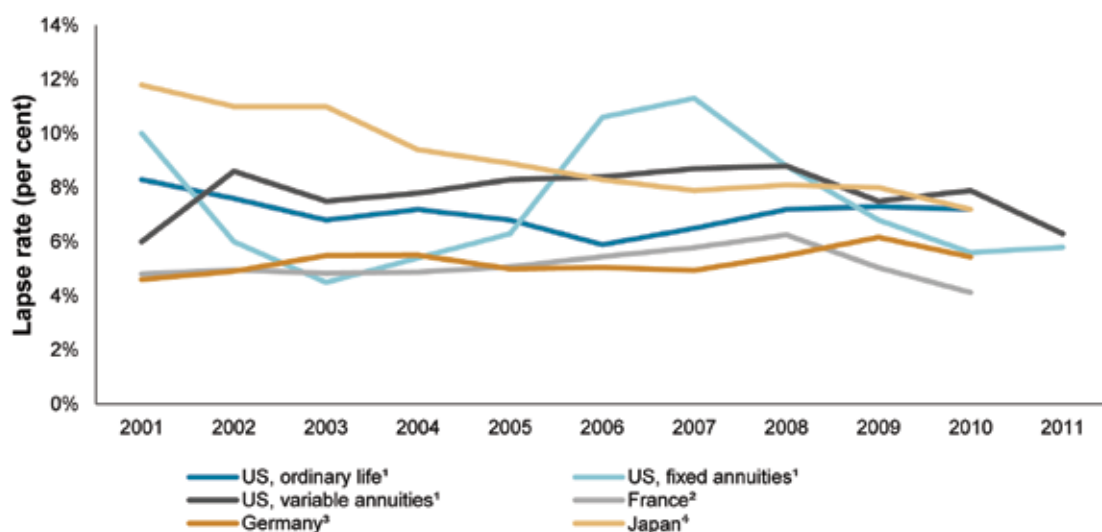
There is empirical evidence indicating that surrender rates in general have been quite stable over the last years.

To demonstrate this stability, we consider the lapse and surrender rates experienced in the life insurance industry of a number of countries before, during and after the 2007/2008 financial crisis.

The risk with lapses is that policyholders with life insurance savings/investment contracts create large cash outflows for insurers by lapsing or surrendering their policies at unexpectedly high rates. This would force the insurers to liquidate investments, driving down prices and exacerbating losses. This risk is considered and quantified in insurers' risk capital models.

The terms lapse and surrender both refer to the termination of an insurance contract. Lapse generally refers to termination without a payout to policyholders while surrender generally refers to termination when a cash surrender value is paid to the policyholder. When looking at the experience in the countries below we have used the term lapse rate to refer to both of these cases, as standard measures of lapses typically include both types of termination.

Exhibit 3: Annual lapse experience in major insurance markets



1. Share of policies lapsed
2. Lapses as percentage of reserves
3. Lapses as percentage of premiums
4. Lapses of sums assured

Source: Swiss Re Economic Research

Exhibit 3 on the previous page shows the overall market lapse experience in a number of major insurance markets, namely the U.S., U.K., Germany, France and Japan. Lapse data is not readily available and the lapse rates below are based on available data and metrics and are not necessarily fully comparable. However the market lapse data does provide us with an indication of the trends of lapse rates during the recent financial crisis in particular when looking at life insurance contracts (notably those with a main purpose of investment).

Lapse rates in almost all markets have been reasonably stable.

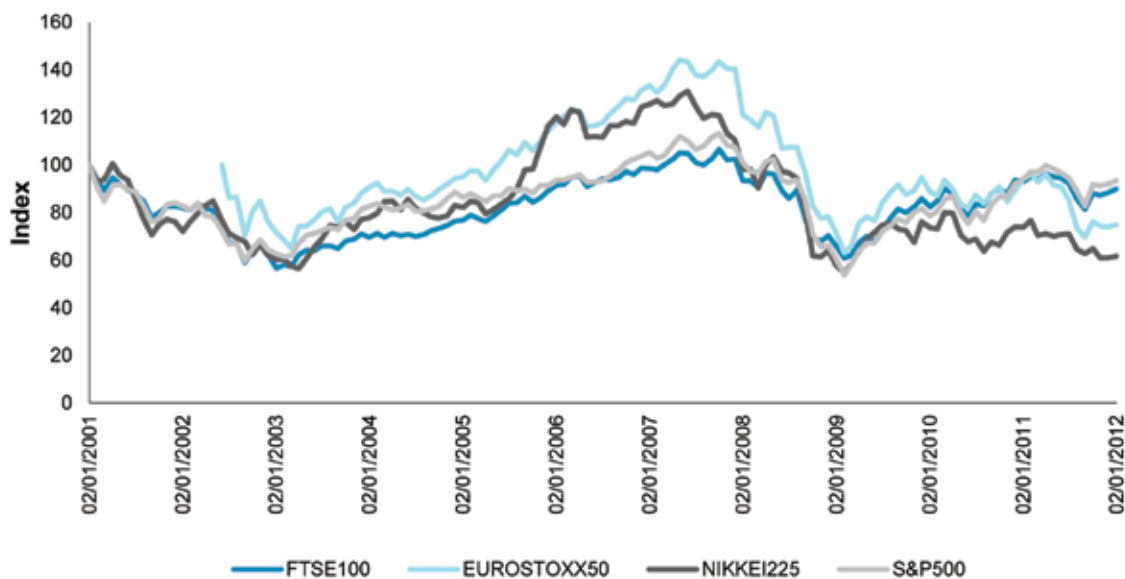
Lapse rates are generally low in life insurance contracts due to the long-term nature of the policies. From 2001 to 2011, lapse rates for most markets have been stable—with the exception of U.S. fixed annuities and U.K. life products. Lapse rates in Japan have actually decreased, reflecting the value that policyholders place on the life insurance element of their contracts during financial uncertainty.

Significant outflows from all types of investment occurred during the crisis.

During 2007 and 2008, there were significant outflows from pooled investment vehicles (including insurance contracts) as customers lost faith in the investment markets (with significant losses in equity markets as indicated in the earlier exhibit). For insurers this is reflected in the increased lapses for U.S. fixed annuities and U.K. life products. These products experienced a substantial increase in lapse rates (up to a doubling of lapse rates) during the years prior to the financial crisis, although during (and after) the crisis there was a significant drop in the lapse rates of these products. We can conclude that since the outbreak of the crisis (2008), surrender rates have decreased in all mentioned markets. It seems that policyholders are looking for security and stability, particularly during times of turmoil. Furthermore, guarantees provided with certain products are more in-the-money the more markets deteriorate. Thus surrendering, without urgent needs, would not be beneficial for the policyholder.

The following chart shows the indexed performance of four major stock exchange indices from the start of 2001.

Exhibit 4: Indexed stock market performance from 2001



Note stock market performance indexed from Jan 2001 except EUROSTOXX250 which is indexed from July 2002

Source: Datastream

During 2001 and 2002 markets fell. There was also a significant drop in markets between mid-2007 and end-2008 during the financial crisis.

We assess the capacity of the insurance industry to deal with surrenders and corresponding liquidity.

We analyse the period 2002-2010 based on National Association of Insurance Commissioners (NAIC) data to understand how surrenders developed and whether the U.S. insurance industry had sufficient capacity to absorb the surrender requests from policyholders during this period.¹⁵

The NAIC data represents the total U.S. life market. Nevertheless, as with all data sets some caveats need to be made in advance:

- The data represents the total U.S. insurance market consisting of 770 to 1,150 companies, depending on the year.
- No limitations due to ring-fencing have been considered, i.e. we assume no limitation on the fungibility of available cash, as the analysis is based on market data.
- All cash flow information is on a yearly basis and we did not determine a cash flow distribution within the year. We assumed that the yearly cash flow took place simultaneously, thus no short-term bridge financing has been applied.

