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Deregulation, Insurance Supervision and Guaranty Funds*

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The objective of this article is twofold: first, to present a holistic approach to insurance regulation and, second, to put forward the proposition that the establishment of guaranty funds will facilitate the effectiveness of the supervisory authorities in the European insurance markets, which will go through the consolidation process. Consolidation will materialise by means of mergers and acquisitions, exits and bankruptcies. It is argued that consumer expectations, intensified competition and the convergence of financial and insurance markets require the establishment of guaranty funds in all Member States of the European Union, in order to deal with the expected increased rate of insurer insolvencies. Such an evolution will provide supervisory authorities with more degrees of freedom in removing earlier impaired insurers from the market, instead of waiting and exacerbating the eventual insolvency deficits. The argument is that, in addition to protecting the victims of insolvencies, such an arrangement is optimal as an insurance device, which will increase consumer confidence and market stability.
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Introduction

Insurance regulation in recent years has been subject to increasing external and internal forces. Fundamental changes in the structure and performance of the insurance industry have complicated regulators' jobs. Competitive pressures have led insurers to assume greater risk in order to offer consumers more attractive prices and products, resulting in larger and more frequent insurer failures. Insurance markets have become increasingly international in scope as insurers have widened the boundaries of their operations. High costs in some lines of insurance and natural disasters have intensified political pressure to constrain insurance prices and maintain availability of coverage.

Insurance regulatory activities are divided into two primary categories: solvency regulation and market regulation.[1] Solvency regulation seeks to protect policy-holders against the risk that insurers will not be able to meet their financial obligations. Market regulation attempts to ensure fair and reasonable insurance prices, products

* The author thanks two anonymous referees for their helpful comments and suggestions.
[1] Klein (1995).

and trade practices. Solvency and market regulation are inextricably related and must be coordinated to achieve their specific objectives. Regulation of rates and market practices will affect insurers' financial performance, and solvency regulation constrains the prices and products that insurers can reasonably offer.

In the European Union these forces have had a considerable effect on insurance regulatory institutions. Over the last decade, the European Commission has engaged in an unprecedented programme to rebuild the framework for insurance regulation. This effort has culminated in the Directive for Solvency II.

The main driving force for the development of the European Single Insurance Market has been the promotion of deregulation of insurance markets in all Member States, by means of the First, Second and Third Insurance Directives. These Directives have aimed at creating a level playing field for all European insurers. Intentions have materialised in at least two areas: (a) the insurance of large risks, and (b) the expansion and the consolidation of the major European insurance groups in the insurance markets of all Member States. Deregulation and increased competition have had beneficial effects in terms of scale efficiency in most national insurance markets: during the period 1995–2001, the great majority of EU insurance companies operated under conditions of decreasing costs (increasing returns to scale). Mergers and acquisitions have been facilitated by the liberalised EU market, and encouraged by the fact that scale in the insurance sector has become a source of efficiency gain that potentially dwarfs all others. One feature of the emerging European insurance market has been the growth of consolidated insurance groups across Europe.[2]

At the same time, the pressures of deregulation and intense competition have placed great pressure on the less-competitive insurers, whose alternative options are exit, merging or selling, or bankruptcy. The assumption made in this paper is that as a result of the aforementioned forces there will be an increase in the frequency of financial distress or bankruptcy of insurance companies across Europe. The trend has been already set with the commencement of the liberalisation process in the early 1980s, with significant numbers of insolvencies in certain countries: (a) in Spain, since 1984, 259 life and non-life insurance companies have been wound-up; (b) in the United Kingdom, 26 general insurers and two life insurers defaulted; (c) in Greece, 65 non-life insurers and one life insurer went into insolvency; and (d) in France, five non-life insurers went into liquidation.[3] Further evidence from the United States (see section "Guaranty funds and insurer insolvencies" below) shows that the higher the level of deregulation and competition, the higher the rate of insurance insolvencies. Moreover, it should be noted that despite, or even because of, the imminent implementation of the Directive for Solvency II, it is expected that the combined forces of deregulation and competition will drive many insurers to financial bankruptcy. Finally, the question of insurer insolvency in Europe should be addressed in an organised manner, because in most countries private insurance is gaining more importance as a complement to social insurance, in particular with respect to pension and health provision.

[2] Fenn *et al.* (2008).
[3] OXERA (2007).

Therefore, there is great need to evaluate the option of establishing a network of national guaranty funds for the protection of the policy-holders. Already the European Commission is examining this issue in detail.[3,4] In the United States, all States had established separate guaranty funds for the life and non-life sectors by the early 1990s.