Box 2: U.S. life insurance as covered by the NAIC data set

We need to distinguish clearly between two kinds of policy surrenders: 1) general account—the shareholder takes the investment risk and 2) separate account—the policyholder takes the investment risk.

- Separate accounts exist mainly in the annuity business for both individual (variable annuities) and group business and they have fully allocated assets for each policyholder. A surrender request leads to the liquidation of these specific assets where the market risk is fully carried by the policyholder. All acquired investment guarantees lapse with the surrendering of a policy.
- General account liabilities, however, are covered by a pool of assets, while market risk is carried by the shareholder.

For analysing potential liquidity risks of insurers and the overall industry, the latter are more relevant regarding liquidity risk. However to analyse the market impact of potential large asset sales due to surrenders, separate account policies have to be considered.

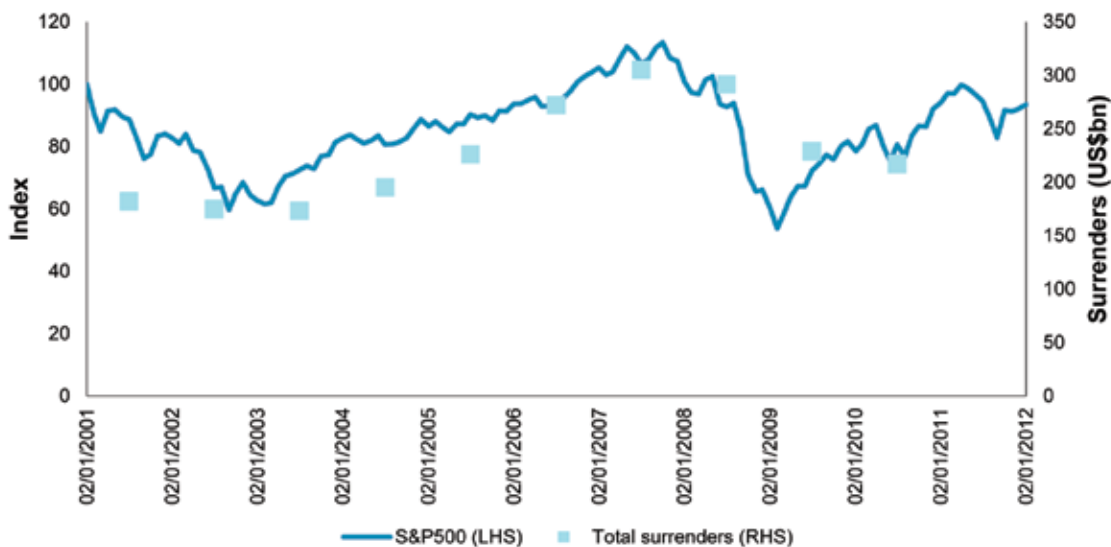
Exhibit 5 next page shows the overall level of surrenders on U.S. life insurance policies compared with the performance of the S&P500.

The exhibit provides an illustration of the correlation between the total surrenders in life insurance policies in the U.S. and the performance of the U.S. equity market. As equity markets rose from 2003 to 2007 there was an increase in the total surrenders paid on U.S. life insurance contracts. When equity markets dropped in 2007 and 2008, the total surrenders paid also dropped.

We are using the concept of different levels of absorption for our analysis in order to assess to what extent companies could have paid surrenders out of two levels of normal cash flow generated by the operation based on the numbers of each individual year. Only the third level of absorption as described below, includes sales of liquid assets in order to achieve hypothetical surrender requests based on the scenario explained later on.

¹⁵ Calculation of surrender rates is not possible with the NAIC data.

Exhibit 5: U.S. surrenders compared with U.S. equity market performance



Source: annual statement data of the U.S. life insurers in the NAIC databases, Datastream.
 Note: surrenders are of life insurance and annuity products combined.

The different “levels of absorption” are the following:

First level of absorption: Yearly generated net operating cash flow from insurance and investment activities including available cash at the beginning of the year. We analyse what would have been the total potential maximum surrender amounts payable if this amount was fully used.

Second level of absorption: Yearly generated net operating cash flow including available cash at the beginning of the year plus matured bonds in that given year. As with the first level of absorption we analyse what would be the total potential maximum surrender amounts payable if this amount was fully used.

Third level of absorption: Sales of assets (before maturity).

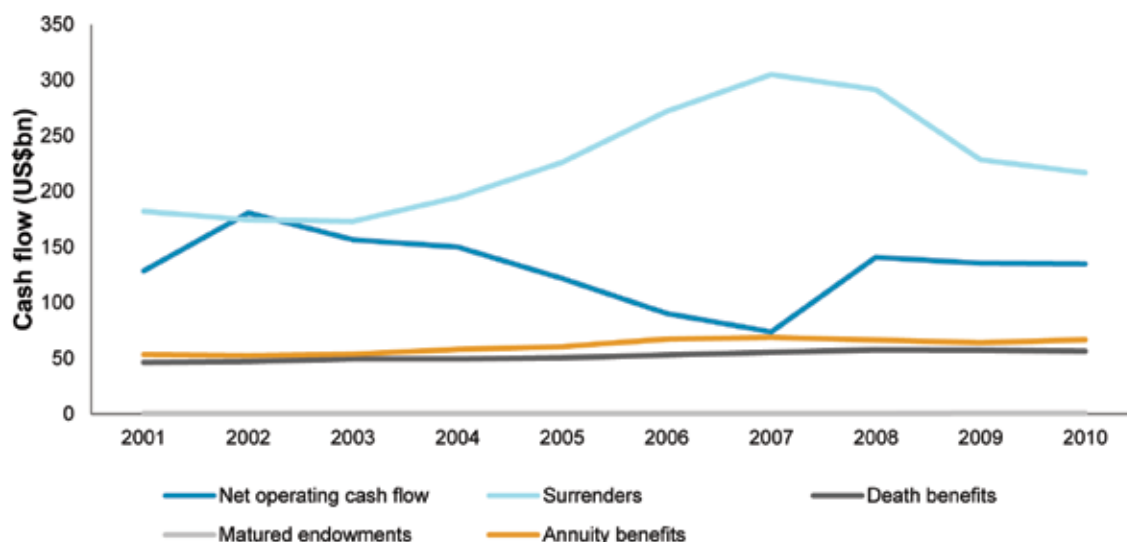
The results of the analysis are presented below.

5.1. During 2002-2010 all surrenders were paid by the industry leaving a positive net operating cash flow every year

Exhibit 6 includes the total U.S. life operations, general accounts and separate accounts business. It shows that death benefits, matured endowments and annuity benefits evolved in a very stable manner over the years. In contrast, surrenders increased significantly until the peak in 2007 (almost doubling from the 2003 level). The increase of surrenders corresponds to the simultaneous decline of net operating cash flow. In the subsequent years the surrenders dropped back to the pre-peak level. Surrenders were covered in every single year by the yearly generated net operating cash flow, even at its peak in 2007 (2007 net operating cash flow, roughly US\$75bn positive). At a market level, no investment sales activities were required to finance the surrenders.¹⁶

¹⁶ This does not exclude the possibility, of course, that single companies had to sell some assets.

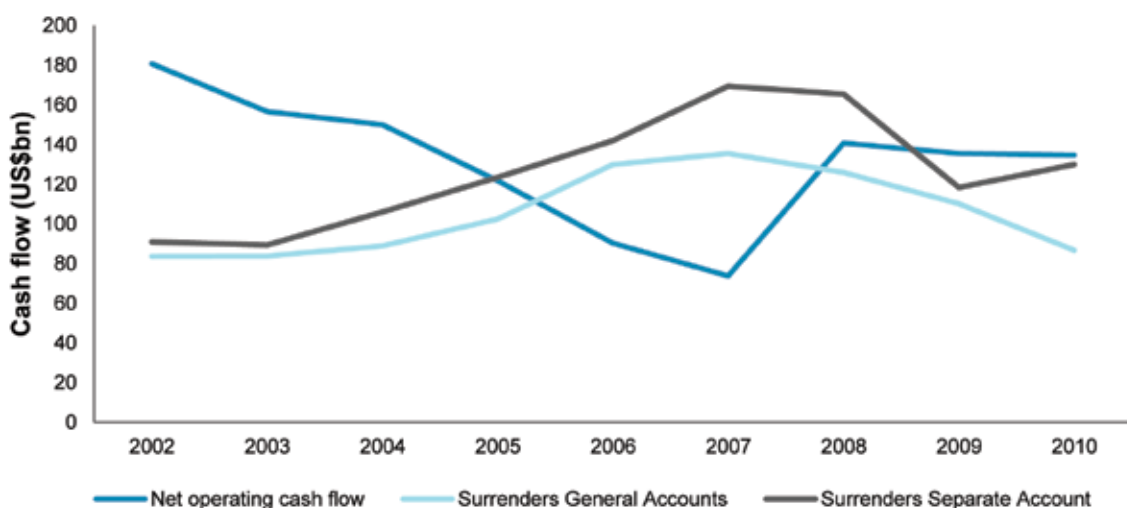
Exhibit 6: Cash outflows compared with net operating cash flow



Source: annual statement data of the U.S. life insurers in the NAIC databases.
 Note: the cash outflows are for all benefits and surrenders.

5.2. The evolution of separate account surrenders between 2002 and 2010 may be driven by changes in interest rates

Exhibit 7: Cash outflow for surrenders compared with net operating cash flow



Source: annual statement data of the U.S. life insurers in the NAIC databases.
 Note: the cash outflows are for all benefits and surrenders.

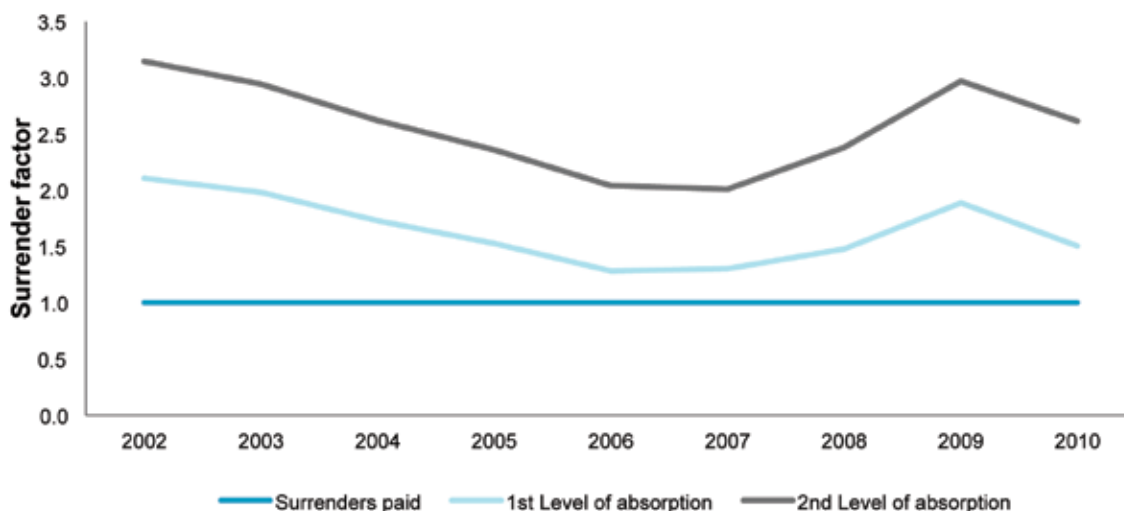
The above exhibit shows the surrenders separated into general accounts and separate accounts. As explained earlier, the surrenders of separate accounts can have other reasons and meanings for the policyholder than the ones from the general account. For the companies as well the consequences are different, as in separate accounts the assets are allocated per policyholder and the risk is borne by the policyholder. The separate account surrenders are higher over the whole period in particular in the peak years of 2007/8. One explanation could be that policyholders realised gains from their assets—over these two years stock markets were very high before they fell significantly during 2009.

5.3. The first and second level of absorption could have covered between 1.3 and 3 times the actual surrenders during this period

In order to assess the resilience of the U.S. life insurance market to liquidity crunches, we consider how large the aggregate surrenders could have become before forcing the industry to sell investments to raise cash. This assessment was done based on the actual cash flow of the years 2002-2010.

Exhibit 8 shows the maximum aggregate surrenders that could have been paid per year without having to sell any investments per the level of absorption. As explained above, the difference between the first and second level of absorption is the bonds that mature in the given years. Looking at the second level of absorption, the industry could have coped with twice the actual surrenders paid in the worst year 2007 (with regard to aggregate surrenders) without having to sell additional assets and create a potential downturn in the markets.

Exhibit 8: Surrender factors for the first and second level of absorption

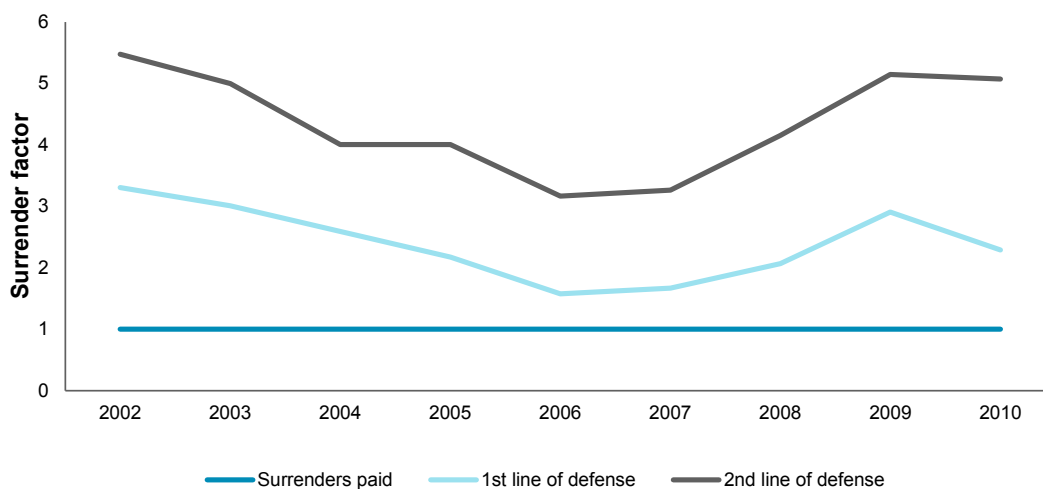


Source: annual statement data of the U.S. life insurers in the NAIC databases.

Notes: Surrenders are of life insurance and annuity products in both general accounts and separate account. The surrender factor is the ratio of the surrenders in dollars to the operating cash flow in the first level of absorption and cash flow plus available liquid assets (almost matured bonds and stocks) in the second level of absorption.

5.4. The cash-surrender ratio is constantly higher for the general account than for the overall business

Exhibit 9 shows the first and second levels of absorption of general accounts. The coverage is constantly higher in the general account than in the total business because the separate account has a much lower coverage. In the most critical year 2006/7 the general account could have coped with more than three times the actual paid surrenders without selling any assets.

Exhibit 9: Surrender factors for the first and second level of absorption for general accounts only

Source: annual statement data of the U.S. life insurers in the NAIC databases.

Notes: Surrenders are of life insurance and annuity products in the general accounts only. The surrender factor is the ratio of the surrenders in dollars to the operating cash flow in the first level of absorption and cash flow plus available liquid assets (almost matured bonds and stocks) in the second level of absorption.

Mass surrender scenario¹⁷

Based on this empirical evidence we assume, in a second step, a more challenging surrender scenario and consider the resilience of the industry if significantly more policies had been surrendered. In particular we look at the market liquidity position if such a scenario had occurred.

The scenario which is based on actual numbers for the relevant time period must be seen as one-time events and not as cumulative events. To compare the following scenario with the above accumulated two levels of absorption, it covers surrenders in the magnitude of, depending on the year, between 2 and 3.2 times the actual ordinary life surrenders and between 30 per cent and 40 per cent of the annuities account balances.