The objective of this article is twofold: first, to present a holistic approach to insurance regulation and, second, to put forward the proposition that the establishment of guaranty funds will facilitate the effectiveness of the supervisory authorities in the European insurance markets, which will go through the consolidation process. In the section ''Objectives of insurance regulation'', we summarise the theories for insurance regulation and build a holistic approach to this effect. In the section ''Solvency regulation and guaranty funds'', an explicit analysis of the role of guaranty funds in the new regulatory environment is undertaken. In the section ''Guaranty funds and insurer insolvencies'', we present the historical record of insurer insolvencies. In the section ''Design of guaranty funds'', we analyse the main issues concerning the design of guaranty funds, and in the final section we present the conclusions.

Objectives of insurance regulation

Economists, political scientists and legal scholars offer various theories to explain regulation and regulatory behaviour. Some of these theories are normative in nature and some are positive. The applications of the theories of regulation in the field of insurance have been extensively reviewed by Klein.[1]

The classical, normative view of economic regulation is that its objective should be to mitigate the impact of significant market imperfections. This is the ''public interest theory'', which focuses on the design of institutions, by presumably benevolent regulators, to discourage rent-seeking behaviour. This theory has been applied to insurer solvency on the basis of inefficiencies created by costly information and agency problems,[5] or on the basis of regulation of insurance prices,[6,7] or on the basis of barriers to entry that diminish competition.[8]

A major alternative to the public interest view posits that regulators seek their own interest by maximising political support rather than economic efficiency. Known as the ''theory of economic regulation'', this analysis suggests that regulators will seek to enforce prices somewhere between the competitive level and profit-maximising level, depending on the cost and demand conditions and the relative political sensitivities of consumers to prices and insurers to profits.[9] Harrington[7] suggests that government officials may reap political benefits from suppressing insurance prices below

[4] European Commission (2008).
[5] Munch and Smallwood (1981).
[6] Joskow (1973), Hanson *et al.* (1974).
[7] Harrington (1992a).
[8] Cummins and Danzon (1991).
[9] Peltzman (1976).

competitive levels if consumers and voters fail to appreciate the long-term adverse effects of such a policy.

Meier[10] incorporates additional variables in his model of the political economy of insurance regulation, including regulators' norms and resources, political leadership, the courts and the complexity of the regulatory issues. Consumer groups are expected to push for greater regulation. Political elites—the legislature and the courts—mediate among competing groups and pursue their own policy values.

Willenborg[11] applies the theory of the "New Regulatory Economics" to study the issue of "integration vs. separation" in organising insurance supervision at the State level. This theory characterises regulation as an agency problem with an informationally disadvantaged principle. In the framework of this theory, it is shown how the choice of regulatory structure, in particular separation of regulators, can arise endogenously to thwart the potential for "capture" of regulators; regulatory separation creates incentive constraints that prevent the formation of coalitions and limits regulator discretion.

Nektarios[12] has argued that the main statements of aims of insurance regulation are little more than axioms, and he suggests a holistic analysis to help explain failures of the free market mechanism and demonstrates appropriate ways for state intervention in insurance markets. The theory of social intervention in insurance markets for purposes of micro-efficiency is built upon three bases. First, it is presumed that the "ideal" insurance market achieves perfect economic efficiency under the strict premises (the duality conditions) of this model and with no need for intervention on the part of the State. Second, the duality conditions pertain to the following: all interested parties have full information, absence of external economies, zero transaction costs, automatic market adjustments to changes in supply and demand, full competition, convexity in consumption and production, etc. Third, an identification of the situations in which existing insurance markets do not or cannot meet those conditions (market failures).

To simplify the subsequent analysis, we shall refer to three categories of prerequisites that do not allow insurance markets to approach a state of maximum efficiency. The three prerequisites are (a) existence of external economies in insurance markets, (b) market failures, and (c) concern with the social environment. Table 1 shows the three prerequisites (first column), the forms of state intervention deemed appropriate (second column) and the regulated activity (third column). Certain brief comments are in order.

External economies in insurance markets are very significant indeed. The existence of positive external economies may be rectified by means of (a) subsidisation of either the consumers or the producers and (b) direct production. The resulting regulated activities are tax incentives to insureds and public/private schemes for catastrophe risk management.

[10] Meier (1988).
[11] Willenborg (2000).
[12] Nektarios (1987).