Scenario: Assuming 10 times the actual surrenders for ordinary life insurance policies and surrenders of 60 per cent of the account balance of annuity policies.¹⁸

¹⁷ For this project, Dr Etti Baranoff, Research Director, Insurance and Finance Programme at The Geneva Association and Insurance and Finance Professor at Virginia Commonwealth University also conducted Value at Risk (VaR) and stress analyses using the University's access to the @Risk_Software and the aggregate data for the U.S. life industry during the period 2002-2010. For each outlay of money (surrenders and benefits) and each liquid asset (cash flow, matured bonds, and publicly traded assets), she fitted a statistical distribution that reflected the pattern of the data for the nine years. Net liquidity was computed for the various levels of absorption (liquidity available minus liquidity outlay). The net liquidity for each level of absorption became the outputs for the simulations. The results of the simulations based on the nine years of data show that the industry was not at a negative liquidity even at the 5 per cent VaR. There appeared to be less than 5 per cent likelihood that the U.S. life industry would run out of cash for the first level of absorption and no likelihood that the industry will run out of cash for the second level of absorption simulating the 2002-2010 data. For interested parties, the working paper *Value at Risk (VaR) Analysis and Stress Tests of the U.S. Life Insurance Industry Liquidity during 2002-2010* is available upon request.

¹⁸ Between 10 per cent and 15 per cent of annuities' account balance have been surrendered in the period from 2002-2010. The above scenario requires a four- to fivefold increase of annuities surrenders.

Table 2: Total business (US\$bn)

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Actual paid surrenders per year	174.6	173.2	195.0	226.0	272.0	305.2	291.6	228.7	216.8
Surrenders paid per above scenario	970.1	1,025.8	1,157.9	1,290.9	1,366.8	1,520.5	1,677.4	1,416.7	1,443.5
Covered by 1st level of absorption	368.0	343.4	337.2	345.6	349.1	397.5	431.9	431.9	326.2
Covered by 2nd level of absorption	549.7	509.9	511.4	533.1	555.6	613.6	694.9	679.1	567.4
Sold liquid assets	420.4	515.9	646.5	757.7	811.2	906.9	982.5	737.7	876.1
Remaining liquid assets	2,007.1	2,270.2	2,429.5	2,537.0	2,734.9	2,832.1	2,208.0	2,805.9	2,964.8

Source: annual statement data of the U.S. life insurers in the NAIC databases.

Notes: Total business refers to the aggregate U.S. life insurers total general and separate accounts. The scenario is 10 times the actual surrenders for ordinary life insurance policies and surrenders of 60 per cent of the account balance of annuity policies.

The scenario chosen above leads to an increase of 4 to 5 times in the actual paid surrenders per year. The highest amount of bond sales is required in 2008 with an amount of US\$982bn, which makes up roughly 30 per cent of total liquid assets. Of the total surrenders of US\$1,677bn, US\$695bn would be covered by the second level of absorption and the rest by the sale of liquid assets, mainly government and corporate bonds. Note that these sales are executed over a full calendar year. This scenario increases the surrenders paid from actual US\$291bn to US\$1,677bn, which is an increase of more than 500 per cent.

Table 3: General accounts (US\$bn)

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Actual paid surrenders per year	83.7	83.8	88.9	102.5	130.0	135.6	126.0	110.2	86.8
Surrenders paid scenario	513.8	583.9	565.9	578.4	541.9	596.3	547.0	660.8	655.4
Covered by 1st level of absorption	276.3	252.2	230.5	223.0	204.8	226.3	260.7	320.2	199.0
Covered by 2nd level of absorption	458.0	418.7	404.7	410.6	411.3	442.4	523.7	567.3	440.1
Sold liquid assets	55.8	165.2	161.2	167.8	130.6	153.8	23.3	93.6	215.3
Remaining liquid assets	1,219.4	1,303.8	1,445.2	1,565.9	1,697.0	1,677.3	1,816.3	1,727.9	1,704.5

Source: annual statement data of the U.S. life insurers in the NAIC databases.

Notes: General accounts refers to the aggregate U.S. life insurers totals. The scenario is 10 times the actual surrenders for ordinary life insurance policies and surrenders of 60 per cent of the account balance of annuity policies.

Applying the same scenario to products that are based on the general account only requires significantly fewer assets to be sold (as compared to all of the products, which include the separate accounts). The highest share of assets sold would be in 2003, when the US\$165.2bn makes up roughly 11 per cent of total general account liquid assets. The resilience of the general account determines the vulnerability of the industry of unexpected large surrenders, as there is linking of assets and liabilities for separate accounts.

Table 4: Selected U.S. bond market data (US\$bn)

	Issuance in the U.S. bond markets	Outstanding U.S. bond market debt	Average daily trading volume
2002	5,323.1	20,091.9	631.2
2003	6,812.4	21,854.0	751.8
2004	4,570.2	24,402.3	817.3
2005	5,574.4	26,495.5	918.6
2006	5,883.6	29,308.2	893.1
2007	5,992.1	32,096.7	1,014.9
2008	4,661.6	33,515.0	1,036.1
2009	6,806.0	34,500.5	817.8
2010	6,574.5	36,112.4	954.0
2011	5,405.3	36,616.7	908.7

Source: Securities Industry and Financial Markets Association

To put the required sales as per the above scenario into perspective with figures from the U.S. bond market, the US\$ 982bn (yearly basis) for 2008 represent less than the average daily trading volume in 2008 or roughly 3 per cent of the total outstanding U.S. bonds. In the scenarios described above, the sales of bonds would be required over the course of a year and would be the required sales for the insurance industry as we do not consider individual company figures.

The U.S. bond market is not expected to suffer significant pressure due to these additional sales activities. However, if the pressure to sell bonds is over a shorter time period (for example weeks as a result of a sudden mass lapse event) then the sales may increase the impact on the market.

6. Outlook—a role for policymakers, supervisors and regulators, in preventing and handling mass surrenders

In the previous sections we saw that customers usually buy life insurance policies for the long term. In contrast to other financial products, customers do not generally expect liquidity at any given time from life insurance policies. They have massive disincentives to surrender—if the product includes an option to surrender at all. Empirical data from major insurance markets show that over the last years, market surrender rates have not at all reached alarming levels. They have even decreased since 2007.

Insurance companies are nevertheless prepared to deal with the unexpected and have put comprehensive liquidity management routines in place. On a rolling basis, companies regularly check whether they have enough liquidity to withstand panic surrender scenarios, also in times of adverse capital market developments contingency plans are developed for scenarios in which company-specific risk tolerance levels are breached. The implementation of sound liquidity management is not just a regulatory requirement, it is additionally enforced by rating agencies who have made it an object of scrutiny. Differentiation between product lines is at the heart of understanding and managing liquidity risk in life insurance. Liquidity demands should be inherently reflected in the design of the different life insurance products.

Having addressed what insurance companies can do in order to manage liquidity risk with regard to mass surrenders risk, it is now appropriate to discuss the role that regulators, supervisors and policymakers play during extraordinary times. What tools do they have to prevent mass surrenders from occurring and how can they support insurance companies in dealing with them if they occur?

6.1. Policymakers need to ensure that macroeconomic stability is maintained

It is the task of policymakers and central bankers to prevent the emergence of a macroeconomic environment inducing mass-surrenders. In particular:

- unemployment should not exceed destabilising levels;
- stability of the currency needs to be maintained;
- high volatility of interest rates needs to be avoided.

6.2. Regulators should be cautious not to lower surrender penalties

The likelihood of mass surrender will increase whenever regulators:

- introduce minimum surrender values for life insurance products where the insurer bears the investment risk which may force insurance companies under certain market conditions to sell assets prematurely with losses;
- restrict risk assessment performed by insurance companies before concluding new life insurance contracts; and,
- restrict surrender charges.

Such provisions may have different impacts on different groups of customers: they could protect customers who are willing to surrender at the expense of those who want to continue their contracts until maturity. As a cumulative effect of such provisions, life insurance companies might cease to provide certain products because their liquidity risk becomes too difficult to manage.

6.3. In times of extreme mass surrenders, rigid rules regarding ring-fencing that prevent asset exchanges across borders between the local entities of internationally active insurance companies or between life and non-life entities of a group would be counterproductive

It goes without saying that it is not impossible to simulate conditions in which the different “levels of absorption” available to insurance companies are strained. In such a situation it is key that the potential of insurance companies to mobilise internal cash sources is not artificially restricted. Strict ring-fencing of legal entities may give rise to additional liquidity needs. Transferability of assets within a group, on the other hand, exploits economies of scope via diversification effects. Of course, cross-subsidisation of one entity by another is to be prohibited. However, fair trading of liquid against illiquid assets in line with the arm’s length principle should be permitted.

6.4. Japan and France have explicitly empowered supervisory authorities to suspend surrenders under certain circumstances

In a scenario where some broader economic factors were to trigger mass panic surrenders, asset disposals during stressed market conditions would not necessarily be in the best interests of all policyholders (both those who wish to surrender and those who wish to continue their policies). In such circumstances, insurers and their supervisors need to consider the potential impact and manage the situation accordingly. One potential course of action in such circumstances would be to suspend the payment of surrenders.

Supervisors in different jurisdictions may have implicit or explicit powers to suspend the payment of surrenders by insurers. Some examples of explicit supervisory powers are set out below.

It is interesting to see that some jurisdictions have specific provisions for such scenarios:

- In Japan, Art. 132 of the Insurance Business Act gives the supervisory authority the power to request companies to fully or partially suspend surrenders as long as such intervention would ensure soundness in management of the insurance company in light of the situation of the business or the property of the insurance company, or the situation of the assets of the insurance company.

- Likewise in France, Art. L 612-33 of the *Code monétaire et financier* allows regulators to suspend or limit the payment of surrender values and other withdrawals if liquidity of a company or the interests of policyholders and beneficiaries are compromised.

In both countries, authorities are given some scope of discretion regarding the decision to exercise these powers and the definition of a trigger point. For a proper assessment of the situation, company's liquidity management tools mentioned above provide a valuable basis.

6.5. As in the case of circuit breakers, provisions for limiting trade on stock exchanges and partial suspension of surrenders can be economically justified

The partial suspension of the policyholders' right to surrender is, of course, a public intervention that needs justification. For this purpose it might be appropriate to refer to similar rules in place for stock exchanges. Many jurisdictions give stock exchange companies the right to interrupt the trade of securities under certain conditions.¹⁹ *Inter alia*, this could be:

- the emergence of new information which can be expected to lead to huge reactions of security prices; or,
- high volatility of market prices per se, above a certain threshold percentage per day.

The rationale for such a circuit-breaker is to stop panic and self-reinforcing herd behaviour, which might be disadvantageous particularly for smaller market participants who are then given the chance to assess the situation calmly. Apart from this “paternalistic” argument, the prevention of potential negative spillovers of a panic-driven reaction to other market participants provides a second rationale for this type of intervention.

Compared to actors at a stock exchange, the usual life policyholder can be presumed to be much less prepared to react rationally to dramatic changes of the economic environment. Therefore the ability of supervisors in each jurisdiction to suspend the rights of policyholders to surrender should be considered.

It is true that supervisory authorities have never exercised their powers either in Japan or in France. However, this does not mean that they are superfluous. It is fair to say that the mere existence of these provisions could have a beneficial preventive impact: policyholders receive a credible signal that policyholders who do not surrender their policies will be protected from the negative impact of larger surrenders in the policyholder community. It goes without saying that for supervisory powers to have an impact, policyholders need to be aware of them.

Central Banks have been willing in the past to buy government bonds even under strained capital market conditions. In a mass surrender scenario, this willingness will help the insurance sector to deal with the situation. Likewise, repo agreements between insurance companies and Central Banks might help: by selling some assets to Central Banks via a repo transaction the generated cash could be used to satisfy the immediate liquidity need of the insurer. The insurer would have to demonstrate that future positive operating cash flow, including the cash from matured bonds, will enable him to repurchase the assets from the Central Bank.

¹⁹ See, e.g. rule 80 B of the U.S. Securities and Exchange Commission (trading halts due to extraordinary market volatility) or § 25 Deutsches Börsengesetz.

Annex 1: The Ethias case

At the end of 2003, Ethias became the new brand of the former SMAP (*Société mutuelle des Administrations publiques*) whose former Managing Director, Leon Lewalle, had been given a few years suspended sentence in May 2004 for embezzlement. Until 2000 the company only operated in the public sector on the state and regional levels.

Ethias is the third largest insurance company in Belgium. Until very recently, it was organised as a mutual. It is now a limited company (SA), with the Belgian Federal State and the Flemish and Walloon Regions owning 75 per cent. The Ethias core customer base consisted of Belgian municipalities and local public authorities which, as a consequence of Ethias mutual status, played a dominant role in its governance. Former company Chairmen, Steve Stevaerts and Jean-Pierre Graffé, are still Board Members and used to be pre-eminent figures of Belgian politics. The current Chairman Erik de Lembre, elected in 2009, was the first in Ethias history to be a professional with no specific political background.

Ethias used to be a non-life company, focusing solely on local public authorities. Over time, it diversified its operations into life and its customer base into retail. In 2008, Ethias collected €2.24bn in life insurance premium and €1.2bn in non-life premium, representing a market share of about 15 per cent and 12 per cent, respectively. Ethias liabilities amounted to €25.6bn. The flagship product from the life range had been, for a long time, a long-term pension plan (“First”) with a guarantee on capital and minimum returns. Its main feature was, contrary to life insurance industry practice, the lack of any lapse/surrender penalty and very low fees (or even total absence of fees for older generation products). Ethias profits were based on profit participation only.

The market had been complaining for a long time to the Belgian Supervision Authority (CBFA) about the risk presented by the First account, the features of which were closer to a liquid banking savings account than an insurance product.

Financial turmoil hit Ethias while it had not yet reformed its governance according to CBFA audits and recommendations to introduce more transparency within the company processes.

From September to mid-October 2008, Ethias had to face the consequences of a major asset & liability mismatch, namely:

- Significant unrealised capital losses on large corporate and structured bonds portfolios.
- Large unrealised capital losses due to large equity exposure to Dexia (of which Ethias owned 5 per cent), booked at €9.9 per share in Ethias’ books, even when the share price had dropped to below €3. The stake in Dexia was admitted to cover technical liabilities of Ethias although being fully illiquid as a result of a shareholding agreement with Dexia.
- Ethias was well known for paying high guaranteed returns of up to 7 per cent on First products.

- Ethias also suffered reputational damage originating from the marketing of Lehman products to local city councils. The company's own exposure to Lehman amounted to 7 per cent of its shareholders' funds.

Fitch downgraded Ethias' financial strength rating twice, in July 2008 and September 2009 (A-, with a negative outlook).

Ethias' situation deteriorated substantially during the financial crisis and spiralled out of control from September 2008.

Two weeks into October, CBFA asked Ethias, on a confidential basis, to submit a recovery plan to remedy the solvency problems resulting from eroding asset values.

On Friday 17 October 2008, Guy Burton, Ethias Managing Director, surprisingly made a public announcement in the French economic daily newspaper *La Tribune* disclosing that the company needed to raise €1.5bn in new capital before Tuesday 21 October following a CBFA request:

“One point five billion is the minimum to be able to continue to exist without being put under trusteeship. But to continue our growth we need 3 billion.”

This untimely, unexpected, and largely unexplained²⁰ statement on the real financial condition of the company triggered significant redemptions from policyholders. This “run”, however, was limited to the first range of products. It amounted to €110m within three days. During this period, Ethias' liquidity position remained strong enough to meet all immediate cash demands. There was no queuing in front of Dexia's counters as occurred with Fortis, for example.