Table 1 State intervention in insurance markets

Prerequisites for state intervention	*Forms of state intervention*	*Regulated activity*
External economies	1. Subsidisation of the consumer 2. Subsidization of insurance production • Not observed in normal insurance lines, because of insurmountable administrative problems • Evident in catastrophe risk management	1. Tax incentives to policy-holders 2. Catastrophe risks • Public organisations for catastrophe insurance • Public/private schemes
Insurance market failures	1. Information asymmetry: provision of sufficient information 1.1. For the insurance company 1.2. For the insured	1.1. Not regulated 1.2.1. Insurance education and public campaigns 1.2.2. Standardisation of insurance contracts 1.2.3. Grouping together insurance coverages
	2. Adjustment lag in insurance markets: improvements on the demand side	2.1. Content of insurance contract 2.2. Insurer solvency 2.3. Quality of insurance service: (a) Licensing of agents/brokers (b) Insurer sales practices (c) Unfair trade practices
	3. Competition conditions: pricing of premiums • Traditional methods: (a) Prior approval (b) File and use • New Environment: Full competition and advanced methods of supervision	• Premium rates • Solvency surveillance • Guaranty funds
Concern with the social environment	1. Insurance and distribution of income: insurance of catastrophe losses 2. External diseconomies: insolvencies and bankruptcies of insurance companies 3. Paternalistic state: compulsory insurance for Motor TPL, uninsured motorist, substandard risks.	• Catastrophe insurance schemes • Solvency surveillance • Guaranty funds • Compulsory insurance • Residual markets

Source: Nektarios (1987).

Market failures in insurance are evident in three cases: (a) when the interested parties do not have adequate information for effective decision-making, (b) when the market does not adjust fairly fast to changes in supply and demand, and (c) when there is no adequate competition. In the first case, intervention trends consist of educating the public, standardising the insurance policies and grouping together insurance coverages. In the second case, the process of adjustment in insurance markets is particularly problem-ridden, mainly on the demand side. This state of affairs may be better understood if we consider three basic variables of insurance

demand: the content of the insurance policy, the solvency of the insurance "promise" and the real quality of services offered. The failures of the market mechanism manifest themselves in the fact that it is impossible to correct *a posteriori* the oversights that happened at the time the insurance contract was effected; therefore, the respective activities must be properly regulated. In the third case, the level of competition is regulated by means of insurance pricing policies. Traditionally, the supervisory authorities imposed "prior approval" or "file and use" rules. The European policy since the early 1990s has been "open competition" and concomitant sophisticated solvency surveillance systems.

The concern with the social environment is based on the fact that even perfectly functioning insurance markets would not eliminate the desire for market interference because of concern with either the distribution of income, or the existence of external diseconomies, or the paternalistic nature of the State. Concern with catastrophe losses leads to public/private catastrophe insurance schemes. Concern with the potential effects of insolvencies and bankruptcies of insurance companies requires the establishment of guaranty funds. And the enactment of various types of compulsory insurance is a further way the modern paternalistic State intervenes in the insurance markets.

The theoretical framework presented here allows for better insights into the logic of state intervention in insurance markets and permits the derivation of the appropriate forms state intervention may assume. Furthermore, this analysis may facilitate the task of the supervisory authority, concerning the delineation and structure of the essential processes for supervising the insurance market, the assessment of the means for achieving the basic priorities, and the development of a control system for monitoring implementation effectiveness.

Prominent forms of state intervention are those of solvency monitoring and the operation of guaranty funds. Solvency regulation encompasses a broad range of regulatory activities, including financial reporting, early warning systems and financial analysis; the ultimate goal is to alert regulators if actions need to be taken against an insurer to protect its policy-holders. A second level of protection of the policy-holders is based on the establishment and operation of the guaranty funds, if preventive regulatory actions are too late or unsuccessful and the insurer becomes severely impaired or insolvent.

There is a trade-off between protecting people against loss when insurers fail and the incentives for insurers to be safe. The reason is that protection against loss reduces consumers' demand for lower insolvency risk and the incentive to seek a safe insurer, thus dulling one of the major influences that encourages insurers to hold more capital. Holding additional capital increases insurer tax costs and thus the amount of premiums needed to provide a given amount of coverage. Therefore, beyond some point, the marginal costs of reducing insolvency will exceed the benefits. As a result, the total costs of an "insolvency proof" insurance system would be unattractive to consumers.[13] This argument, in addition to whatever has been said thus far, provides the final verdict in favour of the establishment of guaranty funds.

[13] Harrington (1992b).