Redemptions quickly stopped, further to:

- the immediate dismissal of Guy Burton and his replacement by the International Director of the company, Bernard Thiry;
- a statement from the CBFA denying any deadline for Ethias effective restructuring but confirming the need of additional own funds to restore the company's solvency; and,
- the confirmation of the €100,000 State guarantee on individual deposits being applied to Ethias.

Later, and after the so-called “run” had stopped, the Belgian Authorities (Federal State, Flemish and Walloon Regions) injected €1.5bn in capital to restore the company's solvency margin and imposed radical changes to the company's governance.

Why is the Ethias case irrelevant to any attempts to substantiate the possibility of a banking-type “run” on an insurance company?

- The Ethias run was limited to a very small portion of the company's product range, the First product which was basically a bank savings deposit, redeemable at any time, at no penalty, with hardly any insurance features. Ethias P&C (Property & Casualty) business remained profitable and business volumes did not suffer substantially.
- The First product offered high guaranteed returns (often the highest in the Belgian market), with no administration fees charged. Besides, it appeared that bonus payments to Ethias management were linked to revenue growth targets. This encouraged sub-optimal risk management practices.
- Redemption amounts were rather small compared to Ethias liabilities (€110m versus €25.6bn), and immediately available cash. Ethias clearly took advantage of the stability of its insurance operations to absorb withdrawals related to liquidating the First savings product, i.e. quasi-banking liabilities.

²⁰ Widespread and long lasting rumours circulated in the market that Burton's statement was aimed at making an overhaul of Ethias' control and consequently a change in Dexia's holding easier.

- Ethias had to face a solvency gap, not a liquidity stress. The solvency gap was caused by unrealised capital losses on corporate and structured bonds and the Dexia stake. Bonds by nature were to be held to maturity with no need to sell immediately. The Dexia stake, although admitted for the calculation of the solvency margin, was never available for sale due to a shareholding agreement with Dexia.
- Proper insurance guarantee schemes proved to be effective tools to prevent large-scale and spiralling redemption moves from policyholders.
- The redemptions were triggered by very unusual behaviour from a senior executive.
- Ethias' difficulties at the time of the financial turmoil were compounded by severe, company-specific, long-standing, well-known and unaddressed governance and operational deficiencies.

Annex 2: Mass surrenders in the Korean life insurance market during the 1998 currency crisis

In the late 1990s, Korea was hit by the Asian currency crisis which started in Thailand and continued with speculative attacks in neighbouring countries. Consequences included a depreciation of the local currency, the Won, and a massive flight of foreign capital. Subsequent to liberalisation steps undertaken in the mid-90s, there was a mismatch by end 1997 between short-term foreign debts amounting to US\$63bn and stock of gross foreign reserves amounting to US\$9.1bn.²¹ In December 1997, Korea received an IMF rescue package of US\$58bn.

The currency crisis had significant impact on the real economy: Korea experienced a sharp increase in market interest rates from 12 to 13 per cent at the beginning of 1997 to 30 per cent by the end of the year. Moreover, GDP decreased by 6.7 per cent, with a drop of annual personal income from US\$10,000 to US\$6,000. The unemployment rate increased from 2 per cent to 8.4 per cent.

Financial distress also spread to the insurance sector, which at that time was already the sixth biggest life insurance market. With regard to product structure and the development of the regulatory framework, it was nevertheless a comparatively young market:

- The regulatory framework, in particular the prevailing valuation principles for accounting and prudential supervisory purposes, did not reflect market value deviations from book values.
- Certain companies were undercapitalised. High growth rates seduced up-front financing by premium income. Certain companies did not have sufficient assets to cover liabilities.
- On the product side the market was largely dominated by bank-like savings products. Surrender charges were very low, with the effect that policyholders had little incentive not to withdraw their money short-term, e.g. in reaction to changing interest rates. Protection products only had a small niche.²²

The extent of mass surrender during the crisis is illustrated by company-specific monthly surrender/withdrawal rates for different financial products which are characterised by different interest rate sensitivities.²³ One month later, the market interest rate peaked at 30 per cent:

- products similar to short-term deposit accounts showed a maximum monthly surrender rate of 19 per cent;
- products similar to long-term savings accounts showed a maximum monthly surrender rate of 6.3 per cent; and,
- total annuities showed a maximum monthly surrender rate of 4 per cent.

21 Kihwan (2006), p. 5.

22 Lee (2001), p. 481.

23 Kim (2005), p. 58.

This can be taken as a product-specific confirmation of the interest rate hypothesis (see Exhibit 1 page 12).

The crisis also revealed a tight correlation between unemployment rates and surrender rates (see Exhibit 2 page 13), which is consistent with the emergency fund hypothesis of surrender behaviour.²⁴ This can be explained by the need to have access to additional cash sources while simultaneously reducing cash requirements. Both refer to the rapid and steep decline of per capita income that people face when they lose their jobs.

As a consequence of the crisis, gross written premiums fell from US\$47bn (1996) to US\$35bn (1998) due to a decline in new business and withdrawals. Ten out of 33 life insurance companies left the markets, be it by merger, licence revocation or liquidation. Early in 1998, several life insurance companies faced liquidity problems and had to sell their assets at lower prices—the quality of many assets had dramatically decreased.

What are the lessons to be learned from the Korean experience?

The currency crisis can be considered a massive stress test for a life insurance market that was characterised by a huge share of bank-like products and, due to valuation standards, had a little-developed early warning system. Stress factors were the sharp increase of the market interest rate and the increase of unemployment rate. In any case, the life insurance industry had in no way been the cause of the economic crisis. On the contrary: as in any other industry, insurers had to deal with the consequences of this crisis, i.e. mass surrenders.

Korean regulators have since adopted and implemented the IMF recommendations to reform their regulatory framework. Prudential regulation and accounting practices have been brought up to international standards and corporate governance has been strengthened.

²⁴ Kim (2007), Figure 4. The figure refers to company-specific surrender data regarding single premium deferred annuity products which are interest-indexed. Surrender charges depend on the age of the policy: they amount to 7 to 10 per cent during the first seven years of the contract. Over time, surrender charges drop to nil.

Annex 3: Glossary

(Life insurance) annuity: Insurance contract in which the seller (in most cases an insurance company) makes a series of future payments to a buyer (annuitant) in exchange for the immediate payment of either a lump premium or periodic regular premiums. The periodic payments by the insurance company can be either life-long benefits (calculated on the basis of mortality tables) for the annuitant and or the survivor or benefits for a fixed period of time. Depending on the contract, deferred annuities can be distinguished from annuities starting immediately.

Asset-liability management (ALM): For financial institutions, asset and liability management is the practice of managing risks such as liquidity risk, interest rate risk, credit risk and operational risk that arise due to mismatches between their assets and liabilities (debts and assets).

Beneficiary: Person receiving benefits paid by a (life) insurance company at maturity or at occurrence of the insured event (e.g. death of policyholder or another person).

Cash flow: Stream of revenues and expenses that change the cash account in a given period. Cash inflows result from a number of sources (e.g. premium income, investment returns). The same holds true for cash outflows (e.g. paid claims, surrenders, expenses). The accounting statement for cash flows shows the amount of cash generated and used by an (insurance) company over a given period.

Defined benefit plan: Type of workplace pension plan where an employer promises a specified monthly benefit at retirement that is predetermined in advance by a formula (e.g. based on the employee's earnings history, tenure and age), rather than depending on investment returns. It is "defined" in the sense that the formula for computing the employee benefit is the only known part. The contribution is done using actuarial assumptions that include time value of money, mortality, turnover of employees and more.

Defined contribution plan: Pension or profit-sharing plan in which the amount of the employer's and/or employees' annual contribution may be specified. Individual accounts are set up for participants and benefits are based on the amounts credited to these accounts (through employer contributions and/or employee contributions) plus any investment earnings on the money in the account. In pension plans that are defined contribution, the employer's contributions to the accounts are guaranteed, not the future benefits and future benefits fluctuate on the basis of investment earnings.