Solvency regulation and guaranty funds

Insurance regulators have traditionally tried to avoid recognition of insurer insolvency, because there was no effective way to protect the policy-holders of the insolvent company from the adverse financial consequences of that insolvency.[14] The reluctance to recognise insolvencies can adversely affect the public interest in a variety of ways:

- A regulatory system that emphasises the desirability of keeping every insurer afloat is likely to oppose innovations in the regulated business, especially if they involve a degree of financial hazard.
- While there is a chance that postponement of official action may save a failing company, there is at least an equal chance that the insolvency will become deeper and more severe as time passes.
- The avoidance of the official recognition of an insolvency may also result in other undesirable effects during the unofficial rehabilitation period. During this period, a company may resort to clandestine and irresponsible acts, such as coercion, chiselling and excessive delay in claims settlement, speculation in risky securities and raising new funds from disreputable sources.

Insurance and insurance regulation have gone through substantial changes in the last 15–20 years. Changes in consumer expectations and in the structure of the insurance business itself dictate corresponding changes in both regulatory priorities and practice. Conjoined, they create great pressures for substantial alterations in the way the financial condition of insurers is regulated.[15]

Consumer expectations about the insurance product and the role of government have been changing. These changes involving demands for increased availability, enlarged benefits and lower and more competitive prices, have all, to the extent implemented, lowered the margin of financial safety within which insurers have been conditioned to operate. Consumers today expect much more from insurance regulation than merely that it operate as a passive policeman, keeping the insurance business honest and solvent. They expect, instead, that insurance regulators will not only be responsive to articulated needs, but also that the regulators will identify and find solutions to problems that are only vaguely felt and insufficiently focused to be articulated by the members of the consuming public.

At the same time the structure and the operation of the insurance industry has changed. The implementation of the Second and Third Insurance Directives in the European Union have created a common market in insurance, based on deregulation and competition. The distribution system, too, has taken on greater complexity and variety in both life and property insurance, with the independent agent now competing with the professional broker and group marketing plans, and the direct writers using employed salesmen or soliciting by mail/phone/Internet. The end result is that insurers are increasingly operating through several modes of selling.

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[14] Kwon *et al*. (2005).
[15] Monkiewicz (2007).

The investment function has taken on a new importance and sophistication. Competition with other financial institutions and the desire to maximise yields have contributed to this increased emphasis on the investment function. Some insurance companies have at times tended to upset their historic role and to regard the underwriting process as chiefly a means of raising funds for investment. As there are more options open to insurer management, so also are there greater incentives to exercise those options in a search for new roads to profitability.

Moreover, the walls have broken down, both as against the insurers' entry into the rest of the economy through the acquisition of non-insurance subsidiaries and as against the absorption of insurers into diversified holding companies in which other economic interests are often dominant. The insurer in a holding company system may even be regarded, not in its traditional fiduciary role, but as a ready source of capital. An insurer so situated may find itself under heavy pressure to show a profit in a particular year and some of the methods of doing so can be detrimental to the long-run financial solidity of the insurer.

Fortunately, the new challenges analysed above have come at a time when the new regulatory regime of Solvency II has been proposed for the European Union. The greater control that insurance companies now have over the way they do business and the kinds of risks to which they subject themselves mean that it is more appropriate than previously that regulators should establish and enforce principles of financial safety, which must be maintained if the company is to remain in business. The greater the freedom with which insurance companies may alter the ways of doing business, the more they should be held liable for the results of their own decisions.

It is suggested that the implementation of the new supervision regime of Solvency II should be accompanied by the introduction of guaranty funds in all Member States of the EU for the major branches of insurance involving mass risks. The argument is that the best opportunity available for meeting the challenges to the regulation of financial condition of insurers, presented by the changing role of the insurance regulator and the changing structure of the insurance industry, lies in developing the guaranty funds to their full potential as hazard-diffusing devices. Such an arrangement will alter the nature of the security behind the insurance promise itself. The entire insurance system stands in effect behind each promise. By placing the full financial strength of the insurance industry behind the promise of the individual insurer, the nature of the task of the regulator changes from one of protecting the individual policy-holder from loss to one of protecting policy-holders as a whole from undue loss. The best method will usually be the swift detection and swift removal of a failing company from the insurance marketplace.

If the concept of the guaranty funds is carried to its full and logical conclusion, and if we think about the funds not simply as a way of helping innocent citizens, it will be apparent that the funds should have a major impact upon the way in which we regulate the financial condition of insurance companies. The essential idea of the insolvency protection mechanisms is like the idea of insurance itself. The risk of loss from the insolvency of a particular insurance company is transferred from the policy-holders of that company and, either directly or through the mechanism of a Fund, placed upon all insurance companies and, ultimately, upon all policy-holders.

A company's policy-holders do not have to look for their protection solely to that company, but instead look through it to the insurance industry as a whole. This is a fundamental change in the nature of the security behind the insurance promise. It therefore requires fundamental changes in the regulatory process, which are discussed in turn.

Change in nature of regulation

The first of these changes is in the regulatory response to the failing company. Presently, the emphasis is on keeping such a company in continued existence as long as there is a flicker of hope that the company may find some way to survive. However, where guaranty funds promise full policy-holder protection, efforts to save a failing company cannot be justified on grounds of policy-holder protection. Moreover, the existence of the funds points to the conclusion that the company should be taken over by the regulator at the first sign of serious trouble rather than after it is unquestionable that the company cannot be saved and is clearly insolvent. The funds have shifted, not eliminated, the loss from insolvency. In this case the public interest requires simply that the loss be kept as small as possible. In other words, the existence of the funds does eliminate one major reason (protection of the policy-holders) for attempting to preserve a failing company, and does provide a new factor (minimisation of financial loss to the Fund and the public) indicating the desirability of prompt seizure.

The latter issue requires some further discussion. It has been shown that the poor management of failed insurers increases substantially the ultimate costs to the guaranty fund; insurer insolvencies are, on average, three to five times more expensive than those of other financial institutions.[16,17]

Change in regulatory priorities

The second implication of the guaranty funds is with respect to the priority which should be attached to regulation of financial condition. The funds, like other kinds of insurance, do not merely shift the loss from insolvencies. They also change the nature of those losses. From the point of view of society, insurer insolvencies with resulting uncompensated losses can destroy the value of every insurance policy by whomever issued. Therefore, in these circumstances the regulatory priority is explicitly on the prevention of insolvency. The guaranty funds, however, have the potential to reduce the costs of insolvencies and to make those costs more measurable.

There is a counter-argument to the proposition that guaranty funds will improve regulatory efficiency. Guaranty funds may be a source of moral hazard for both regulators and insureds. Regulators may look upon the funds as a source of "free-cash-flow" and exercise excessive forbearance, knowing that the funds will bail them out when placing a company into receivership is unavoidable.[11,16,17] Moreover, the

[16] Hall (2000).
[17] Grace *et al.* (2003).

operation of a fund may reduce market discipline in terms of the actions of buyers and intermediaries. This could be especially true for sophisticated commercial buyers.[18,19]

Therefore, the existence of a fund does put the problem of insurer insolvency into a new context, where prevention of insolvency should not be an absolute goal of insurance regulation, but should be considered as one of many goals which need to be weighed against each other. Such a balancing is necessary in connection with determining the appropriate balance to be struck by the legal framework between financial condition, on the one hand, and the availability, quality and price of the insurance contract, on the other. Furthermore, in order to make possible a rational balancing of interests, it is important that regulation of the financial condition move away from concentrating on *ad hoc* solutions to particular problems, and move towards the development of general rules of conduct applicable to the financial condition of all insurers. This need is completely satisfied by the new Solvency II system of regulation.

Creation of new regulatory issues

A final implication of the development of the guaranty funds is with respect to the regulation of the financial condition of the insurance industry considered as a whole. The funds impose the risk of loss from insolvency upon the entire insurance business, and thus require regulation of this new risk-bearing structure. They raise new kinds of questions.

First, what is the capacity of the insurance industry to absorb insolvency losses without raising premiums to the point where some policy-holders would be driven away, in a new kind of adverse selection which could destroy the entire enterprise?

Second, what kinds of major catastrophes could impose strains on the capacity to absorb insolvencies, and how can these consequences be guarded against?

Third, what is the proper balance in distributing the costs of insolvencies among generations of policy-holders? To what extent should future policy-holders pay for present insolvencies (as is the case with post-assessment mechanisms), or should present policy-holders pay for future insolvencies (as is the case with pre-assessment funds)?

These questions take on a particular importance in the face of the high and growing degree of mobility of capital into and out of the insurance business. We try to deal with these issues in the section ''Design of guaranty funds''.

Guaranty funds and insurer insolvencies

The U.S. insurance market has been always more deregulated and more competitive than the EU insurance markets. Evidence shows that the result has been a higher rate

[18] Cummins (1988).
[19] Lee *et al.* (1997).

of insolvencies in the United States.[20] More recent data confirms this trend.[21] In the United States, all states had established guaranty funds for both property-liability and life-health insurance by the early 1990s.