Endowment policy: Life insurance contract with a savings component. Designed to pay a lump sum after a specified term (on its "maturity") or on death. Policies are typically traditional with-profits or unit-linked.

General account: In the Statutory Annual Statement of life insurers in the U.S., all activities that are not in variable annuities or variable life type of products are the risk of the insurers. Such activities are the general accounts.

Group annuity: All products that are sold to employers or groups are considered group products. Underwriting for group life or health is conducted based on the group characteristics, not the individual.

Group insurance: Insurance which is issued to a group (employees of the same company, members of trade associations, etc.) which provides coverage to group members and their dependants. With regard to certain criteria, risk assessment can be done on group basis. The group is issued a contract. The individual is issued a certificate.

Insurance policyholder: Legal person in whose name the insurance policy is registered.

Lapse: Termination of an insurance contract due to stopping premium payment by the policyholder before maturity or occurrence of the insured event without any cash value paid to the policyholder.

Liquidity: The extent to which a person or organisation has cash to meet immediate and short-term obligations or assets that can be quickly converted for this purpose.

Ordinary life insurance: Life insurance that contains mortality risk and an investment component, cash value.

Policy loan: A loan issued by an insurance company that uses the cash value of a person's life insurance policy as collateral.

Ring-fencing: Ring-fenced funds arise as a result of an arrangement where:

- there is a barrier to the sharing of profits/losses arising from different parts of the undertaking's business, leading to a reduction in pooling and diversification;
- own funds (restricted own funds) can only be used to cover losses on a defined portion of the business's (re)insurance portfolio or with respect to particular policyholders or in relation to particular risks; and,
- both a) and b) apply.²⁵

Separate account: In the Statutory Annual Statement of life insurers in the U.S. the accounts of variable life and annuity policies. These are products with investments in the stock markets.

Solvency: Ability of (insurance) companies to have enough capital to absorb all the risk inherent in the insurance's business based on a risk-based calculation. Not to be confused with the liquidity statement of a company which measures the company's ability to pay out liabilities with available liquid assets.

Surrender: Termination of a (life) insurance contract by the policyholder before maturity or occurrence of the insured event where a cash value is available for payment to the policyholder.

Surrender value: Amount of money an insurance company will pay in the event of surrender.

Surrender charge: Reduces the amount of cash to be paid out to the policyholder in the case of surrender. Such charges allow the insurance company to recover pre-financed costs, e.g. related to distribution, risk assessment and issuance of the policy, which otherwise would have to be borne by the insured collective.

Term life insurance: Life insurance policy which covers the mortality risk only without the investment component. The premiums are at a fixed rate of payments for a limited period of time (term). Does not include a savings element and has no surrender value (protection policy).

²⁵ CEIOPS (2010).

Unit-linked life insurance: Endowment life policy the investment benefits of which are directly in proportion to the value of an underlying asset often chosen by the policyholder. The assets are held by the insurance company who legally owns them. The policyholder bears the investment risk and sometimes has contractual options to switch the underlying assets.

With-profits policies: Endowment life policy where the policyholder shares profits of the insurance company. In contrast to unit-linked policies where investments are individualised assets held as collective investments. With-profit policies typically include a form of minimum capital guarantee which is independent of the company's investment performance.

Workplace pensions (occupational pensions): Pension entitlements for employees (e.g. retirement benefits, death benefits, disability benefits) are established by a promise made by an employer. The benefit paid out will depend on the organisation as defined benefit or defined contribution plan. Contributions are paid by employers and/or employees. Employers can decide to involve a financial institution (insurance company or pension fund) in order to deliver on their promise. If so, employers are policyholders whereas employees are beneficiaries.

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The Geneva Association

The Geneva Association:

- ***provides a platform for insurance CEOs:***

The Geneva Association acts as a forum for its members, providing a worldwide unique platform for the top insurance CEOs. It organises the framework for its members to exchange ideas and discuss key strategic issues, especially at the General Assembly where once per year more than 50 top insurance CEOs gather.

- ***conducts research:***

The Geneva Association investigates the growing importance of worldwide insurance activities in all sectors of the economy. It tries to identify fundamental trends and strategic issues where insurance plays a substantial role or which influence the insurance sector. In parallel, The Geneva Association develops and encourages various initiatives concerning the evolution- in economic and cultural terms-of risk management and the notion of uncertainty in the modern economy.

- ***organises expert networks:***

The Geneva Association organises global networks for experts in various fields linked to insurance: finance, regulation, risk management, pension provision, health, etc. It also manages several extra-company networks of specialists from its members' companies: chief financial officers, chief risk officers, chief investment officers, chief communication officers, the Amsterdam Circle of Chief Economists (ACCE), as well as the Liability Regimes Planning Board with leading underwriters and claims-handlers and the *PROGRES. Net* initiative for chief regulation officers and top regulatory experts in insurance.

- ***maintains dialogue with international institutions:***

The Geneva Association uses its special risk and insurance expertise and in-depth knowledge to raise subjects of relevance to the insurance sector in global forums. The Geneva Association is the leading interface of the insurance industry with relevant international institutions and advocates the role of insurance and its relevance to the modern economy.

- ***publishes leading insurance journals, newsletters, books and monographs:***

- **journals:** *The Geneva Papers on Risk and Insurance Issues and Practice* (4 issues per year) and *The Geneva Risk and Insurance Review* (2 issues per year);

- **special reports:** Geneva Association reports tackles issues of strategic importance to the insurance industry that warrant special attention and particular analysis;

- **The Geneva Association newsletters**, usually published twice a year, on Insurance and Finance, Risk Management, PROGRES (regulation and supervision), Insurance Economics, Four Pillars (life insurance, pension and retirement), Health and Ageing, and World Fire Statistics.

- **working paper series (Etudes & Dossiers):** conference proceedings, special reports, etc;

- **books and monographs.**

- ***organises conferences and seminars:***

Throughout the year, The Geneva Association organises or supports about 20 conferences and seminars on topics which are of high relevance to the insurance industry, gathering experts from all sectors and backgrounds to combine their knowledge. The events are topics- and issues-oriented and aim at developing new knowledge and insights as well as providing platforms for expert opinion interchange.

- *stimulates and sponsors research in insurance and risk management:*

The Geneva Association has several ways of stimulating and sponsoring research work in risk management and insurance-related fields through the availability of research grants, scholarships, prizes and support for publishing.

The Geneva Association membership is limited to a maximum of 90 persons, the CEOs of the most prominent insurance companies in the world. It is a non-profit organisation based in Geneva, Switzerland.

Publications of The Geneva Association

*For a complete list of our publications and how to get them,
consult our website at www.genevaassociation.org*

The Geneva Reports—Risk and Insurance Research

- No. 6: *Addressing the Challenge of Global Ageing—Funding Issues and Insurance Solutions*, edited by Patrick M. Liedtke and Kai-Uwe Schanz, June 2012
- No. 5: *Extreme events and insurance: 2011 annus horribilis*, edited by Christophe Courbage and Walter R. Stahel, March 2012
- No. 4: *September 11—Ten Years On; Lasting impact on the world or risk and insurance*, edited by Patrick M. Liedtke and Kai-Uwe Schanz, September 2011
- No. 3: *Anatomy of the credit crisis—An insurance reader from The Geneva Association*, edited by Patrick M. Liedtke, January 2010
- No. 2: *The insurance industry and climate change—Contribution to the global debate*, by The Geneva Association, July 2009
- No. 1: *Regulation and intervention in the insurance industry—fundamental issues*, by E. Baltensperger, P. Buomberger, A.A. Iuppa, B. Keller and A. Wicki, February 2008

Newsletters (also available as e-newsletters)

- **Insurance and Finance** deals with research activities in the fields of finance where they are relevant to the insurance and risk management sector.
 - **Special Issue**, *Everything you wanted to know about the crisis... but were afraid to ask*, by Denis Kessler, CEO, SCOR, October 2009
 - **Special Issue on G-20 London Summit**, April 2009

Insurance and Finance special contributions:

- **SC14** *Reflections on a High-Quality G-SIFI Designation Process in Insurance*, by Daniel Haefeli and Patrick M. Liedtke, April 2012
- **SC13**, *The More Underlying Capital, the Greater the Financial and Societal Stability?* by Bruno Pfister, Group Chief Executive Officer, Swiss Life, March 2012
- **SC12** *Insurance Companies' Highly Controlled Use of Derivatives Has Also Resulted in Protection from the Rogue Trader Problem*, by NAIC, January 2012
- **SC11** *The Costs of the Financial Crisis for Insurance Policyholders*, by Daniel Haefeli and Kai-Uwe Schanz, May 2011
- **SC10** *Variable Annuities with Guarantees and Use of Hedging*, by The Geneva Association Financial Stability in Insurance Working Group, March 2011
- **SC9** *The Global Financial Crisis and the Insurance Industry—Frequently Asked Questions*, by Patrick M. Liedtke and Kai-Uwe Schanz, March 2010
- **SC8** *Parallax: Striving for a More Resilient International Financial Architecture*, by Patrick M. Liedtke, November 2009
- **SC7** *The Geneva Association Letter to the Finance Ministers and Central Bank Governors of the G-20*, The Geneva Association, 5 November 2009
- **SC6** *Everything you wanted to know about the crisis ...but were afraid to ask*, by Denis Kessler, October 2009
- **SC5** *G20 Falls Short on Insurance*, by Patrick M. Liedtke, published in the *Financial Times*, 7 April 2009
- **SC4** *Insurance Comments to the G-20 London Summit Leaders' Statement of 2 April 2009*, by Patrick M. Liedtke, 6 April 2009

- **SC3** *Lessons from the Credit Crisis: An Investment Practitioner's Point of View*, by Guido Fürer and Jérôme Haegeli, 20 February 2009
- **SC2** *The Credit Crisis and the Insurance Industry—10 Frequently Asked Questions*, by Patrick M. Liedtke, November 2008
- **SC1** *Credit Crisis and Insurance—A Comment on the Role of the Industry*, by Patrick M. Liedtke, November 2008
- **PROGRES** contributes to the exchange of information on studies and initiatives aimed at better understanding the challenges in the fields of insurance regulation, supervision as well as other legal aspects.
- **Risk Management** summarises The Geneva Association's initiatives in the field of risk management and is open to contributions from any institution or company wishing to exchange information.
- **Insurance Economics** which serves as an information and liaison bulletin to promote contacts between economists at universities and in insurance and financial services companies with an interest in risk and insurance economics.
- **Four Pillars** provides information on research and publications in the field of social security, insurance, savings and employment.
- **Health and Ageing** brings together facts and figures linked to health issues for people aged 50-80 and productive ageing, to try to find solutions for the future financing of health.
- **World Fire Statistics.**
- **General Information.**

Journals

(published by Palgrave Macmillan for The Geneva Association)

- **The Geneva Papers on Risk and Insurance—Issues and Practice.** This prestigious journal, published quarterly, leads its field, publishing papers which both improve the scientific knowledge of the insurance industry and stimulate constructive dialogue between the industry and its economic and social partners.
- **The Geneva Risk and Insurance Review** is an international journal published in annual volumes of two issues. Its purpose is to support and encourage research in the economics of risk, uncertainty, insurance and related institutions by providing a forum for the scholarly exchange of findings and opinions.

Working Papers “Etudes et Dossiers”

These working documents present intermediary or final results of conference proceedings, special reports and research done by The Geneva Association and its partners. Among the last issues:

- *28th PROGRES International Seminar*, No. 390, May 2012
- *10th ART of CROs*, No. 389, May 2012
- *14th Meeting of ACCE & 6th Meeting of Chief Investment Officers*, No. 388, April 2012
- *12th CEO Insurance Summit in Asia*, No. 387, April 2012
- *2nd Climate Change Summit for Asia's Insurance Industry*, No. 386, March 2012
- *7th Chief Risk Officer Assembly, The Path to Future Growth*, No. 385, March 2012
- *8th Insurance and Finance Seminar of The Geneva Association & Presentations on The Geneva Association's Financial Stability in Insurance Initiative*, No. 384, February 2012
- *8th International Liability Regimes Conference of The Geneva Association, Economic Loss—A Breeding Ground for Liability Risks*, No. 383, January 2012

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- *8th Geneva Association Health and Ageing Conference—Insurance and Dementia*, No. 382, November 2011
 - *3rd Climate Risk and Insurance (CR+I) Seminar*, No. 381, November 2011
 - *38th Seminar of the European Group of Risk and Insurance Economists*, No. 380, October 2011
 - *M.O.R.E. 25 Seminar*, No. 379, September 2011
 - *16th International Conference on Space Activities Development—Risk Management & Insurance Aspects*, No. 378, September 2011
 - *13th Meeting of ACCE & 7.5th International Liability Regimes Conference*, No. 377, August 2011
 - *9th ART OF CROS*, No. 376, August 2011
 - *27th PROGRES International Seminar*, No. 375, July 2011
 - *11th CEO Insurance Summit in Asia*, No. 374, July 2011
 - *14th Joint Seminar of the European Association of Law and Economics and The Geneva Association “Law and Economics of Natural Hazards Management in a Changing Climate”*, No. 373, June 2011
 - *1st Climate Change Summit for Asia’s Insurance Industry*, No. 372, May 2011
 - *7th Insurance and Finance Seminar of The Geneva Association and Presentations on The Geneva Association’s Financial Stability in Insurance Initiative*, No. 371, April 2011
 - *6th Chief Risk Officer Assembly, A vision for risk management in the “new normal”*, No. 370, March 2011
 - *World Risk and Insurance Economics Congress*, No. 369, March 2011
 - *7th Geneva Association Health & Ageing Conference, U.S. and French Long-Term Care Insurance Markets Development*, No. 368, January 2011
 - *7th International Liability Regimes Conference of The Geneva Association and 12th Meeting on The Geneva Association’s Amsterdam Circle of Chief Economists*, No. 367, January 2011

In times of economic stress and uncertainty, insurance policyholders may experience liquidity stresses and need to release capital from any number of sources including, *in extremis*, life insurance policies. Conscious of the effects of liquidity stresses on banks in the recent crisis, some commentators, regulators and supervisors have questioned the effect of mass withdrawals on the insurance sector also.

In this report, *Surrenders in the Life Insurance Industry and their Impact on Liquidity*, The Geneva Association addresses these questions by examining consumers' motives for the liquidation of their assets in both normal and extreme circumstances; the means by which insurers manage surrender risk; and draws on empirical evidence of surrender behaviour in the recent and previous crises.

Using U.S. industry data for the period 2002 to 2010, the report then undertakes a significantly deeper stress-testing of insurers to understand the effects of unprecedented withdrawal scenarios on both insurance balance sheets and the U.S. bond markets.

Finally, the report analyses the potential role that regulators, supervisors and policymakers play during times of liquidity stress; what tools they have to prevent mass surrenders from occurring and how they can support the insurance industry in dealing with them if they occur.

Offering a comprehensive understanding of the effects of liquidity stresses in insurance, this report seeks to highlight the mechanisms and existing resilience and responses of the industry to liquidity crunches and thereby provide a basis of understanding for any further discussions on the issue.

For more information on the wider financial stability work of The Geneva Association, please visit our website, www.genevaassociation.org.

The Geneva Association—“International Association for the Study of Insurance Economics”
Geneva | Route de Malagnou 53, CH-1208 Geneva | Tel: +41 22 707 66 00 | Fax: +41 22 736 75 36
Basel | Sternengasse 17, CH-4051 Basel | Phone +41 61 201 35 20 | Fax +41 61 201 35 29