Till the early 1980s, the U.S. insurance market experienced low insolvency rates and most insolvent companies were small. Beginning in the mid-1980s and continuing through the early 1990s, the number of insurer insolvencies increased significantly compared to historical norms. This was the period of extensive deregulation in the financial and insurance markets and in the economy in general. During this period, approximately 1 per cent of both property-liability insurers and life-health insurers have failed on average each year. Many factors contributed to insurer insolvencies, including inadequate prices, excessive growth in business written compared to capital, excessive investment risk, catastrophe losses and declines in asset values. Management fraud played a role in understating claim liabilities and overstating asset values.

For the U.S. property-liability insurers the number of insolvencies ranged from 10 to 60 per year in the period 1981–2001. The largest amounts of insolvency losses took place in the 1980s, with an average annual value around US$600 million. During this period, most insolvent insurers wrote large amounts of business liability insurance, including products liability, environmental liability and professional liability. These insurers are alleged to have deliberately understated their estimated liabilities and used fraudulent reinsurance arrangements. The prolonged soft market in the 1990s contributed to a new round of major insolvencies in the late 1990s and early 2000s.

For the U.S. life-health insurers the number of insolvencies ranged from five to 45 per year in the period 1981–2001. The largest amounts of insolvency losses took place in the 1990s, with an average annual amount around US$400 million. The large life insurer insolvencies primarily reflected reductions in the value of assets, due to heavy investments in high yield bonds or to depressed commercial real estate values. These insolvencies were preceded by substantial cash withdrawals by life insurance and annuity policy-holders who had become concerned with the safety of their funds. The latter phenomenon has not repeated itself even during the current turmoil with the AIG insurer, because of the timely guarantees offered by the U.S. Government, underlining the utmost importance of the existence of a last-resort guarantee.

In the European Union there are significant differences among the various guaranty funds operating in the respective insurance markets. One or more than one guaranty funds operate only in 13 countries.[3] More specifically, five countries have general schemes that cover both life and non-life insurance (Latvia, Malta, Romania, Spain and the United Kingdom); three countries have a general scheme for life insurance (France, Germany and Poland); and another three countries have a general scheme for non-life insurance (Denmark, France and Ireland). Finally, six countries have special schemes that cover very specific classes of non-life insurance (Belgium, Finland, Germany, Italy, Poland and Spain). In addition to these funds, all countries have guaranty funds for Motor TPL insurance. The conclusion is that there are many

[20] Harrington and Niehaus (2003, Chapter 7).
[21] Weiss Ratings (2007).

Member States in the EU without guaranty funds for the major branches of life and non-life insurance. Last-resort protection schemes exist in other sectors of the financial services industry. In particular, deposit guaranty funds and investor compensation arrangements exist in all EU Member States, and minimum protection standards have been harmonised at the European level through implementation of the 1994 Deposit Guarantee Directive and the 1997 Investor Compensation Scheme Directive. However, there is no such common European framework in the insurance sector.[3]

In the European Union, insurance failures have been infrequent owing to, among other reasons, internal risk-management practices and the prudential supervision framework.[3] Notably, a number of schemes have not had a single case of insurance failure that would have triggered intervention by the scheme. This applies to the general scheme in Malta, as well as to the special schemes that cover only one or a few branches of non-life insurance (Belgium, Finland, Germany and Spain). The one case of life insurance failure in Germany was dealt with by the scheme established under private initiative, but there has not been any other failure since the implementation of the statutory scheme. Where intervention of statutory schemes is observed, this has been limited for most of the schemes in terms of numbers of insolvencies dealt with or claims and costs arising (France, Latvia, Denmark).

The scheme with a comparatively high degree of activity is the general winding-up scheme in Spain. This scheme has assumed responsibilities for the winding-up of 259 insurers since its establishment in 1984 (including those relating to motor cover). The U.K. general scheme has dealt with fewer failures, but has paid out more significant amounts. The French non-life scheme has dealt with the liquidation of five non-life insurers (excluding motor). The Polish scheme for life and specific classes of non-life insurance has dealt with a total of seven bankruptcies since 1993 (one life insurer and six non-life insurers).The Romanian scheme for all classes of life and non-life insurance has dealt with three bankruptcies of composite insurers. The Greek scheme for motor insurance has dealt thus far with 65 insolvencies of small or medium insurers.

The conclusion is that insurance insolvencies are rare in Europe. However, neither the current nor the future solvency regime creates a zero-failure environment. Insurance failures have occurred, and are likely to occur going forward, even if very infrequently. If insurance failures cannot be ruled out, the question is what will happen if an insurance insolvency does occur. Establishing a guaranty fund to provide explicit guarantees may be the preferred outcome. For several EU Member States, it was the occurrence of an insurance insolvency that led to the establishment of a guaranty fund in the first place. In addition to protecting individual consumers, a guaranty fund may have broader positive market impacts if it preserves consumer confidence or prevents market disruption.[3] In the European context, this is of utmost significance because in most countries private insurance is gaining more importance as an integral part of social insurance for pensions and health.

Design of guaranty funds

The design of guaranty systems has been the subject of considerable controversy both in the United States, where all states have funds for the life and non-life sectors, and in

the EU, where the European Commission has started the process of public consultation on insurance guaranty schemes.[4] Even if consumer protection and market stability (denoting promotion of competition and improvement of the operation of the market) were the primary objectives of a guaranty fund, these would still need to be balanced against secondary objectives—that is, containing direct costs, limiting market distortions and reducing administrative expenses.[16] Three of the most important design issues are: (a) the level of coverage, (b) the method of funding, and (c) the potential advantages of risk-based assessments.[22] Another issue is the degree of harmonisation of the guaranty funds at the EU level.

Level of coverage

The scope of protection provided by the guaranty fund determines the direct costs of the system. To that effect, in the United States the insurance guaranty funds cover all major types of coverage sold by primary insurers (reinsurance is excluded): claims in excess of a small deductible are covered up to a maximum limit of US$300,000 per claim. Most schemes provide some protection of unearned premium. Some funds limit coverage for large business buyers. In the life-health sector, funds exclude coverage for savings accumulations in contracts where the investment risk is borne by the policy-holder. Maximum amounts of protection are US$300,000 for death and illness claims and US$100,000 for life insurance policy-holder savings and annuity accumulations. Only a few funds provide coverage from US$1 million to US$5 million for group annuity contracts. Most funds have interest rate adjustment clauses, which limit coverage of investment income (2–3 per cent less than the Moody's corporate bond yield) for policies that involve savings accumulations.

These provisions may serve as a useful background for the design of respective schemes in the EU.

Method of funding

The structure of funding of the guaranty funds can have important implications for the cost to industry, bearing in mind that the levies imposed on industry can be expected to be passed on to, and ultimately borne by, customers. The burden of guaranty fund assessments are ultimately shared by (a) all policy-holders through higher insurance rates, (b) taxpayers because of premium tax offsets and deductions for income taxes, and (c) owners of insurers.[23]

Ex-ante funding could increase capacity by creating a large pool of resources to finance claims with speed and certainty. The counter-argument is that this method may impose disproportionate costs if the frequency and size of insurer failures are small. Ex-post funded schemes can be operated at virtually no direct cost to the insurance industry, at least to the point of an insurance failure occurring.

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[22] Cooper and Ross (1999).
[23] Barrese and Nelson (1994).

The discussion about pre- vs. post-insolvency assessments is well known in the insurance literature and, in the specific case, the choice largely depends on the timing and the level of expected insolvency costs, the financial capacity of insurers and the availability of alternative sources of financing.[24]

In the United States, all guaranty funds, except in the State of New York, levy post-insolvency assessments, on a pro-rata basis on the premium of surviving insurers (annual assessments are capped at 1 or 2 per cent of premiums). Some states allow insurers to offset 50–100 per cent of assessments against future state premium taxes over a five to 10-year period. Assessments also are deductible when calculating insurer state and federal taxable income.

In the EU the majority of schemes are funded *ex-ante* or involve a sizeable element of *ex-ante* funding. By contrast, the U.K. guaranty fund is essentially ex-post funded.

Moreover, it should be mentioned that guaranty costs have not been significant in the past. In the United States the worst case (the 1987 total insolvencies, evaluated in 1999 dollars) required a total assessment of less than one-half of 1 per cent of countrywide property-liability premium.[20] In the EU the worst insolvency case required total assessments below 0.1 per cent of gross premiums.[3]

Risk-based assessments

The existence of a guaranty fund may lead to adverse behaviour of the relevant parties, changing their incentives and thereby exacerbating the moral hazard of insurers and reducing the motivation for consumers to seek coverage from safe insurers. Moreover, the associated direct costs may have an adverse effect on the structure, competitive process and indeed the stability of the insurance market.

In principle, risk-based assessments could help deter excessive insolvency risk, because higher risk behaviour would require an insurer to pay higher assessments.[18] In practice, however, risk-based might reflect only a few broad risk categories, which would reduce any beneficial effect on incentives.[25]

The risk-based assessment issue is related to *ex-ante* vs. ex-post insolvency funding. Ex-post risk-based assessments, which would allocate a greater share of total assessments to higher risk insurers, would probably have less effect on moral hazard incentives than *ex-ante* risk-based assessments. The reason is that higher risk insurers are more likely to become insolvent and thus less likely to have to pay any assessments. In contrast, *ex-ante* risk-based assessments require insurers to pay in advance in order to operate with higher risk. As a result of these influences, risk-based guaranty fund assessments might need to be prefunded. A combination of some *ex-ante* funding with risk-based assessments that vary over time in relation to the average cost of paying claims of insolvent insurers might provide safe insurers with similar incentives to press for effective regulation. The reason is that insurers still would be exposed to increased assessments in the event of adverse insolvency experience.[13]

[24] Krogh (1972), Brewer *et al*. (1997).
[25] Downs and Sommer (1999).

In the EU the basis on which annual contributions are based varies. The majority of schemes raise funds on the basis of gross or net premium income. In other schemes contributions are allocated to participating insurers in proportion to each participant's share of the technical provisions. Only Denmark raises contributions, for the non-life scheme, on the basis of the number of policies. Moreover, it should be noted that only the German scheme employs risk-adjustment factors, which depend on the insurer's equity capital relative to its solvency margin.

Harmonisation at the EU level

For the European Union there are two options: first, to preserve the *status quo*—that is, each Member State decides whether to introduce a guaranty fund; and second, to establish an EU-wide approach to guaranty funds.

The problems with the *status quo* are limited for two reasons: first, the level of cross-border insurance business (carried out via branches and freedom of services) remains low; and second, few insurance failures with cross-border implications have occurred.[3] However, if the objective is to establish a comprehensive and consistent system of national guaranty funds in all Member States, then an EU-wide approach is required to harmonise: first, the geographical reach of the national guaranty funds (home state vs. host state); and second, the minimum protection standards (class of insurances covered, claimant eligibility, and protection amounts and limits). The existence of a guaranty fund may create externalities between different jurisdictions. The "home state" regulator can exercise excessive forbearance knowing that some of the insolvency costs will be externalised to other jurisdictions, if the system allocates costs according to where an insurer does business. An alternative structure would be to allocate all costs to the "home state" of the insurer. A potential disadvantage of this would be that a large insurer could fail and generate large costs, but be domiciled in a small state with limited market capacity. This problem caused the United States to adopt the "host state" option.

It is suggested that the EU should (a) adopt the "host state" option in the operation of the national guaranty funds, and (b) undertake a degree of harmonisation of particular aspects of the national guaranty funds. Such an arrangement will result in the equal treatment of (a) consumers across jurisdictions, and (b) domestic and incoming insurers operating in the same jurisdiction.

The alternative option has been also examined: that is, the "home state" principle may be preferable because the "host state" structure would not fit well with the EU supervisory framework. The provisions of the "group supervision" under Solvency II may affect the geographical scope of the national guaranty fund: there are advantages in assigning subsidiaries to the home state guaranty fund of the parent company. However, such an arrangement would not satisfy the objective of ensuring equivalent consumer protection and a level playing field between subsidiaries and domestic insurers within a jurisdiction, both for countries with a large number of insurance group headquarters and for countries with large number of foreign subsidiaries.[3]

Conclusions

The main assumption of this paper is that the gradual liberalisation of the European insurance field will intensify competitive pressures on all insurance markets and this will put pressure on an increasing number of insurers to either exit normally, or to merge or sell, or to go bankrupt. This trend will be intensified also by the implementation of the Directive for Solvency II.

It is shown that in such an environment it is advisable to establish guaranty funds in all national insurance markets in order to protect the policy-holders from the insolvency risk. The argument is that, in addition to protecting the victims of insolvency, such an arrangement is optimal as an insurance device, which will increase consumer confidence and market stability.

Moreover, the establishment of the guaranty funds will facilitate definitely the ongoing process of consolidation across the European insurance markets. The supervisory authorities will not have to hesitate to take action, as they do now, in cases of financially distressed insurers, but will move swiftly to remove the insolvent insurers. That is, the guaranty funds will become an additional policy tool in the framework of applied insurance regulation. The overall supervision process is placed in the proper perspective in the framework of a holistic approach that is based on sound economic analysis.

Finally, it is shown that the costs of guaranty funds can be adjusted through scheme design in such a way that the operation of the funds will be pro-competitive and will improve the operation of the insurance markets.

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